Global Asthma Network

"A world where no-one suffers from asthma"

Phase I Manual

Global Surveillance: Prevalence, Severity, Management and Risk Factors

www.globalasthmanetwork.org

Global Asthma Network

Global Asthma Network Phase I Manual

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ISBN: 978-0-473-31442-2

August 2015

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Abbreviations:

AVQ 3.0	Audio Visual Questionnaire 3.0 (International Version of the ISAAC Video Questionnaire)
BMI	Body Mass Index
CI	Confidence Intervals
EQ	Environmental Questionnaire
ISAAC	International Study of Asthma and Allergies in Childhood
NCDs	Non Communicable Diseases
OR	Odds Ratios
SES	Socio Economic Status
THE UNION	The International Union against Tuberculosis and Lung Disease
WHO	World Health Organisation

1. What is the Global Asthma Network?

1.1 History

The Global Asthma Network emerged from the success of the International Study of Asthma and Allergies (ISAAC) programme which began in March 1991, whereby pre-existing multinational collaborative projects from Auckland, New Zealand and Bochum, Germany, each investigating variations in childhood asthma at the population level joined to form ISAAC.

The Global Asthma Network (http://www.globalasthmanetwork.org) was established in 2012 to identify and address the problem of asthma which is an important Non-Communicable Disease (NCD) globally. The Global Asthma Network evolved from ISAAC and the International Union Against Tuberculosis and Lung Disease (The Union), two organisations dedicated to helping countries identify and address this important NCD for more than two decades, and from the Global Asthma Report 2011. The 2011 report was timed to coincide with the United Nations High-Level Meeting on NCDs, which took place in New York on 19–20 September 2011. Subsequently the Global Asthma Network published the Global Asthma Report 2014. It was launched at the 45th Union World Conference on Lung Health, Barcelona, Spain, 28 October to 1 November 2014. The Global Asthma Network Steering Group is named on pages 214-215 of this manual.

1.2 Purpose of the Global Asthma Network

The Global Asthma Network aims to progress from these reports and engage government's health ministers, policy-makers, health workers, people living with asthma, development partners, donors and media in efforts to improve asthma care globally. Core activities of the Global Asthma Network are: global surveillance; promotion and backing of standard case management of asthma; operational research; capacity building; engagement with policy-makers; and access to affordable quality-assured medicines. Contact details, for the Global Asthma Network Steering Group, can be found on pages 214-215.

1.3 Global Asthma Network goals

1.3.1 Global surveillance

Conduct asthma surveillance around the world and produce and disseminate surveillance data to achieve global recognition of the burden of asthma, especially the burden in low- and middle-income countries.

1.3.2 Management

Promote effective, efficient, appropriate, affordable and accessible asthma management and care to reduce the rates of death, disability and suffering caused by asthma.

1.3.3 Research

Research, develop and share evidence, success stories and practical tools that enable countries to improve and expand asthma management and prevention activities, organise the care of asthma patients to cover their whole populations.

1.3.4 Capacity-building

Stimulate capacity-building in surveillance, health education and asthma standard case management and research in asthma, especially in low- and middle-income countries.

1.3.5 Access to affordable quality-assured essential medicines

Ensure quality-assured essential asthma medicines are available and affordable in all countries - promotes a quality improvement package for the diagnosis, treatment and management of asthma.

1.3.6 Communication and advocacy on asthma and chronic airflow limitation

Raise the profile of asthma and chronic airflow limitation on national multilateral and global agendas and empower other organisations to do the same.

1.4 Global Asthma Network vision

A world where no-one suffers from asthma.

1.5 Global Asthma Network mission

To prevent asthma and improve asthma care globally, with a focus on low and middle income countries. The network will achieve this through enhanced surveillance, research, capacity building, and access to effective asthma care including quality assured essential medicines.

1.6 Global Asthma Network targets

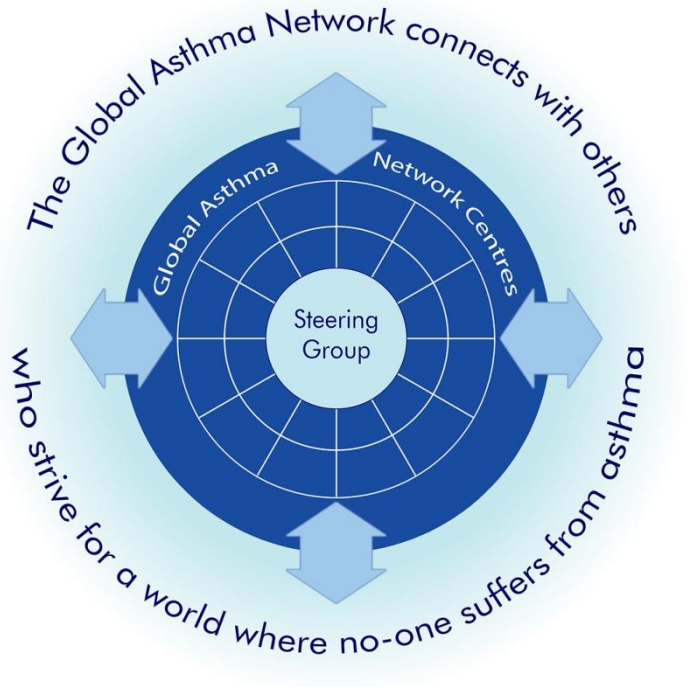
A. Decrease severe asthma by 50% by 2025 by reducing the following by 50%

- proportion of symptomatic people with asthma not on inhaled corticosteroids
- time off work/school because of asthma
- unplanned visits for asthma
- hospital admissions for asthma
- severity of asthma
- mortality from asthma

B. Increase the access to quality-assured essential asthma medicines by undertaking the following:

- on the WHO prequalification list
- on National Essential Medicines lists
- be available in all countries
- be affordable in all countries

1.7 Global Asthma Network organogram



2. Global Surveillance: Prevalence, Severity Management and Risk Factors

2.1 Overview of study design

The Global Asthma Network is a cross-sectional, multi-centre, multi-country, epidemiological research methodology which follows and expands on the methodology used in ISAAC Phase Three http://isaac.auckland.ac.nz/phases/phasethree/phasethree.html. All ISAAC publications can be found at http://isaac.auckland.ac.nz/publications/publicationsintro.html. The Global Asthma Network concerns itself primarily with asthma. However ISAAC included rhinoconjunctivitis and eczema, and these related NCDs will be part of the surveillance work of the Global Asthma Network. In addition to two age groups of children (13/14 and 6/7), adults of both age groups of children will also be surveyed.

2.1.1 Questionnaires

Written Questionnaires: These will assess the prevalence and severity of asthma, rhinoconjunctivitis and eczema in defined populations and explore management of asthma and environmental factors. The compulsory age group is 13/14 year old adolescents but not all questions are compulsory. The parents/guardians of the adolescents are strongly recommended for inclusion. Also strongly recommended are 6/7 year old children and their parents/guardians. The adolescent group will complete a questionnaire about themselves at school and will then take home adult questionnaires for their parent/s/guardian/s to complete about their own health. The younger age group will take questionnaires home for parent/guardian completion a) about the health of their child and b) about their own health. The fieldwork for each age group can be undertaken at different times.

Video Questionnaire: (strongly recommended for the adolescent group). Following completion of the written questionnaire at school, the adolescents will be shown a 6 minute video with non-verbal scenes of asthma symptoms and they will answer a written questionnaire while the video is playing.

2.1.2 Classification of centres

Centres participating in the Global Asthma Network will register with the Global Asthma Network (GAN) Global Centre by completing a Registration Document, available on the Global Asthma Network website, (example page 112), at http://www.globalasthmanetwork.org/surveillance/register.php,), indicating which age groups will participate. They will sign a declaration to undertake the protocol (methodology and data coding and entry) according to the manner prescribed in this manual by the Global Asthma Network Steering Group.

2.1.3 Expression of interest

An 'Expression of Interest' form has been in circulation since 2012 and a database of centres established (http://www.globalasthmanetwork.org/about/centres.php?region=all

An example copy of the 'Expression of Interest' form is included in this Manual and can be found on page 111. This form can also be completed via the website http://www.globalasthmanetwork.org/surveillance/expression.php

2.2 Global Asthma Network protocol

1a. Adolescents: 13/14 year olds – written questionnaire (compulsory). The compulsory requirement is the study of the adolescents. Each centre will randomly select schools from a defined geographical sampling frame and a sample of 3000 adolescents (recruited from school class registers) will be invited to participate (this number may be reduced if a centre has less than this number but must not be less than 1000 per centre unless the centre, for example, is a whole island nation with less than 1000 adolescents). They will complete the written questionnaire at school (example page 31). Height and weight measurements (strongly recommended) will be taken by the fieldworkers (refer page 187) and recorded on the questionnaire preferably after viewing and completing the video questionnaire (see 1b). Not all questions need to be included. For further details see page 117.

1b. Adolescents: Video questionnaire (strongly recommended). This 6 minute nonverbal video questionnaire on asthma symptoms (example page 44) is strongly recommended for the adolescents. The video was developed for ISAAC in response to potential translation problems with written questionnaires, and was designed to overcome the problems inherent in the administration of written questionnaires in different languages. The video questionnaire was validated for ISAAC[1-6]. This will be shown to the students following completion of the written questionnaire.

2. Children: 6/7 year olds – written questionnaire (strongly recommended). Another strongly recommended component is for centres to recruit an additional sample of 3000 6/7 year old children (this number may be reduced if a centre has less than 3000 but must not be less than 1000 per centre unless the centre is, for example, a whole island nation with less than 1000 children). The children, identified through school class registers, will take a questionnaire home for their parents/guardians to complete about their child (example page 46). The video and its questionnaire will **not** be administered to this age group. Height and weight measurements (strongly recommended) will be taken by the fieldworker at school and recorded on the questionnaire when the questionnaires are returned to the school (refer page 187). Not all questions need to be included. For further details see page 117.

3. Adults: - written questionnaire (strongly recommended). A questionnaire on asthma, rhinoconjunctivitis and eczema symptoms, management of asthma and environmental factors has been developed for the parents/guardians of both the adolescents and children (ADULT questionnaire). This is a strongly recommended module about parent/guardian health. Both age groups (13/14 and 6/7) will take the questionnaires home for parental/guardian completion and return them to school (example page 65). Not all questions need to be included. For further details see page 117. **NB:** Linking of the questionnaires is vital – see coding section page 183.

The fieldwork for adolescents and children can be undertaken at different time periods.

2.3 Requirements for centres

1. Registration: Each prospective centre must register with the GAN Global Centre. The Registration Document is available from the website http://www.globalasthmanetwork.org. Each centre has one named Principal Investigator.

2. Funding & Ethics: Each research centre is responsible for obtaining its own funding and ethical approval. Although some centres may have difficulty arranging funding, unfortunately the Global Asthma Network has no central funds to support centres. In regard to obtaining consent from the participants, for the ethical approval process, we advocate the use of passive consent to ensure the response rate is as high as possible[7].

3. Centre Report: When a Principal Investigator (or collaborator) sends a completed Registration Document to the GAN Global Centre, a personalised Centre Report, for the age group(s) to be studied, is generated and sent back from the GAN Global Centre to the centre. Questions on this report will enable a detailed research protocol to be kept by collaborators, showing how the Global Asthma Network protocol was implemented locally (please read the sample Centre Report on pages 190-200). The Centre Report includes a detailed description of the chosen study area. A detailed map of the centre study area, clearly showing the geographic boundaries, matching the written description, is required. This should be sent to the GAN Global Centre when the Centre Report and data are submitted. Ideally, the map will be a vector or shape file compatible with Geographic Information Software such as ArcGIS (available from http://www.**arcgis**.com/). If this is not possible, a hand drawn and scanned map drawn on a commercial street map or printout of google maps or similar will be acceptable. If you require further information regarding this format please contact the GAN Global Centre, info@globalasthmanetwork.org.

4. Data Entry & Transfer: Each centre is responsible for coding, entering and forwarding a copy of the data, to the GAN Global Centre (for details on coding and formats for sending data, see Data and Coding Transfer Section, page 125 of this manual). The GAN Global Centre will acknowledge receipt of the data and forward the completed data sets to one of the two data centres – London (Neil Pearce Neil.pearce@lshtm.ac.uk) for most data sets, and Spain (Luis García Marcos lgmarcos@um.es) for Spanish and Portuguese speaking centres.

5. Publications: Each centre may publish its own data without the approval of the Global Asthma Network Steering Group. However, the GAN Global Centre would appreciate a copy of any independent publications being sent for archiving to info@globalasthmanetwork.org. All publications and communications arising from comparisons of more than five international centres require the approval and authorisation of the Global Asthma Network Steering Group.

From the Global Asthma Network Steering Group

"We invite the widest possible participation in the Global Asthma Network which we envisage to be as successful as ISAAC. The commitment and dedication of every single person that participated in ISAAC, contributed to its enormous success. We believe the Global Asthma Network to be a crucial part of the process by which the nature and causes of the global variation and increases in the prevalence of asthma, rhinoconjunctivitis and eczema may be understood. We wish you well for your research".

3. Administration of the Project

3.1 Organisational structure

The organisation of the Global Asthma Network consists of:

- Collaborating Centres. Each with one named Principal Investigator (PI).
- National Co-ordinators. One per country may be appointed where there is more than one centre per country and only if there is an identified need for a National Co-ordinator, otherwise centres will operate independently and with input from the GAN Global Centre and Data Centres in the UK, Prof Neil Pearce (Neil.pearce@lshtm.ac.uk), and Spain, Prof Luis García Marcos (lgmarcos@um.es) (see page 215 for full contact details).
- The Global Asthma Network Steering Group. A Global Asthma Network Steering Group meeting is held at least annually.

The Steering Group, a group of 11 scientists from around the world, actively involved with the Global Asthma Network, meet face to face at least yearly to plan and discuss key issues. The Steering Group have regular skype conferences to discuss and resolve issues. Contact details of the Steering Group can be found on pages 214-215 of this manual.

The Steering Group collectively oversee the broad regions of the world which has followed the regions used in ISAAC. These regions were based on the six WHO regions of the world, since these are widely used and logically organised. In some instances a WHO region has been split into subregions.

The WHO and Global Asthma Network regions are:

WHO region	Global Asthma Network region
Europe	Western Europe
	Northern and Eastern Europe
Americas	North America
	Latin America and Caribbean
Africa	Africa
South East Asia	Indian subcontinent
Western Pacific	Asia-Pacific
	Oceania
Eastern Mediterranean	Eastern Mediterranean

National Co-ordinators

Where there is more than one centre in a country, and if there is an identified need, a National Co-ordinator, may be appointed. The National Co-ordinator will usually, but not always, be a centre Principal Investigator who is chosen from one of the centres within that country. A National Co-ordinator will ideally, have had prior experience from being involved with ISAAC and be able to help centres in their country with any enquiries regarding implementation of the study and data entry, coding and transfer. The National Co-ordinator would decide whether or not to hold a National meeting.

3.1.1 Global Asthma Network collaborating centres

The responsibilities of each collaborating centre are to:

- complete and submit the Registration Document (http://www.globalasthmanetwork.org/surveillance/register.php) via the website or email to the GAN Global Centre info@globalasthmanetwork.org
- obtain funding
- obtain local ethical approval
- communicate with the National Co-ordinator (if applicable) and the GAN Global Centre
- attend any planned implementation meetings (if a National Co-ordinator has been appointed)
- carry out the study according to the protocol in this manual
- send the completed data set **to the GAN Global Centre** info@globalasthmanetwork.org
- complete and submit a Centre Report (example only pages 190-200) and a map of the study area, to the GAN Global Centre at the completion of the fieldwork and at the time of submitting the data (info@globalasthmanetwork.org). A Global Asthma Network centre that participated in ISAAC may already have a map of sufficient quality to be used. The GAN Global Centre can confirm this.

Global Asthma Network centres will be issued with country and centre numbers by the GAN Global Centre following submission of the Expression of Interest form or at Registration.

3.1.2 Global Asthma Network National Co-ordinators (if appointed)

The responsibilities of National Co-ordinators (if one has been appointed) are to:

- recruit and register collaborating centres and identify Principal Investigators
- circulate the Manual
- arrange for translations to be undertaken (if required) and back translations to English of the questionnaires in accordance with the established protocol (page 124). Pre-coding of the questionnaires for the language used is a requirement of the fieldwork (see pages 183-185 for more details). Translated questionnaires are then circulated to participating centres
- decide if a national meeting of collaborating centres is necessary, to disseminate information and discuss the implementation of the fieldwork
- communicate regularly with the collaborating centres and provide assistance
- organise a national meeting of collaborating centres to discuss the results, if required

3.1.3 The Global Asthma Network Steering Group

The responsibilities of the Steering Group are to:

- recruit centres
- coordinate the implementation and conduct of the fieldwork with each centre
- coordinate the analyses and publications of data
- organise international Global Asthma Network Steering Group meetings

3.2 Funding and ethical approval

Each research centre is responsible for obtaining its own funding and for obtaining ethical approval. If there is no Ethics Committee approval should be sought from another organisation such as the School Board of Trustees. In some instances an Ethics Committee may decide that ethical approval is not required. This should be documented on the Centre Report.

4. Scientific Background of ISAAC

The prevalence of asthma, rhinoconjunctivitis and eczema has been described by ISAAC Phase One (156 centres from 56 countries, undertaken between 1994 and 1995) and Phase Three (237 centers in 98 countries, undertaken between 2001 and 2003) and has 'mapped' the prevalence of these conditions in children and adolescents[8-15] as well as investigating time trends in 104 centres in 55 countries[16-21]. All ISAAC publications can be found on the ISAAC website: http://isaac.auckland.ac.nz. ISAAC Phase Two, using child contact modules in 10 year old children, was a more in depth study in a smaller number of centres (30 centres from 22 countries), and began in 1998. Phase Two, was designed to investigate the relative importance of hypotheses of interest that arose from the Phase One results using objective markers[22-33]. Standardised questions about cough, the medical care of asthma, rhinitis and eczema and child contact protocols were developed. ISAAC Phase Three, was a repeat of the Phase One core questions with an additional Environmental Questionnaire (EQ) in centres that undertook the Phase One methodology. Additionally, the recruitment of 'new' centres was encouraged, to obtain a more comprehensive global map of asthma, rhinoconjunctivitis and eczema, particularly in low and middle income countries. ISAAC Phase Three has been a crucial part of the process by which the extent, nature and causes of the global increases in the prevalence of these conditions are understood. Brief summaries of the ISAAC Phase Three results conducted between 2000 and 2003 are as follows:

4.1 Asthma

The global prevalence and severity of asthma symptoms undertaken in ISAAC Phase Three, involved 798 685 adolescents (13/14 year olds) from 233 centres in 97 countries, and 388 811 children (6/7 year olds) from 144 centres in 61 countries[12]. As in ISAAC Phase One, wide variations in prevalence were found around the world. The prevalence of wheeze in the past 12 months in adolescents varied from 32.6% in Wellington (New Zealand) to 0.8% in Tibet (China), and in children from 37.6% in Costa Rica to 2.4% in Jodhpur (India). The prevalence of symptoms of severe asthma (defined as ≥4 attacks of wheeze, or ≥1 night per week sleep disturbance from wheeze, or wheeze affecting speech in the past 12 months) varied from 16% in Costa Rica to 0.1% in Pune (India) in adolescents, and from 20.3% to 0% in the same two centres respectively in children. Ecological economic analyses revealed a significant trend towards a higher prevalence of current wheeze in centres in higher income countries in both age groups, but this trend was reversed for the prevalence of severe symptoms among current wheezers, especially in the older age group. Thus wide variations exist in the symptom prevalence of childhood asthma worldwide. Although asthma symptoms tend to be more prevalent in more affluent countries, they appear to be more severe in less affluent countries.

4.2 Rhinitis

The global prevalence and severity of rhinitis symptoms in ISAAC Phase Three, involved 670 242 adolescents from 232 centres in 97 countries and 388 811 children from 144 centres in 61 countries[13]. The average overall prevalence of current rhinoconjunctivitis symptoms was 14.6% for the adolescents (range 1.0–45%). Variation in the prevalence of severe rhinoconjunctivitis symptoms was observed between centres (range 0.0–5.1%) and regions (range 0.4% in western Europe to 2.3% in Africa), with the highest prevalence being observed mainly in the centres from middle and low income countries, particularly in Africa and Latin America. Co-morbidity with asthma and eczema varied from 1.6% in the Indian sub-continent to 4.7% in North America. For 6/7 year old children, the average prevalence of

rhinoconjunctivitis symptoms was 8.5%, and large variations in symptom prevalence were also observed between regions, countries and centres. Thus wide global variations exist in the prevalence of current rhinoconjunctivitis symptoms, being higher in high *vs* low income countries, but the prevalence of severe symptoms was greater in less affluent countries. Co-morbidity with asthma is high particularly in Africa, North America and Oceania. This global map of symptom prevalence is of clinical importance for health professionals.

4.3 Eczema

The global prevalence and severity of eczema symptoms undertaken in ISAAC Phase Three, involved 663 256 adolescents from 230 centres in 96 countries and 385 853 children from 143 centres in 60 countries[14]. Current eczema was defined as an itchy flexural rash in the past 12 months and was considered severe eczema if associated with 1 or more nights per week of sleep disturbance. For adolescents, data showed prevalence values ranging from 0.2% in China to 24.6% in Columbia with the highest values in Africa and Latin America. For the children, data showed that the prevalence of current eczema ranged from 0.9% in India to 22.5% in Ecuador, with new data showing high values in Asia and Latin America. Current eczema was lower for boys than girls (odds ratios [OR] 0.94 and 0.72 for children and adolescents, respectively). Thus ISAAC Phase Three provided comprehensive global data on the prevalence of eczema symptoms that is essential for public health planning. This new data revealed that eczema is a disease of developing as well as developed countries.

4.4 Environmental data

Paracetamol

In 6/7 year old children from 73 centres in 31 countries the use of paracetamol for fever in the first year of life was associated with an increased risk of asthma symptoms (OR 1.46 [95% CI 1.36 - 1.56])[34]. Current use of paracetamol was associated with a dose-dependent increased risk of asthma symptoms (OR 1.61 [95% CI 1.46 - 1.77] and OR 3.23 [95% CI 2.91 - 3.60] for medium and high use *vs* no use, respectively). Use of paracetamol was similarly associated with the risk of severe asthma symptoms, with population-attributable risks between 22% and 38%. Paracetamol use, both in the first year of life and in children aged 6/7 years, was also associated with an increased risk of symptoms of rhinoconjunctivitis and eczema. In the analysis of adolescents from 113 centers in 50 countries the recent use of paracetamol was associated with an exposure-dependent increased risk of current asthma symptoms (OR 1.43 [95% CI 1.33 - 1.53] and OR 2.51 [95% CI 2.33 - 2.70] for medium and high versus no use, respectively)[35].

Antibiotics

The use of antibiotics was explored in Phase Three in a total of 71 centers in 29 countries[36]. Reported use of antibiotics in the first year of life was associated with an increased risk of current asthma symptoms (wheezing in the previous 12 months) with an OR adjusted for risk factors of 1.70 [95% 1.60 - 1.80] when adjusted for other risk factors for asthma. Similar associations were observed for severe asthma symptoms (OR 1.82 [95% CI 1.67 - 1.98]), and asthma ever (OR, 1.94 [95% CI 1.83 - 2.06]). Use of antibiotics in the first year of life was also associated, but less strongly, with increased risks of current symptoms of rhinoconjunctivitis (OR, 1.56 [95% CI, 1.46 - 1.66]) and eczema (OR 1.58 [95% CI 1.33 - 1.51]).

Truck traffic

The frequency of truck traffic on the street of residence was positively associated with the prevalence of symptoms of asthma, rhinoconjunctivitis, and eczema with an exposure - response relationship[37]. ORs for “current wheeze” and “almost the whole day” versus “never” truck traffic were 1.35 [95% CI 1.23 - 1.49] for adolescents and OR 1.35 [95% CI 1.22 - 1.48] for children. These findings that higher exposure to self-reported truck traffic on the street of residence is associated with increased reports of symptoms of asthma, rhinitis, and eczema in many locations in the world require further investigation in view of increasing exposure of the world’s children to traffic.

Breast feeding

There were 206 453 children from 72 centres in 31 countries that participated[38]. Parental reported breast feeding ever was not associated with current wheeze, with an OR (adjusted for gender, region of the world, language, per capita gross national income, and factors encountered in infancy) of 0.99 [95% CI 0.92 - 1.05], current rhinoconjunctivitis (OR 1.00, [95% CI 0.93 - 1.08]), current eczema (OR 1.05 [95% CI 0.97 - 1.12]), or symptoms of severe asthma (OR 0.95 [95% CI 0.87 - 1.05]). Breast feeding was however associated with a reduced risk of severe rhinoconjunctivitis (OR 0.74 [95% CI 0.59 - 0.94]) and severe eczema (OR 0.79 [95% CI 0.66 - 0.95]).

Farm animals

A positive association was found between early exposure to farm animals and the prevalence of symptoms of asthma, rhinoconjunctivitis and eczema, especially in non-affluent countries[39]. In these countries, ORs for ‘current wheeze’, ‘farm animal exposure in the first year of life’ and ‘farm animal exposure in pregnancy’ were 1.27 [95% CI 1.12 - 1.44] and 1.38 [95% CI 1.21 - 1.58], respectively. The corresponding ORs for affluent countries were 0.96 [95% CI 0.86 - 1.08] and 0.95 [95% CI 0.84 - 1.08], respectively.

Cats and dogs

Among children, cat exposure in the first year of life was associated with current symptoms of asthma, wheeze, rhinoconjunctivitis, and eczema, especially in less-affluent countries[40]. Among adolescents, we found a positive association between exposure to cats or dogs and symptom prevalence in more-affluent and less-affluent countries. The global multivariate ORs for children with complete covariate data were 1.17 [95% CI 1.08 - 1.29] for current symptoms of asthma, 1.13 [95% CI 1.05 - 1.23] for rhinoconjunctivitis, and 1.38 [95% CI 1.26 - 1.52] for eczema. Smaller odds ratios were found for exposure to only dogs. Exposure to only cats was associated with eczema.

Air pollution

For the adolescents (128 centres in 28 countries), the estimated average within-country change in center-level asthma prevalence per 100 children per 10% increase in center-level $PM_{2.5}$ and NO_2 was –0.043 [95% CI 0.139 - 0.053] and 0.017 [95% CI 0.030 - 0.064] respectively[41]. For ozone the estimated change in prevalence per parts per billion by volume was –0.116 [95% CI 0.234 - 0.001]. Equivalent results for the children (83 centers in 20 countries), though slightly different, were not significantly positive. For the adolescents, change in center-level asthma prevalence over time per 100 children per 10% increase in $PM_{2.5}$ from Phase One to Phase Three was –0.139 [95% CI 0.347 - 0.068]. The corresponding association with ozone (per ppbV) was –0.171 [95% CI 0.275 - 0.067].

Tobacco

There were 220 407 children that participated from 75 centres in 32 countries. For the adolescents 350 654 participated from 118 centres in 53 countries[42]. Maternal and paternal smoking was associated with an increased risk of symptoms of asthma, eczema and rhinoconjunctivitis in both age groups, although the magnitude of the OR is higher for symptoms of asthma than the other outcomes. Maternal smoking is associated with higher ORs than paternal smoking. For asthma symptoms there is a clear dose relationship (1-9 cigarettes/day, OR 1.27; 10-19 cigarettes/day, OR 1.35; and 20+ cigarettes/day, OR 1.56). When maternal smoking in the child's first year of life and current maternal smoking are considered, the main effect is due to maternal smoking in the child's first year of life. There was no interaction between maternal and paternal smoking.

Body mass index

A total of 76 164 children from 29 centres and 17 countries and 201 370 adolescents from 73 centres and 35 countries provided data that met the inclusion criteria[43]. There were associations between overweight and obesity, but not underweight, and symptoms of asthma and eczema but not rhinoconjunctivitis. Vigorous physical activity was positively associated with symptoms of asthma, rhinoconjunctivitis and eczema in adolescents, but not children. Viewing television for five or more hours/day was associated with an increased risk of symptoms of asthma, rhinoconjunctivitis and eczema in adolescents and symptoms of asthma in children.

Diet

Data from 319 196 adolescents from 107 centres in 51 countries and 181 631 children from 64 centres in 31 countries were included in the ISAAC Phase Three diet analysis[44]. For adolescents and children, a potential protective effect on severe asthma was associated with consumption of fruit ≥3 times per week (OR 0.89 [95% CI 0.82 - 0.97]; OR 0.86 [95% CI 0.76 - 0.97], respectively). An increased risk of severe asthma in adolescents and children was associated with the consumption of fast food ≥3 times per week (OR 1.39 [95% CI 1.30 - 1.49]; OR 1.27 ([95% CI 1.13 - 1.42] respectively), as well as an increased risk of severe rhinoconjunctivitis and severe eczema. Similar patterns for both ages were observed for regional analyses, and were consistent with gender and affluence categories and with current symptoms of all three conditions.

Cooking fuels

There were 198 398 children from 70 centres in 29 countries and 314 309 adolescents from 108 centres in 47 countries in this analysis[45]. The use of an open fire for cooking was associated with an increased risk of symptoms of asthma and reported asthma in children for wheeze in the past year (OR 1.78 [95% CI 1.51 - 2.10]) and for adolescents (OR 1.20 [95% CI 1.06 - 1.37]). In the final multivariate analyses, ORs for wheeze in the past year and the use of solely using an open fire for cooking were 2.17 [95% CI 1.64 - 2.87] for children and 1.35 [95% CI 1.11 - 1.64] for adolescents. ORs for wheeze in the past year and the use of open fire in combination with other fuels for cooking were 1.51 [95% CI 1.25 - 1.81] for children and 1.35 [95% CI 1.15 - 1.58] for adolescents. In both age groups, there was no evidence of an association between the use of gas as a cooking fuel and either asthma symptoms or asthma diagnosis. Because a large percentage of the world population uses open fires for cooking, this cooking method might be an important modifiable risk factor if the association is proven to be causal.

Birth weight

In this study 162 324 children from 60 centres in 26 countries participated[46]. Low birth weight (<2.5 kg) was associated with an increased risk of symptoms of asthma (current wheeze OR 1.20 [95% CI 1.12 - 1.30]). Low birth weight was associated with a lower risk of eczema ever but not with rhinoconjuncitivitis. Large babies (birth weight ≥4.5kg) were not associated with any of these outcomes. This study confirmed that low birth weight is a risk factor for symptoms of asthma, but not for rhinoconjunctivitis. The findings for eczema were equivocal.

Migration

This study included 326 691 adolescents from 11 centres from 48 countries and 208 523 children from 72 centres in 31 countries[47]. It was found that immigration was associated with a lower symptom prevalence of asthma, rhinoconjunctivitis and eczema in both age groups than among those born in the country studied, and that this association was mainly confined to high-prevalence countries. This reduced risk was greater in those who had lived fewer years in the host country.

Siblings

Questionnaire data for 210 200 children from 31 countries and 337 226 adolescents from 52 countries was included in this analysis. In both age groups inverse trends (*p<0.0001*) were observed for reported 'hay fever ever' and 'eczema ever' with increasing numbers of total siblings, and more specifically older siblings. These inverse associations were significantly (*p<0.005*) stronger in more affluent countries. In contrast, symptoms of severe asthma and severe eczema were positively associated (*p<0.0001*) with total sibship size in both age groups[48].

4.5 Methodological issues

Three papers discussing methodological issues in ISAAC and one describing the Phase Three methodology have been published. These provide the rationale for the Global Asthma Network – Global Surveillance: Prevalence, Severity, Management and Risk Factors study.

The International Study of Asthma and Allergies in Childhood (ISAAC): Phase Three Rationale and Methods[49]

Translation of questions: The International Study of Asthma and Allergies in Childhood (ISAAC) experience[50]

The impact of the method of consent on response rates in the ISAAC time trends study[7]

The challenges of replicating the methodology between Phases I and III of the ISAAC programme[21]

4.6 Significance of the proposed study

The newly formed Global Asthma Network will use international questionnaires to collect further information on the topics addressed in the Global Asthma Reports 2011 and 2014: including asthma prevalence and severity; address how people are getting diagnosed with asthma; unplanned visits including emergency room visits and hospital admissions; and evaluation of different policies for management of asthma in children and adults. Key components of the written questionnaires are: surveillance; asthma management; confirmation of doctor diagnosed asthma, rhinitis and eczema; socioeconomic status; early life environment; potential risk factors in the environment; home environment; and smoking. The data will provide new information from centres not previously involved with ISAAC and from additional questions that have been added to provide more detail about the participant and the environment and will allow some comparisons of data from existing ISAAC centres.

5. Methods

5.1 Overview

The Global Asthma Network fieldwork tools are available from the website at http://www.globalasthmanetwork.org/surveillance/manual/manual.php. Guidelines for fieldworkers can be found on pages 117-124 & 183-213. A Centre Report will be sent to PI's when they register their centre, to be completed as fieldwork progresses, and centre data should be prepared as per the Coding and Data Transfer Section pages 125 - 182.

5.2 Registration

All centres are required to register with the GAN Global Centre http://www.globalasthmanetwork.org/surveillance/register.php. The Registration Document is to be completed by each Principal Investigator and sent to the GAN Global Centre (this can be completed on line via the website, mailed by post, or a hard copy downloaded and completed, scanned and emailed to info@globalasthmanetwork.org). The Registration Document is a signed declaration that the Principal Investigator intends to carry out the study according to the Global Asthma Network protocol; it will identify further details of the study to be undertaken and provide the correct contact details of the Principal Investigator. This will enable the GAN Global Centre to update the database of collaborators and to check country and centre numbers. Investigators are also asked to declare that their centre data can be put on the Global Asthma Network website at the completion of the study and archived for public access in due course.

5.3 Collaborating centres

Collaborating centres are from countries around the world who wish to participate. The Global Asthma Network Steering Group have defined a research centre as: *a distinctive population in terms of its geography, race and/or ethnic characteristics, where Principal Investigators have agreed (by submitting a Registration Document) to follow the Global Asthma Network study protocol described in this Manual*. Centres are particularly sought from regions where standardised prevalence data does not exist. Ideally every country in the world would participate. The Global Asthma Network is particularly interested in urban/rural comparisons within countries[51]. The sample of adolescents and children taking part should not previously have been recruited systematically for research into asthma or allergies (although individual adolescents and children may have been previously involved).

5.4 Investigators

The Registration Document will enable the GAN Global Centre to keep an accurate database of the collaborators for the Global Asthma Network. A Principal Investigator may differ from the person who actively communicates with the GAN Global Centre regarding the methodology and data and if this is the situation, we request that this is clearly communicated to the GAN Global Centre. This information is requested in the Registration Document (http://www.globalasthmanetwork.org/surveillance/register.php).

5.5 Subjects

5.5.1 Selection

The 13/14 year age group (adolescents) is the compulsory component of the Global Asthma Network, however not all the questions need to be included (see page 30 for further details). The video questionnaire for the adolescents is strongly recommended. The study of the 6/7 year age group (children) is strongly recommended. Inclusion of the parent(s)/guardian(s) of both age groups (Adult Questionnaire) about their own health and the environment is also a strongly recommended component. Linking the questionnaires is vital – see page 183

Please read the example Centre Report (page 190) before planning your study. The GAN Global Centre will send you a personalised Centre Report when your centre is registered.

- The population of interest is school children and their parent(s)/guardian(s) within a given geographical area.
- The compulsory requirement is to recruit a sample of 3000 13/14 year old adolescents (If a centre has less than 3000 it must not be less than 1000 per centre unless the centre, for example, is a whole island nation with less than 1000 adolescents). Not all questions need to be included (see page 30 for further details).
- Strongly recommended is inclusion of the 6/7 year age group. We encourage centres to study this age group and if this age group is studied, a sample of at least 3000 children will be selected (If a centre has less than 3000 it must not be less than 1000 per centre unless the centre, for example, is a whole island nation with less than 1000 adolescents). Not all questions need to be included (see page 45).
- Strongly recommended is inclusion of the parents/guardians of the adolescents and children (ADULT questionnaires). Therefore there could be up to 6000 parents for each age group. Not all questions need to be included (see page 64 for further details).
- The sampling unit will be a school for each age group. Each school in the centre that contains the age group of interest will be allocated a number. Some centres will need to use all schools in the sampling frame to obtain the required number of participants. For those that do not need to use all schools, schools should be chosen by random selection. The method used must be documented on the Centre Report.
- Sampling of each age group, if both age groups are studied, will be separate.
- Once a school has been chosen, there are several ways of choosing the students:
    - grade/level/year where the classes with most children in the age group are selected
    - age group where only the children in the age group, regardless of grade/level/year are selected
    - and other methods, which may include elements of the above methods (you will find questions relating to this section in the sample Centre Report on pages 191-193)
- A minimum of 10 schools (or all the schools) per centre will be needed to obtain a representative sample. If a selected school refuses participation, then the school will be replaced by another chosen at random. No eligible children will be excluded from the sample unless documented.
- If a school for disabled children (e.g. blind, intellectually handicapped) is chosen, they will be studied. There may be a disproportionate number of children of the 13/14 year age group who are unable to participate in such a school. This could be a reason for rejecting a school after it had been selected and if so, must be documented.

5.5.2 Sample size and power consideration

The sample size required to detect differences in severity of asthma is higher than that required to detect the same magnitude of differences in prevalence of asthma because severe asthma is less common. The sample size estimates are stringent because of the number of hypotheses being tested and the need to be certain of the results in such a major study. A sample size of 3000 for each age group was chosen for the ISAAC study and this sample size will be used for the Global Asthma Network. This gives the following power:

1. Prevalence of wheezing. If the true one year prevalence of wheezing is 30% in one centre and 25% in another centre, with a sample size of 3000, the study power to detect this difference will be 99% at the 1% level of significance.
2. Severity of wheezing. If the true one year prevalence of severe asthma is 5% in one centre and 3% in another centre with a sample size of 3000 the study power to detect this difference will be 90% at the 1% level of significance.

Table 1a

The yearly increase (decrease) in prevalence of symptoms of asthma and other allergic diseases detectable after 5 years with a power of 80% at the 5% level of significance for 3 initial levels of prevalence and four different sample sizes.

	5%	10%	20%
1000	0.6% (-0.5%)	0.8% (-0.7%)	1.1% (-1.0%)
2000	0.4% (-0.4%)	0.6% (-0.5%)	0.7% (-0.7%)
3000	0.3% (-0.3%)	0.5% (-.04%)	0.6% (-0.6%)
4000	0.3% (-0.3%)	0.4% (-0.4%)	0.5% (-0.5%)

Table 1b

The yearly increase (decrease) in prevalence of symptoms of asthma and other allergic diseases detectable after 5 years with a power of 90% at the 5% level of significance for 3 initial levels of prevalence and four different sample sizes.

	5%	10%	20%
1000	0.8% (-0.6%)	1.0% (-0.8%)	1.2% (-1.1%)
2000	0.5% (-0.4%)	0.7% (-0.6%)	0.9% (-0.8%)
3000	0.4% (-0.3%)	0.5% (-0.5%)	0.6% (-0.6%)
4000	0.3% (-0.3%)	0.5% (-0.4%)	0.6% (-0.6%)

It is recognised that some centres may have limited resources or populations but it is nevertheless desirable for them to be included in the prevalence comparisons. This summary table (Table 2) of sample size and power considerations shows the effect of changing sample size on the power of detecting differences in the prevalence of asthma:

Table 2 Sample Size and Power Considerations

Prevalence of asthma				
POWER (%) (significance level 1%)	Difference being tested			
Sample size	5% v 3%	5.5% v 3%	6% v 3%	6% v 4%
5000	99	>99	>99	98
4000	97	>99	>99	93
3000	90	98	99	82
2000	71	89	97	60
1000	34	53	71	26

As sampling is done by school, while the information is gained from the school pupils, there is likely to be a cluster effect. The sample sizes given above are sufficiently large to allow good power in the presence of moderate intra-cluster correlations[49]. For example, the ISAAC New Zealand studies found the intra cluster correlations for current wheeze and severe wheeze were 0.004 and 0.004 in the 6/7 year olds which corresponds to a design effect (when N=3000) of about 1.2 for severe wheeze. For the 13/14 year olds the same figures were 0.014 and 0.007. The current wheeze design effect was therefore about 1.8 (N=3000).

5.6 Study design

5.6.1 Details of the core modules

The three one page ISAAC core questionnaires will be used[52]. The aim of compiling “core” questionnaires was to ensure that comparable information on the basic epidemiology of asthma, rhinitis and eczema was obtained from as many populations as possible. The ISAAC core questions have now been expanded for the Global Asthma Network so that questions on the management of asthma are included. Additionally the EQ developed and used in ISAAC has been expanded due to the findings from the EQ (see validation of instruments for adolescents, children and adults on page 79).

It is anticipated that individual investigators may wish to supplement the questionnaire with questions of their own, but they should ensure that the form of the questionnaire, including the flow and stemming, is unchanged. Any additional questions should come at the end of the full Global Asthma Network questionnaire. Consideration must be given to the effect extra questions may have on participation rates. If centres use additional questions, the GAN Global Centre info@globalasthmanetwork.org would like a copy of these to archive.

In Sections 7-9 (pages 30-78), the questionnaires are presented. For the 13/14 year olds questions 1-30 on wheezing, rhinitis and eczema are compulsory, and it is strongly recommended that they also complete the video questionnaire. Investigators are also strongly recommended to recruit the 6/7 year olds, whose parents/guardians will be asked to complete the appropriate written questionnaires on wheezing, rhinitis and eczema for their child. The parents/guardians of both the adolescents and children (strongly recommended) will be asked to complete a questionnaire regarding their own health and the environment. The height and weight measurements (strongly recommended) of the adolescents and children will be taken at school and recorded on the questionnaires (see protocol pages 187-189). The following outline summarises this design:

Phase Three Modules	13/14 years	6/7 years
1.1 Questions on symptoms of asthma, rhinitis and eczema, management and the environment	Compulsory	Strongly recommended
1.2 Asthma video questionnaire	Strongly recommended	Not used
1.3 ADULT questionnaire for both age groups parent/guardian completion	Strongly recommended	Strongly recommended

Not all questions in Modules 1.1 & 1.3 (if used) are compulsory – see the questionnaires or page 117 for further details. It is vital that questionnaires are linked by appropriate coding.

5.6.2 Video questionnaire

Global Asthma Network centres will use the international video (AVQ 3.0) developed by the Wellington Asthma Research Group for ISAAC[1-6], which is strongly recommended for the 13/14 year olds (pages 44 and 209). Copies of the video questionnaire and the Global Asthma Network manual are available from the Global Asthma Network website http://www.globalasthmanetwork.org/surveillance/manual/manual.php.

5.6.3 Season of data collection

The date of data collection must be documented on the Centre Report and at least half of the study population should be investigated before the main pollen season of the study area.

5.7 Non-participation

A participation rate of at least 80% for adolescents and 70% for children and adults is expected. Centres that have response rates <70% for adolescents and <60% for children and adults will be excluded as it is a concern that absent children may be away from school due to symptoms of asthma, rhinitis or eczema. Therefore strenuous efforts need to be made to contact these children and their parent(s)/guardian(s) and offer the opportunity of participation in the study. Where consent has been refused, demographic data (age, sex, ethnic group) will be sought, if possible, from the school. For the older age group, the reasons for non-participation of students may be relatively easy to obtain and document. For example, some religious groups are not permitted to view a television, and in some

circumstances, the students may complete the written core questionnaires and then depart from the room when the video is shown and therefore would not participate in this section.

In the case of the younger age group, if the initial questionnaire is not returned within one week, the information letter and questionnaire will be sent again via the school. An envelope (addressed and stamped) attached to the questionnaire may encourage participation. See the fieldworkers guide on pages 117-124 & 183-213.

5.8 Quality control

Particular importance is attached to the quality of the data collection and procedures, to ensure confidence in the results. A Global Asthma Network Centre Report (example pages 190-200), will be sent to every registered centre to complete as the study progresses and returned to the GAN Global Centre at the time of submitting the data to the GAN Global Centre. This will provide a detailed account of the research methodology showing how the Global Asthma Network protocol was implemented locally. Key issues include: the geographical definition of the centre; the method for sampling schools and children; participation rates; data entry; the details regarding the method of translating the core questionnaire into other language(s) and back translation to English, if appropriate and questions regarding the video (for the adolescent group). It is very important that centres contact the GAN Global Centre if they have any difficulties understanding the Centre Report (contact address pages 214-215).

5.9 Presentation and translation

It is important that the questionnaires are prepared in a consistent manner. The order of Yes/No responses has been defined. The layout and printing of the questionnaires will be uniformly printed. The questionnaires for the 13/14 year olds will have the video questionnaire showing on the back (when folded), or they may be presented separately, with adequate identification on each page. If the ADULT questionnaires are used, it is vital that they are linked to the adolescent/children questionnaires by an appropriate coding mechanism. For an example, see page 183.

Translation of questionnaires from English to other languages will be standardised, by translating the English version to the local language and back translating to English by an independent person. See section 18 ‘Guidelines for the Translations of Questionnaires’ on page 124 and coding of language used on the questionnaires on page 186. It is important that these procedures are followed.

6. Data Handling and Analysis

Detailed instructions about coding and data transfer are found in Section 19 pages 125-182.

6.1 Data quality and handling

6.1.1 Demographic data

Demographic data is the requested personal information for each individual participant. Ideally these questions should be well laid out, easy to complete and on the first page of the questionnaire (example pages 31 & 185). The questions ask for participants name, age, date of birth, school, gender of participant, the date of completing the questionnaire and optional questions on ethnicity. Similar questions are asked on the ADULT questionnaire. 'Office Use Only' boxes at the top of the first page allow the person conducting the survey to keep an account of the unique identification number for the participant and school as well as the number of times the questionnaire has been sent out. Further information is available in the field workers guide on page 117-124 & 183-213. It is advisable to pre-code the questionnaires for each age group before printing and to pre-code the language of the questionnaire to enable an exact account to be kept of numbers of translated questionnaires. A list of coding numbers for translations can be found on page 186. If your language is not listed, please contact the GAN Global Centre (contact address page 214). Also refer page 183 for an example of coding for 'Office Use Only' boxes.

Where comparisons between ethnic groups are planned, each individual centre should follow the question on ethnicity used in the most recent Census of Populations for that centre/country.

The completed questionnaire should be carefully checked if possible at the time of conducting the survey (for the older age group) or as soon as possible after collecting the questionnaires from the school. Any obvious errors with the demographic data should be corrected by obtaining the information from the schools. Any changes made to the demographic data must be well documented, dated and signed by the person making the changes (see example page 213).

6.1.2 Core questionnaires

The data for asthma, rhinitis and eczema must be entered on to the computer exactly as it is presented in the questionnaire and **must not be changed under any circumstances, even if the information is inconsistent except if questionnaires are scanned**. If for some unique reason a questionnaire is altered, a copy of the data should be made before the changes and a record kept as to the reason why this change was made. It is vital that the original data is available to the GAN Global Centre. The questionnaire must **not** be altered for consistency between the stem and following questions. If some questions are left blank on a particular questionnaire, it will be at the discretion of the GAN Global Centre as to whether that questionnaire is excluded. The Coding and Data Transfer Section page 125 gives instructions on data handling, data entry and submission to the GAN Global Centre.

6.1.3 Data entry

Each centre is responsible for coding its own data and data entry, although in some regions/countries, one centre may take responsibility for this. It is an expectation that **at least 10% of the Data will be double entered.** This will allow researchers to gauge the number of mistakes being made with data entry. Double entry is a common method of data entry that minimises data entry errors and is the expected method of data entry for the Global Asthma Network. The data is entered two times, preferably by two different people. The two versions of the data set are compared and any differences checked against the original questionnaire. Dedicated data entry software such as SPSS (Statistical Package for the Social Sciences) will allow the comparison between the first and second entry to occur as the second entry is made. Any inconsistencies can be resolved at that time based on the original questionnaire. If there are too many mistakes in the double entered sample, the full data set should be double entered. If alternative methods are planned, these should be discussed in advance with the GAN Global Centre.

Epi-Info is a free epidemiological software package distributed by the Centers for Disease Control and Prevention, and may be downloaded from http://www.cdc.gov/epiinfo/. Since 2000, though, the **Epi-Info package has not included the capability for immediate comparison of double entered data**. However, it does include a number of useful statistical functions.

Some centres may wish to use questionnaire scanning software such as OMR (Optical Mark Recognition) for data entry. This is acceptable but if so procedures to deal with data entry errors must be documented and sent to the GAN Global Centre. The scanning software should also scan and keep an image of the questionnaire so that it can be checked when an error appears and manually corrected if necessary. The questionnaires may need specific preparations to be suitable for being read by a scanner. Copies of the paper questionnaire used must be provided to the GAN Global Centre. The name of the software and its manufacturer, and documentation describing the software should be sent to the GAN Global Centre, and/or a website address for the documentation. The software should have the ability to export the data set as a .CSV file.

The minimum requirements for questionnaire scanning software are:

- A questionnaire layout which facilitates the scanning procedure: e.g. a large margin separating the text from the marking boxes
- High quality BLACK printing of questionnaires, to avoid movements of the text, even half a millimetre.
- A software package which detects any marking errors and allows for comparisons with the scanned questionnaire (as if it were the real paper) and manual error correction.

The questionnaires must be kept for a minimum period according to local Ethics Committee requirements to allow cross checking against the computer record, if this should be necessary.

Data is to be sent to the GAN Global Centre as detailed in the data and coding transfer section pages 125-182 and collaborators will be sent an acknowledgement of receipt of data. Please check this occurs, because email can occasionally be missed. The GAN Global Centre will then forward the data onto the appropriate Data Centre and a report will be generated. This report will provide a summary of the data checks and will identify areas where a response is requested from the collaborating centre. This data checking process must be completed before centre data will be included in the analysis for publications of the

Global Asthma Network. Centre data will be entered onto a PC with the necessary statistical analysis capabilities and a copy of the data will be kept off site in a protected environment.

6.1.4 Satisfactory data set

To be included in the Global Asthma Network publications, centres must provide a complete data set and Centre Report to the GAN Global Centre. The data and the Centre Report will then undergo a checking process by the GAN Global Centre in conjunction with each centre and the data centres. A satisfactory data set is one that has complied with the data and methodology checks to the required standard of the Global Asthma Network Steering Group.

6.2 Analysis

The data analysis will be undertaken at either London, UK, or Murcia, Spain (see pages 125 and 215 for further details). Each group of participants will be treated separately: 13/14 year olds, 6/7 year olds, and the Adults. Each parameter of prevalence and severity will be compared between locations. The cluster effect is not expected to be great, but will be adjusted for in the analysis.

The primary aim is to obtain internationally comparable estimates of the direction and magnitude of change in prevalence of symptoms of asthma, rhinoconjunctivitis and eczema as well as new data on asthma management and the environment.

- provide estimates of the direction and magnitude of the prevalence of symptoms of asthma and other allergies
- allow ecological studies of these trends
- allow associations with risk and protective factors

Comparisons of prevalence rates between different centres will be made using appropriate statistical methods. Crude rates can be compared by using contingency tables or logistic regression. For both prevalence analysis and management questions analysis, comparisons of standardised rates or data that needs controlling for confounding will involve multivariate logistic regression.

6.3 Ownership of data

Each centre owns their data. The collaborating centres will be recognised by the group title “Global Asthma Network Study Group”. All publications and communications involving international comparisons will have a named writing group “and the Global Asthma Network Study Group”. All Principal Investigators whose data is included in any publication will be listed and acknowledged in the appendix of publications of the worldwide data.

Each centre may publish its own data without the approval of the Global Asthma Network. However, the GAN Global Centre should receive a copy of any independent publications to archive and to publish on the Global Asthma Network website. All publications and communications arising from comparisons of more than five centres in different countries require the approval and authorisation of the Global Asthma Network Steering Group.

7. Study Instruments for 13/14 Year Olds

7.1 Instructions for preparing the questionnaire

The following instructions are to be undertaken BEFORE the questionnaire is printed including pre-coding the office use only boxes (see page 183). Questions 1-30 are fixed. Questions 31-48 are strongly recommended. Centres may wish to shorten the questionnaire. Please see pages 117-124 & 183-213 before printing your questionnaires.

Question 9. After e.g. Please delete the words "puffers (*use local terminology*)" and insert your local terminology for inhalers, prior to printing the questionnaire.

Question 9a. Please insert the name of your local brand of SABAs, LABAs, ICSs and combination ICS and LABA prior to printing the questionnaire.

Question 10. After e.g. Please delete the words "pills (*use local terminology*)" and insert your local terminology for tablets, capsules, liquids or pills, prior to printing the questionnaire

Question 10a. We are only interested in 4 categories of medicines: leukotriene receptor antagonists, β2 agonist bronchodilator, theophylline and oral corticosteroid. Please delete the words (*Put your local brand name here*) and insert the chemical name, and then in brackets the brand/local name of the tablets, capsules, liquids or other medicines e.g. pills (using your local terminology), prior to printing the questionnaire.

Question 37. "Were you born in (***country of survey***)? Please delete the words (***country of survey)*** and insert the name of your country, prior to printing the questionnaire.

Question 38. Please delete the words (***country of survey)*** and insert the name of your country, prior to printing the questionnaire.

Question 39. "How often do trucks pass through the street where you live on weekdays?" The word 'truck' can be changed to an alternative local term, for example 'lorry', prior to printing the questionnaire.

Question 40. "In the past 12 months how often, on average, did you eat or drink the following?"

If there are foods listed that are not applicable to your country you may delete them. Similarly, if you consider the list too comprehensive, you may delete some of the foods. For MEAT, we include examples that would be applicable for New Zealand. Other countries may like to delete our examples and include relevant examples for their country, prior to printing the questionnaire.

Question 41. "**In the past 12 months** how often, on average, have you taken paracetamol for fever?" Please delete the words "*(use local terminology e.g. Acetaminophen, Panadol, Pamol, Tylenol*) and insert your local brand name, prior to printing the questionnaire.

Question 48. There are various terms used to describe a water pipe. Please use the terminology most suitable for your country, prior to printing the questionnaire.

NOTE:

Height and weight measurements (strongly recommended): These measurements will be taken at school by the fieldworker preferably after the written and video questionnaires have been completed and it will be noted on the questionnaire which measurement was used. Please see pages 187-189 for the height and weight protocol. This will give the fieldworker the opportunity to check the demographic data has been completed correctly.

7.2 Instructions for completing the demographic questions

Surveillance and management questionnaire for 13/14 year olds

Examples of Instructions for completing the questions are given below.

The questions require you to tick your answer in a box, write a number or a few words as indicated. If you make a mistake put a cross in the box and tick the correct answer. Tick only one option unless otherwise instructed.

Examples of how to mark questionnaires: Age [13] years

To answer Yes/No, put a tick in the appropriate box as per example	YES	NO
		4

SCHOOL: [ ]

TODAY'S DATE: [ ] [ ] [ ]
Day Month Year

YOUR NAME: [ ]

YOUR AGE: [ ]
years

YOUR DATE OF BIRTH: [ ] [ ] [ ]
Day Month Year

Are you: MALE [ ] FEMALE [ ]

Optional questions on ethnicity here:

[ ]

Your weight will be measured at school _____
kg/stone/pounds

Your height will be measured at school _____
metres/centimetres/feet and inches

Questions 1 – 16 are about your breathing

1. Have you **ever** had wheezing or whistling in the chest at any time in the past?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 6

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2. Have you had wheezing or whistling in the chest **in the past 12 months**?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 6

---

3. How many attacks of wheezing have you had **in the past 12 months**?

None ☐

1 to 3 ☐

4 to 12 ☐

More than 12 ☐

4. **In the past 12 months**, how often, on average, has your sleep been disturbed due to wheezing?

Never woken with wheezing ☐

Less than one night per week ☐

One or more nights per week ☐

5. **In the past 12 months**, has wheezing ever been severe enough to limit your speech to only one or two words at a time between breaths?

Yes ☐

No ☐

---

6. Have you **ever** had asthma?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 9

---

7. Was asthma confirmed by a doctor?

Yes ☐

No ☐

8. Do you have a written plan which tells you how to look after your asthma?

Yes ☐

No ☐

---

9. Have you used any inhaled medicines e.g. puffers (*use local terminology*) to help your breathing problems at any time **in the past 12 months**? (when you didn't have a cold)

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 10

9a. Please indicate how often you used each of the **inhaled** medicines listed below **in the past 12 months**:

(delete the words below and put your local brand)	only when needed	/ in short courses	/ every day
Short acting β- agonists (SABA)	☐	☐	☐
Long acting β- agonists (LABA)	☐	☐	☐
Inhaled corticosteroids (ICS)	☐	☐	☐
Combination ICS and LABA	☐	☐	☐

10. Have you used any tablets, capsules, liquids or other medicines e.g. pills (*use local terminology*) that you swallowed to help your breathing at any time **in the past 12 months**? (when you didn't have a cold)

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 11

10a. Please indicate how often you used each of the tablets, capsules, liquids or other medicines e.g. pills (*use local terminology*) listed below **in the past 12 months**:

	only when needed	/ in short courses	/ every day
(Put your local brand name here)	☐	☐	☐
(Put your local brand name here)	☐	☐	☐
(Put your local brand name here)	☐	☐	☐
(Put your local brand name here)	☐	☐	☐

11. **In the past 12 months**, how many times have you **urgently** been to a doctor because of breathing problems?

None	1-3	4-12	more than 12
☐	☐	☐	☐

12. **In the past 12 months**, how many times have you **urgently** been to an Emergency Department without being admitted to hospital because of breathing problems?

None	1-3	4-12	more than 12
☐	☐	☐	☐

13. **In the past 12 months** how many times have you been admitted to hospital because of breathing problems?

None	1	2	more than 2
☐	☐	☐	☐

14. **In the past 12 months,** how many days (or part days) of school have you missed because of breathing problems?

None	1-3	4-12	more than 12
☐	☐	☐	☐

15. **In the past 12 months**, has your chest sounded wheezy during or after exercise?

Yes ☐

No ☐

16. **In the past 12 months**, have you had a dry cough at night, apart from a cough associated with a cold or chest infection?

Yes ☐

No ☐

Questions 17-23 are about *nose problems* which occur when you *do not have a cold or the flu*

17. Have you **ever** had a problem with sneezing, or a runny, or blocked nose when you DID NOT have a cold or the flu?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 22

---

18. **In the past 12 months**, have you had a problem with sneezing, or a runny or blocked nose when you DID NOT have a cold or the flu?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 22

---

19. **In the past 12 months**, has this nose problem been accompanied by an itchy nose?

Yes ☐

No ☐

20. **In the past 12 months**, has this nose problem been accompanied by itchy-watery eyes?

Yes ☐

No ☐

21. **In the past 12 months**, how much did this nose problem interfere with your daily activities?

Not at all ☐
A little ☐
A moderate amount ☐
A lot ☐

---

22. Have you **ever** had hay fever? *(include local names for hay fever such as allergic rhinitis)*

Yes ☐
No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 24

---

23. Was your hay fever confirmed by a doctor?

Yes ☐
No ☐

Questions 24 – 30 are questions about your skin

24. Have you **ever** had an itchy rash which was coming and going for at least six months?

Yes ☐
No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 29

---

25. Have you had this itchy rash at any time **in the past 12 months**?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 29

---

26. Has this itchy rash **at any time** affected any of the following places: the folds of the elbows, behind the knees, in front of the ankles, under the buttocks, or around the neck, ears or eyes?

Yes ☐

No ☐

27. Has this rash cleared completely at any time **during the past 12 months**?

Yes ☐

No ☐

28. **In the past 12 months**, how often, on average, have you been kept awake at night by this itchy rash?

Never in the past 12 months ☐

Less than one night per week ☐

One or more nights per week ☐

---

29. Have you **ever** had eczema?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 31

---

30. Was your eczema confirmed by a doctor?

Yes ☐

No ☐

Questions 31 to 48 are about other aspects of your life and environment

31. How many times a week do you engage in vigorous physical activity long enough to make you breathe hard?

Never or only occasionally ☐

Once or twice per week ☐

Three or more times a week ☐

32. During a normal week of 7 days, how many hours a day (24 hours) do you watch television (include DVD's films, videos)?

Less than 1 hour ☐

1 hour but less than 3 hours ☐

3 hours but less than 5 hours ☐

5 hours or more ☐

33. During a normal week of 7 days, how many hours a day (24 hours) do you spend on any of the following: computer (include PlayStation, smartphone, tablet); the internet (include Chat, Facebook, games, Twitter, YouTube) and more?

Less than 1 hour ☐

1 hour but less than 3 hours ☐

3 hours but less than 5 hours ☐

5 hours or more ☐

34. Are you a twin? Yes ☐

No ☐

35. How many older brothers and/or sisters do you have?

Number ☐

(please put 0 if there are no older siblings)

36. How many younger brothers and/or sisters do you have?

Number ☐

(please put 0 if there are no younger siblings)

37. Were you born in **_____(*country of survey*)_____**? Yes ☐

No ☐

37a. ***If No***, what country were you born in? Country_____

38. How many years have you lived in **__(*country of survey*)__**?

Years ☐

39. How often do trucks pass through the street where you live on weekdays?

Never ☐

Seldom (not often) ☐

Frequently through the day ☐

Almost the whole day ☐

40. **<u>In the past 12 months</u>**, how often, on average, did you eat or drink the following? (*please leave blank if you do not know what a food is*)

	Never or only occasionally	Once or twice per week	Most or all days
Meat (eg beef, lamb, chicken, pork)	☐	☐	☐
Seafood (including fish)	☐	☐	☐
Fruit	☐	☐	☐
Cooked Vegetables (green and root)	☐	☐	☐
Raw Vegetables (green and root)	☐	☐	☐
Pulses (peas, beans, lentils)	☐	☐	☐
Cereals (excluding bread)	☐	☐	☐
Bread	☐	☐	☐
Pasta	☐	☐	☐
Rice	☐	☐	☐
Margarine	☐	☐	☐
Butter	☐	☐	☐
Olive Oil	☐	☐	☐
Milk (include flavoured milk)	☐	☐	☐
Other dairy (include cheese and yoghurt)	☐	☐	☐
Eggs	☐	☐	☐
Nuts	☐	☐	☐
Potatoes	☐	☐	☐
Sugar (includes lollies, candies, sweets)	☐	☐	☐
Fastfood/burgers	☐	☐	☐
Fast food, excluding burgers	☐	☐	☐
Fizzy or soft drinks (include local terminology)	☐	☐	☐

41. **In the past 12 months** how often, on average, have you taken paracetamol (*use local terminology e.g. Acetaminophen, Panadol, Pamol, Tylenol)* for fever?

Never ☐

At least once a year ☐

At least once a month ☐

42. **In the past 12 months**, have you had a cat in your home?

Yes ☐

No ☐

43. **In the past 12 months**, have you had a dog in your home?

Yes ☐

No ☐

44. **In the past**, have you smoked tobacco on a daily basis, less than daily, or not at all?

Not at all ☐

Less than daily ☐

Daily ☐

45. Do you **currently** smoke tobacco on a daily basis, less than daily, or not at all?

Not at all ☐

Less than daily ☐

Daily ☐

46. If you have smoked tobacco ever, either daily or less than daily, at what age did you first smoke cigarettes, cigars, or pipe?

Age ☐ Not applicable ☐

47. On average over the entire time you have smoked, how many cigarettes, cigars, or pipe did you smoke each day?

Number per day ☐ Not applicable ☐

48. Do you smoke water pipe (*use local terminology e.g. bong, crack pipe, hookah, hubble-bubble, narghile, shisha, vapourizer, water vapour*) at home?

Yes ☐

No ☐

Thank you very much for completing these questions, we appreciate your participation.

International Video Questionnaire answer sheet

If the video questionnaire is included with the questionnaire, the demographic details will have been put onto the front of the questionnaire. If the video questionnaire is administered separately, the demographic questions will need to be added to this section.

SCENE ONE: The first scene is of a young person at rest.

49.	Has your breathing been like this,	**YES**	**NO**
	at any time in your life?	☐	☐
	if **YES:** has this happened in the past year?	☐	☐
	if **YES:** has this happened one or more times a month?	☐	☐

SCENE TWO: The second scene is of two young people exercising. One is in a dark shirt and the other is in a white shirt.

50.	Has your breathing been like the boy's in the dark shirt during or following exercise	**YES**	**NO**
	at any time in your life?	☐	☐
	if **YES:** has this happened in the past year?	☐	☐
	if **YES:** has this happened one or more times a month?	☐	☐

SCENE THREE: The third scene is of a young person waking at night.

51.	Have you been woken at night like this at	**YES**	**NO**
	any time in your life?	☐	☐
	if **YES:** has this happened in the past year?	☐	☐
	if **YES:** has this happened one or more times a month?	☐	☐

SCENE FOUR: The fourth scene is also of a young person waking at night.

52. Have you been woken at night like this at		**YES**	**NO**
	any time in your life?	☐	☐
	if **YES:** has this happened in the past year?	☐	☐
	if **YES:** has this happened one or more times a month?	☐	☐

SCENE FIVE: The final scene is of another person at rest.

53.	Has your breathing been like this at any time in your life?	**YES**	**NO**
	if **YES:** has this happened in the past year?	☐	☐
	if **YES:** has this happened one or more times a month?	☐	☐

Thank you very much for completing these questions, we appreciate your participation.

8.0 Study Instruments for 6/7 Year Olds

(Parent/Caregiver Completion)

8.1 Instructions for preparing the questionnaire

The following instructions are to be undertaken BEFORE the questionnaire is printed including pre-coding the office use only boxes (see page 183). Questions 1-33 are fixed. Questions 34-68 are strongly recommended. Centres may wish to shorten the questionnaire. Please see pages 117-124 & 183-213 before printing your questionnaires.

Question 10. After e.g. Please delete the words "puffers (*use local terminology*)" and insert your local terminology for inhalers, prior to printing the questionnaire.

Question 10a. Please insert the name of your local brand of SABAs, LABAs, ICSs and combination ICS and LABA prior to printing the questionnaire.

Question 11. After e.g. Please delete the words "pills (*use local terminology*)" and insert your local terminology for tablets, capsules, liquids or pills, prior to printing the questionnaire

Question 11a. We are only interested in 4 categories of medicines: leukotriene receptor antagonists, β2 agonist bronchodilator, theophylline and oral corticosteroid. Please delete the words (*Put your local brand name here*) and insert the chemical name, and then in brackets the brand/local name of the tablets, capsules, liquids or other medicines e.g. pills (using your local terminology), prior to printing the questionnaire.

Question 42. "**In the first 12 months** of this child's life did you usually give paracetamol for fever?" Please delete the words "*(use local terminology e.g. Acetaminophen, Panadol, Pamol, Tylenol*) and insert your local brand name, prior to printing the questionnaire.

Question 50a. Please insert the name of your local brand of inhaled SABAs and ICSs and oral SABAs, corticosteroids and other listed medicines prior to printing the questionnaire.

Question 60. "Was this child born in (***country of survey***)? Please delete the words (***country of survey)*** and insert the name of your country, prior to printing the questionnaire.

Question 61. Please delete the words (***country of survey)*** and insert the name of your country, prior to printing the questionnaire.

Question 64. "How often do trucks pass through the street where you live on weekdays?" The word 'truck' can be changed to an alternative local term, for example 'lorry', prior to printing the questionnaire.

Question 65. "In the past 12 months how often, on average, did **this child** eat or drink the following?". If there are foods listed that are not applicable to your country you may delete them. Similarly, if you consider the list too comprehensive, you may delete some of the foods. For MEAT, we include examples that would be applicable for New Zealand. Other countries may like to delete our examples and include relevant examples for their country, prior to printing the questionnaire.

Question 68. **"In the past 12 months** how often, on average, have you given **this child** paracetamol for fever?" Please delete the words "*(use local terminology e.g. Acetaminophen, Panadol, Pamol, Tylenol*) and insert your local brand name, prior to printing the questionnaire.

NOTE: Height and weight measurements (strongly recommended): These measurements will be taken at school by the fieldworker after the questionnaire has been completed by the parent/guardian and returned to school and it will be noted on the questionnaire which measurement was used. Please see pages 187-189 for the height and weight protocol.

8.2 Instructions for completing the demographic questions

Surveillance and management questionnaire for 6/7 year olds

(Parent/Guardian Completion)

Examples of Instructions for completing the questions are given below.

On this first page are questions about your child's name, school, and birth dates. Please write your answers to these questions in the space provided. When your answers have been verified against the school records, a unique number is given to this questionnaire and all answers become anonymous.

Other questions require you to tick your answer in a box, write a number, or a few words as indicated. If you make a mistake put a cross in the box and tick the correct answer. Tick only one option unless otherwise instructed.

Examples of how to mark questionnaires: Age [6] years

To answer Yes/No, put a tick in the appropriate box as per example	YES	NO
	[ ]	[4]

SCHOOL: [ ]

TODAY'S DATE: [ ] Day [ ] Month [ ] Year

CHILD'S NAME: [ ]

CHILD'S AGE: [ ] years

CHILD'S DATE OF BIRTH: [ ] Day [ ] Month [ ] Year

Is this child a: MALE [ ] FEMALE [ ]

Optional questions on ethnicity here:

[ ]

This child's weight will be measured at school _____ kg/stone/pound

This child's height will be measured at school _____ metres/centimetres/feet and inches

Questions 1-17 are about this [your] child's breathing (the child named on this questionnaire)

1. Has this child ever had wheezing or whistling in the chest **<u>at any time</u>** in the past?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 7

---

2. *IF YOU ANSWERED "**YES**"* – How old was this child when the wheezing or whistling started?

Less than 1 year	1-2	3-4	5-6	More than 6 years
☐	☐	☐	☐	☐

3. Has this child had wheezing or whistling in the chest **<u>in the past 12 months?</u>**

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 7

---

4. How many attacks of wheezing has this child had **<u>in the past 12 months?</u>**

None ☐

1 to 3 ☐

4 to 12 ☐

More than 12 ☐

5. **<u>In the past 12 months</u>,** how often, on average, has this child's sleep been disturbed due to wheezing?

Never woken with wheezing ☐

Less than one night per week ☐

One or more nights per week ☐

6. **<u>In the past 12 months</u>,** has wheezing ever been severe enough to limit this child's speech to only one or two words at a time between breaths?

Yes ☐

No ☐

---

7. Has this child **<u>ever</u>** had asthma?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO"
PLEASE SKIP TO QUESTION 16

---

8. Was this child's asthma confirmed by a doctor?

Yes ☐

No ☐

9. Does this child have a written plan which tells you/him/her how to look after his/her asthma?

Yes ☐

No ☐

---

10. Has this child used any inhaled medicines e.g. puffers (*use local terminology*) to help his/her breathing problems at any time **in the past 12 months?** (when he/she did not have a cold)

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 11

10a. Please indicate how often this child used each of the **inhaled** medicines listed below **in the past 12 months**:

(delete the words below and put your local brand)	only when needed	in short courses	every day
Short acting β- agonists (SABA)	☐	☐	☐
Long acting β- agonists (LABA)	☐	☐	☐
Inhaled corticosteroids (ICS)	☐	☐	☐
Combination ICS and LABA	☐	☐	☐

11. Has this child used any tablets, capsules, liquids or other medicines e.g. pills (*use local terminology*) that he/she swallowed to help his/her breathing at any time **in the past 12 months**? (when he/she did not have a cold)

Yes ☐

No ☐

***IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 12*:**

11a. Please indicate how often this child used each of the tablets, capsules, liquids or other medicines e.g. pills (*use local terminology*) listed below **in the past 12 months**:

	only when needed	in short courses	every day
(Put your local brand name here)	☐	☐	☐
(Put your local brand name here)	☐	☐	☐
(Put your local brand name here)	☐	☐	☐
(Put your local brand name here)	☐	☐	☐

12. **<u>In the past 12 months</u>**, how many times have you **urgently** taken this child to a doctor because of his/her breathing problems?

None	1-3	4-12	more than 12
☐	☐	☐	☐

13. **<u>In the past 12 months</u>**, how many times have you **urgently** taken this child to an Emergency Department, without being admitted to hospital, because of his/her breathing problems?

None	1-3	4-12	more than 12
☐	☐	☐	☐

14. **<u>In the past 12 months</u>** how many times has this child been admitted to hospital because of his/her breathing problems.

None	1	2	more than 2
☐	☐	☐	☐

15. **<u>In the past 12 months</u>,** how many days (or part days) of school has this child missed because of his/her breathing problems?

None	1-3	4-12	more than 12
☐	☐	☐	☐

16. **<u>In the past 12 months</u>,** has this child's chest sounded wheezy during or after exercise?

Yes ☐

No ☐

17. **<u>In the past 12 months</u>,** has this child had a dry cough at night, apart from a cough associated with a cold or chest infection?

Yes ☐

No ☐

Questions 18-25 are about *nose problems* which occurred when this child *did not have a cold or the flu*

18. Has this child **ever** had a problem with sneezing, or a runny or blocked nose when he/she DID NOT have a cold or the flu?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 24

---

19. *IF YOU ANSWERED "**YES**"* - How old was this child when the nose problem started?

Less than 1 year	1-2	3-4	5-6	More than 6 years
☐	☐	☐	☐	☐

20. **In the past 12 months,** has this child had a problem with sneezing, or a runny, or blocked nose when he/she DID NOT have a cold or the flu?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 24

---

21. **In the past 12 months**, has this child's nose problem been accompanied by an itchy nose?

Yes ☐

No ☐

22. **In the past 12 months,** has this child's nose problem been accompanied by itchy-watery eyes?

Yes ☐

No ☐

23. **<u>In the past 12 months</u>,** how much did this child's nose problem interfere with his/her daily activities?:

Not at all ☐
A little ☐
A moderate amount ☐
A lot ☐

---

24. Has this child **<u>ever</u>** had hay fever? *(include local names for hay fever such as allergic rhinitis)*

Yes ☐
No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 26

---

25. Was this child's hay fever confirmed by a doctor?

Yes ☐
No ☐

Questions 26 – 33 are about this child's skin

26. Has this child **<u>ever</u>** had an itchy rash which was coming and going for at least six months?

Yes ☐
No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 32

---

27. Has this child had this itchy rash at any time **in the past 12 months?**

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 32

---

28. Has this child's itchy rash **at any time** affected any of the following places: the folds of the elbows, behind the knees, in front of the ankles, under the buttocks, or around the neck, ears or eyes?

Yes ☐

No ☐

29. At what age did this child's itchy rash first occur?

Under 2 years ☐

Age 2-4 years ☐

Age 5 or more ☐

30. Has this child's rash cleared completely at any time **during the past 12 months**?

Yes ☐

No ☐

31. **In the past 12 months**, how often, on average, has this child been kept awake at night by this itchy rash?

Never in the past 12 months ☐

Less than one night per week ☐

One or more nights per week ☐

32. Has this child **ever** had eczema?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO"
PLEASE SKIP TO QUESTION 34

---

33. Was this child's eczema confirmed by a doctor?

Yes ☐

No ☐

Questions 34 to 39 are on pregnancy and birth

34. How often, on average, did this child's Mother take paracetamol in the **pregnancy** that she had with this child?

Never ☐

At least once in pregnancy ☐

At least once a month ☐

More often ☐

Don't know ☐

35. Did this child's mother have regular (**at least once a week**) contact with farm animals (e.g. cattle, pigs, goats, sheep or poultry; *use local terminology*) while being pregnant with this child?

Yes ☐

No ☐

36. Did this child's Mother smoke during her pregnancy with this child?

Yes ☐

No ☐

37. Was there carpet in the house while this child's Mother was pregnant with this child? (tick as many as are applicable)

No carpet in the house	Mother's bedroom	Living room	Other room/s
☐	☐	☐	☐

38. Was this child born prematurely (more than 3 weeks before he/she was expected)?

Yes ☐

No ☐

39. What was the weight of this child when he/she was born?

_____kg/stone/pounds

(Please circle the measurement you used)

Questions 40 to 50a are about this child's first 12 months of life

40. Was this child **ever** breastfed? Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO"
PLEASE SKIP TO QUESTION 41

40a. For how long was this child breastfed?

less than 6 months ☐

6-12 months ☐

More than 12 months ☐

40b**.** For how long was this child breastfed without adding other foods or liquids?

Less than 2 months	☐
2-4 months	☐
5-6 months	☐
More than 6 months	☐

41. In this child's **<u>first 12 months of life</u>** what kind of milk did this child drink **<u>most</u>** often?

(In each column please make only one mark)

	1-6 months	7 – 12 months
Breast milk	☐	☐
Infant formula	☐	☐
Homogenised or full cream pasteurised milk from the shop	☐	☐
Low fat or skimmed pasteurised milk from the shop	☐	☐
Long life milk (UHT)	☐	☐
Boiled milk, fresh from the farm	☐	☐
Unboiled milk, fresh from the farm	☐	☐
Soy milk, goats milk	☐	☐
None of the above	☐	☐
Don't know	☐	☐

42**.** **<u>In the first 12 months</u>** of this child's life, did you usually give paracetamol *(use local terminology e.g. Acetaminophen, Panadol, Tylenol)* for fever?

Yes	☐
No	☐

43. How many chest infections did this child have **<u>in his/her first year of life?</u>**

None	☐
1	☐
2-5	☐
6 or more	☐

44. **In the first 12 months of life**, did this child have any antibiotics?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 45

44a. How many courses of antibiotics did this child have?

1 ☐

2-5 ☐

6 or more ☐

44b. Were any antibiotics taken to treat chest infections?

Yes ☐

No ☐

45. Did this child lie on a sheepskin as an infant?

Yes ☐

No ☐

46. Did you have a cat in your home during **the first year of this child's life?**

Yes ☐

No ☐

47. Did you have a dog in your home during **the first year of this child's life?**

Yes ☐

No ☐

48. In this **child's first year of life** did this child have regular (at least once a week) contact with farm animals? (e.g. cows, cattle, pigs, goats, sheep or poultry; *use local terminology*)

Yes ☐

No ☐

49. Did this child suffer from wheezing or whistling in the chest **during his/her first year of life?**

Yes ☐

No ☐

50. Was this child treated with **inhaled and/or oral** medicines to help his/her breathing **during his/her first year of life?** (when he/she did not have a cold)

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 51.

50a. Please indicate how often this child used each of the **inhaled and/or oral** medicines listed below **during his/her first year of life**:

(delete the words below and put your local brand)	only when needed	in short courses	every day
Inhaled:			
Short acting β- agonists (SABA)	☐	☐	☐
Inhaled corticosteroids (ICS)	☐	☐	☐
(delete the words below and put your local brand)			
Oral			
Short acting β- agonists (SABA)	☐	☐	☐
Oral corticosteroids	☐	☐	☐
Theophylline	☐	☐	☐
Montelukast	☐	☐	☐
Antibiotics	☐	☐	☐

Questions 51 to 64 are about other aspects of this child's life and environment

51. Did this child ever go to out of home care (such as a child care facility or nursery school) when he/she was younger than 3 years of age? *(use local terminology)*

Yes ☐

No ☐

51a. ***If yes,*** from what age Years ☐ Months ☐

52. Did this child ever go to out of home care (such as a kindergarten/playcentre, preschool) when he/she was older than three years of age? (*use local terminology*)

Yes ☐

No ☐

52a. ***If yes,*** from what age Years ☐ Months ☐

53. How many times a week does this child engage in vigorous physical activity long enough to make him/her breathe hard?

Never or only occasionally ☐

Once or twice per week ☐

Three or more times a week ☐

54. During a normal week of 7 days, how many hours a day (24 hours) does this child watch television (including DVD's films, videos)?

Less than 1 hour ☐

1 hour but less than 3 hours ☐

3 hours but less than 5 hours ☐

5 hours or more ☐

55. During a normal week of 7 days, how many hours a day (24 hours) does this child spend on the computer (including PlayStation, smartphone tablet), or on the internet (include Chat, Facebook, games, Twitter, YouTube)?

Less than 1 hour ☐
1 hour but less than 3 hours ☐
3 hours but less than 5 hours ☐
5 hours or more ☐

56. Has this child ***ever*** been diagnosed with pneumonia or bronchopneumonia?

Yes ☐
No ☐

57. Is this child a twin?

Yes ☐
No ☐

58. How many older brothers and/or sisters does this child have?

Number ☐

(please put 0 if there are no older siblings)

59. How many younger brothers and/or sisters does this child have?

Number ☐

(please put 0 if there are no younger siblings)

60. Was this child born in ***(Country of Survey)***?

Yes ☐
No ☐

60a. ***If NO***, what country was this child born in?

Country_____

61. How many years has **this child** lived in **_____*(Country of survey)*_____**?

Years ☐

62. What kind of floor covering is or was there in **this child's bedroom** at the following times ***(tick as many as are applicable)***

	Never	At this time	During the first year of this child	At some other time
Wall to wall carpet	☐	☐	☐	☐
Smooth floor (vinyl/linoleum, tiles, wood, concrete, etc.,) **without** a rug	☐	☐	☐	☐
Smooth floor (vinyl/linoleum, tiles, wood, concrete, etc.,) **with** a rug	☐	☐	☐	☐
No covering – soil or dirt	☐	☐	☐	☐

63. Have you made any changes in your home to prevent the symptoms of allergies or asthma, or breathing problems in **this child**?

Yes ☐

No ☐

Not applicable ☐

64. How often do trucks pass through the street where you live on weekdays?

Never ☐

Seldom (not often) ☐

Frequently through the day ☐

Almost the whole day ☐

Questions 65 to 68 are about the past 12 months of this child's life

65. **In the past 12 months**, how often, on average, did **this child** eat or drink the following? (please leave blank if you do not know what a food is)

	Never or only occasionally	Once or twice per week	Most or all days
Meat (eg beef, lamb, chicken, pork)	☐	☐	☐
Seafood (including fish)	☐	☐	☐
Fruit	☐	☐	☐
Cooked Vegetables (green and root)	☐	☐	☐
Raw Vegetables (green and root)	☐	☐	☐
Pulses (peas, beans, lentils)	☐	☐	☐
Cereals (excluding bread)	☐	☐	☐
Bread	☐	☐	☐
Pasta	☐	☐	☐
Rice	☐	☐	☐
Margarine	☐	☐	☐
Butter	☐	☐	☐
Olive Oil	☐	☐	☐
Milk (including flavoured milk)	☐	☐	☐
Other dairy (including cheese and yoghurt)	☐	☐	☐
Eggs	☐	☐	☐
Nuts	☐	☐	☐
Potatoes	☐	☐	☐
Sugar (include lollies/candies/sweets)	☐	☐	☐
Fast food/burgers	☐	☐	☐
Fast food, excluding burgers	☐	☐	☐
Fizzy or soft drinks (include local terminology)	☐	☐	☐

66. **In the past 12 months**, have you had a cat in your home?:

Yes ☐

No ☐

67. **In the past 12 months**, have you had a dog in your home?:

Yes ☐

No ☐

68. **In the past 12 months,** how often, on average, have you given **this child** paracetamol (*use local terminology e.g. Acetaminophen, Panadol, Pamol, Tylenol*) for fever?

Never ☐

At least once a year ☐

At least once a month ☐

Thank you very much for your help with this questionnaire. We appreciate your assistance.

Please return your completed questionnaire to your child's teacher.

9.0 Study Instruments for Adults

9.1 Instructions for preparing the questionnaire

The following instructions are to be undertaken BEFORE the questionnaire is printed including pre-coding the office use only boxes (see page 183). Questions 1-24 are fixed. Questions 25-42 are strongly recommended. Centres may wish to shorten the questionnaire. Please see pages 117-124 & 183-213 before printing your questionnaires.

Question 14. After e.g. Please delete the words "puffers (*use local terminology*)" and insert your local terminology for inhalers, prior to printing the questionnaire.

Question 14a. Please insert the name of your local brand of SABAs, LABAs, ICSs and combination ICS and LABA prior to printing the questionnaire.

Question 15. After e.g. Please delete the words "pills (*use local terminology*)" and insert your local terminology for tablets, capsules, liquids or pills, prior to printing the questionnaire.

Question 15a. We are only interested in 4 categories of medicines: leukotriene receptor antagonists, β2 agonist bronchodilator, theophylline and oral corticosteroid. Please delete the words (*Put your local brand name here*) and insert the chemical name, and then in brackets the brand/local name of the tablets, capsules, liquids or other medicines e.g. pills (using your local terminology), prior to printing the questionnaire.

Question 25. What level of education have you received? (*use local terminology*). Please delete the words (*use local terminology*) and insert your local wording for the levels of education using 3 levels. For example, in New Zealand we would delete College as College is another term for Secondary school. If the wording is changed, the Global Centre would appreciate clarification, such as: Primary school = 5 years of age to 12 years of age (or years 1 – 7). This will ensure a more accurate analysis of this question. The categories you use would ideally cover the following area: Education during childhood (approx up to 12 years of age); Education during adolescence (approx 13 to 17 years of age); and advanced education.

Question 37. "In the past 12 months how often, on average, did **<u>you</u>** eat or drink the following?"

If there are foods listed that are not applicable to your country you may delete them. Similarly, if you consider the list too comprehensive, you may delete some of the foods. For MEAT, we include examples that would be applicable for New Zealand. Other countries may like to delete our examples and include relevant examples for their country, prior to printing the questionnaire.

Question 42. There are various terms used to describe a water pipe. Please use the terminology most suitable for your country, prior to printing the questionnaire.

9.2 Instructions for completing the demographic questions

Surveillance and management questionnaire for adults

In addition to the information about your child, we are also seeking information from parents (or guardians), about their health and lifestyle (ADULT QUESTIONNAIRE).

If your child lives with two parents (or guardians), we would be grateful if **BOTH** of you could complete an ADULT QUESTIONNAIRE.

If your child lives with one parent (or guardian), we expect that ONE ADULT QUESTIONNAIRE will be completed.

If more than one child in your family has bought home ADULT QUESTIONNAIRES for completion, we would be most grateful if you could please return the completed questionnaires together WITH the blank copies back to your child's school with ONE child as we need both the completed copies and blank copies for our records.

Other questions require you to tick your answer in a box, write a number or a few words as indicated. If you make a mistake put a cross in the box and tick the correct answer. Tick only one option unless otherwise instructed.

Examples of how to mark questionnaires: Age [30] years

	YES	NO
To answer Yes/No, put a tick in the appropriate box as per example	[ ]	[4]

TODAY'S DATE: [ ] Day [ ] Month [ ] Year

YOUR NAME: [ ]

YOUR AGE: [ ] years

YOUR DATE OF BIRTH: [ ] Day [ ] Month [ ] Year

Are you: MALE [ ] FEMALE [ ]

What is your relationship to the child who brought this questionnaire home from school?

Parent / Grandparent / Other (please describe _____)

Optional questions on Ethnicity here:

The rest of this questionnaire refers to YOUR health (and not to the health of your child).

1. Do you ever have trouble with your breathing? (Tick one box only)

- never ☐
- only rarely ☐
- repeatedly, but it always gets completely better ☐
- continuously, so that your breathing is never quite right ☐

2. Have you had wheezing or whistling in your chest at any time **in the past 12 months**?

- Yes ☐
- No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 9

---

3. How many attacks of wheezing have you had **in the past 12 months**?

- None ☐
- 1-3 ☐
- 4-12 ☐
- more than 12 ☐

4. **In the past 12 months**, how often, on average, has your sleep been disturbed due to wheezing?

- Never woken with wheezing ☐
- Less than one night per week ☐
- One or more nights per week ☐

5. Have you ever been breathless when the wheezing noise was present?

- Yes ☐
- No ☐

6. **<u>In the past 12 months</u>**, how often, on average, has your sleep been disturbed due to shortness of breath?

Never ☐

Less than one night per week ☐

One or more nights per week ☐

7. **<u>In the past 12 months</u>**, how often, on average, has your sleep been disturbed due to coughing?

Never ☐

Less than one night per week ☐

One or more nights per week ☐

8. **<u>In the past 12 months</u>**, has wheezing ever been severe enough to limit your speech to only one or two words at a time between breaths?

Yes ☐

No ☐

---

9. Have you ever had asthma?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 20

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10. Was your asthma confirmed by a doctor?

Yes ☐

No ☐

11. Do you have a written plan which tells you how to look after your asthma?

Yes ☐

No ☐

12. How old were you when you had your first attack of asthma?

Years ☐

13. Have you had an attack of asthma **in the past 12 months**?

Yes ☐

No ☐

14. Have you used any inhaled medicines e.g. puffers (*use local terminology*) to help your breathing at any time **in the past 12 months**? (when you did not have a cold)

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 15

14a. Please indicate how often you used each of the **inhaled** medicines listed below **in the past 12 months**:

(delete the words below and put your local brand)	only when needed	/ in short courses	/ every day
Short acting β- agonists (SABA)	☐	☐	☐
Long acting β- agonists (LABA)	☐	☐	☐
Inhaled corticosteroids (ICS)	☐	☐	☐
Combination ICS and LABA	☐	☐	☐

15. Have you used any tablets, capsules, liquids or other medicines e.g. pills (*use local terminology*) that you swallowed to help your breathing at any time **in the past 12 months**? (when you didn't have a cold)

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 16

15a. Please indicate how often you used each of the tablets, capsules, liquids or other medicines e.g. pills (*use local terminology*) listed below **in the past 12 months**:

	only when needed	/ in short courses	/ every day
(Put your local brand name here)	☐	☐	☐
(Put your local brand name here)	☐	☐	☐
(Put your local brand name here)	☐	☐	☐
(Put your local brand name here)	☐	☐	☐

16. **In the past 12 months**, how many times have you **urgently** been to a doctor because of your breathing problems?

None	1-3	4-12	more than 12
☐	☐	☐	☐

17. **In the past 12 months**, how many times have you **urgently** been to an Emergency Department without being admitted to hospital because of breathing problems?

None	1-3	4-12	more than 12
☐	☐	☐	☐

18. **In the past 12 months** how many times have you been admitted to hospital because of your breathing problems?

None	1	2	more than 2
☐	☐	☐	☐

19. **<u>In the past 12 months</u>**, how many days was your usual activity (at work or in the home) limited because you had breathing problems?

None	1-3	4-12	more than 12
☐	☐	☐	☐

---

20. Have you ever worked in any job that caused wheezing or whistling in your chest?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 21

<u>If yes:</u>

20a. Have you had to leave any of these jobs because they affected your breathing?

Yes ☐

No ☐

---

21. Have you ever had hay fever?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 23

---

22. Was your hay fever confirmed by a doctor?

Yes ☐

No ☐

---

23. Have you ever had eczema?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 25

---

24. Was your eczema confirmed by a doctor?

Yes ☐

No ☐

Questions 25 to 42 are about other aspects of your life and environment

25. What level of education have you received? *(use local terminology)*

Primary school ☐

Secondary school ☐

College, University or other form of tertiary education ☐

26. Does or did your home have visible moisture or mould spots on the walls or ceiling, anywhere in the home? (multiple answers are possible).

26a. Moisture or damp spots

At this moment	During pregnancy of this child	During the first year of this child	At some other time
Yes ☐	Yes ☐	Yes ☐	Yes ☐
No ☐	No ☐	No ☐	No ☐

26b. Mould spots

At this moment	During pregnancy of this child	During the first year of this child	At some other time
Yes ☐	Yes ☐	Yes ☐	Yes ☐
No ☐	No ☐	No ☐	No ☐

IF YOU ANSWERED "NO" TO EVERY OPTION FOR MOISTURE/DAMP AND MOULD SPOTS PLEASE SKIP TO QUESTION 29

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27. Where in the home do these moisture/damp/mould spots occur (more than one answer is possible)

Living room	Yes ☐	No ☐
Parent's Bedroom	Yes ☐	No ☐
Your child's Bedroom	Yes ☐	No ☐
Kitchen	Yes ☐	No ☐
Bathroom	Yes ☐	No ☐
Other	Yes ☐	No ☐

28. Does the total area affected by all moisture/damp/mould spots exceed the size of one postcard?

Yes ☐

No ☐

29. What type of fuel does your household **use daily** for cooking?

1. No food cooked at home ☐
2. Electricity ☐
3. Liquefied petroleum gas ☐
4. Natural gas ☐
5. Biogas ☐
6. Kerosene ☐
7. Coal/lignite ☐
8. Charcoal ☐
9. Wood ☐
10. Straw/shrubs/grass ☐
11. Animal Dung ☐
12. Agricultural crop residue ☐

If you checked an answer between 7 and 12, please go to question 30

If you did not check an answer between 7 and 12, please go to question 34

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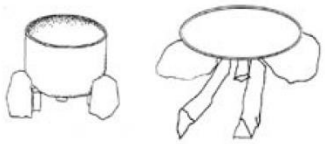
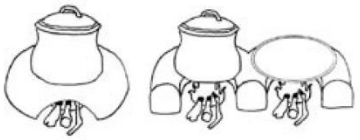
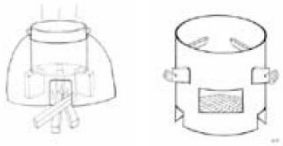
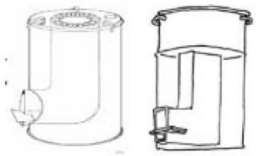
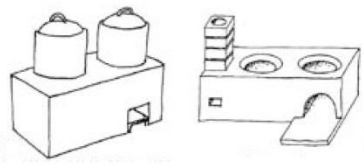
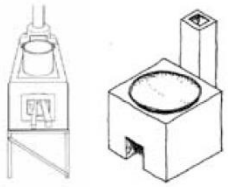
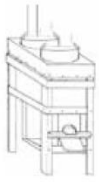
30. What type of stove is **usually** used for cooking?

Select the type (number) from the chart below ☐

Other (***specify***):_____

Don't know ☐

1. Open fire	2. Surrounded fire
Unprotected fire; pot or griddle is supported with rocks, mud or other materials 	Fire is partially or completely surrounded; pot or griddle is supported with rocks, mud or other materials 
3 . Surrounded fire with sunken pot	**4. Stove with combustion chamber**
Fire and pot are completely surrounded by mud or metal; pot is sunken into the stove 	Fire is surrounded by a combustion chamber, usually "L" shaped, inside the stove 
5. Two or three pot stove	**6. Griddle stove**
Fire is surrounded; heat goes directly to two or three pots 	Fire is surrounded; the pot is placed on top of a metal or clay cooking surface 
7. Sunken pot stove	
Fire and pot are surrounded; the pot is sunken into the stove 	

Source: WHO. Tuberculosis prevalence surveys: a handbook. 2011

31. Is smoke removed by hood or chimney?

Neither ☐ Hood ☐ Chimney ☐

If you checked chimney above:

31a. When was chimney last cleaned?

- ☐ Never
- ☐ More than 3 months ago
- ☐ 1 to 3 months ago
- ☐ Less than 1 month ago
- ☐ Don't know

32. Where is the cooking usually done?

- ☐ In a room used for living / sleeping
- ☐ In a separate room used as a kitchen
- ☐ In a separate building used as a kitchen
- ☐ Outdoors
- ☐ Other (specify)_____

33. What type of ventilation is present where the stove is used?

- ☐ Closed room
- ☐ Room with eaves spaces
- ☐ Room with open windows / doors
- ☐ Room with 3 or fewer walls
- ☐ Other (specify)_____

34. Do you heat your house when it is cold?

Yes ☐

No ☐

IF YOU HAVE ANSWERED "NO" PLEASE SKIP TO QUESTION 37

If yes:

35. What type of fuel do you **mainly** use for heating?

1. Electricity ☐
2. Liquefied petroleum gas ☐
3. Natural gas ☐
4. Biogas ☐
5. Kerosene ☐
6. Coal/lignite ☐
7. Charcoal ☐
8. Wood ☐
9. Straw/shrubs/grass ☐
10. Animal Dung ☐
11. Agricultural crop residue ☐

If you checked an answer between 6 and 11, please go to question 36

If you did not check an answer between 6 and 11, please go to question 37

---

36. What type of stove is usually used for heating?

Select the type (number) from the chart in question 30 ☐

Other (specify):_____

37. **<u>In the past 12 months</u>**, how often, on average, did you eat or drink the following? (*please leave blank if you do not know what a food is*)

	Never or only only occasionally	Once or twice per week	Most or all days
Meat (eg beef, lamb, chicken, pork)	☐	☐	☐
Seafood (including fish)	☐	☐	☐
Fruit	☐	☐	☐
Cooked Vegetables (green and root)	☐	☐	☐
Raw Vegetables (green and root)	☐	☐	☐
Pulses (peas, beans, lentils)	☐	☐	☐
Cereals (excluding bread)	☐	☐	☐
Bread	☐	☐	☐
Pasta	☐	☐	☐
Rice	☐	☐	☐
Margarine	☐	☐	☐
Butter	☐	☐	☐
Olive Oil	☐	☐	☐
Milk (include flavoured milk)	☐	☐	☐
Other dairy (include cheese and yoghurt)	☐	☐	☐
Eggs	☐	☐	☐
Nuts	☐	☐	☐
Potatoes	☐	☐	☐
Sugar (including lollies/candies/sweets)	☐	☐	☐
Fastfood/burgers	☐	☐	☐
Fast food, excluding burgers	☐	☐	☐
Fizzy or soft drinks (include local terminology)	☐	☐	☐

38. In the past, have you smoked tobacco on a daily basis, less than daily, or not at all?

Not at all ☐
Less than daily ☐
Daily ☐

39. Do you currently smoke tobacco on a daily basis, less than daily, or not at all?

Not at all ☐
Less than daily ☐
Daily ☐

40. If you have smoked tobacco ever, either daily or less than daily, at what age did you first smoke cigarettes, cigars, or pipe?

Age ☐ Not applicable ☐

41. On average over the entire time you have smoked, how many cigarettes, cigars, or pipe did you smoke each day?

Number per day ☐ Not applicable ☐

42. Do you smoke water pipe (*use local terminology e.g. bong, crack pipe, hookah, hubble-bubble, narghile, shisha, vapourizer, water vapour*) at home?

Yes ☐
No ☐

Thank you very much for completing this questionnaire. We would appreciate this being returned to your child's school as soon as possible.

10.0 Validation of Instruments

Each question in each questionnaire is justified, its source specified, validation described where available and analyses outlined.

10.1 Adolescent age group questions (self completed)

10.1.1 Height and weight measurements of adolescent

Overweight hypothesis

ISAAC Phase Three hypothesized that if a child's weight was excessive in comparison with their height, this could be associated with an increased risk of symptoms of asthma, rhinoconjunctivitis and eczema[53]. For ISAAC Phase Three no sample questions were identified from the literature. There were some papers that commented on the inaccuracies of self-reporting, however another paper found insignificant differences between self-reported and measured height and weight in bank employees[54].

- Source of ISAAC questions: ISAAC Steering Committee

Mitchell et al[43] in ISAAC Phase Three reported associations between obesity and symptoms of asthma and eczema and clear evidence of dose-effect relationships with the magnitudes of the risks of symptoms of asthma and eczema greater with obesity than with overweight.

Analysis of variables. Body Mass Index (BMI), weight ÷ height^2, is calculated for each individual and the BMI used as the variable for analyses. Weight data is converted to kilograms and height data converted to Metres. Although the majority of centres in ISAAC Phase Three self-reported height and weight (72% by parents of the children and 76% by the adolescents themselves), no major differences in the associations were seen in the analyses with measured and self-reported values[43]. However recent evidence exists that half of parents underestimate their children's overweight/obese status and a significant minority underestimate children's normal weight[55]. Therefore in the Global Asthma Network height and weight will be measured by fieldworkers and/or school staff using a standardised protocol[56] (see pages 30 and 187-189).

10.1.2 Asthma questions

These questions are built on those used in ISAAC. The ISAAC Phases One, Two and Three core questions (questions 1-6 below) were piloted before Phase One[57] and published[49, 58, 59]. Most were based on questions used in previous respiratory epidemiological studies (prior to ISAAC) and include both sensitive and specific indicators of asthma[60]. Many of these questions have been used in ISAAC in 306 centres in 105 countries. They were translated from English into 52 languages in ways which were understood locally[50]. They have been used in key ISAAC asthma symptoms publications; Phase One[61, 62], Phase Two[33] and Phase Three[12, 16, 18].

The core questions have been validated against bronchial hyper-responsiveness[3, 4, 22, 23, 63-70].

Due to experience in the presentation and analyses of the ISAAC asthma data[12, 16, 18, 33, 61, 62] and due to the identification of new information from the ISAAC data further asthma questions have been added to gain information on asthma.

Question 1.

This is based on the IUATLD questionnaire (pre 1993)[60]. 'Attacks' of wheezing are not mentioned in order to identify adolescents with persistent symptoms which are not obviously characterised as episodes or attacks. This is seen as a very sensitive question, was successfully used in all ISAAC Phases and it will be used unchanged for the Global Asthma Network.

Question 2.

Limitation to a 12 month period reduces errors of recall[71] and is believed to be independent of month of completion[72]. This is considered to be the most useful question for assessing the prevalence of wheezing illness. This question was used successfully in ISAAC and it will be used unchanged for the Global Asthma Network.

Questions 3, 4 & 5.

These questions used in ISAAC offer three alternative quantitative measures of the frequency and severity of wheezing. Problems with the concept of 'attacks' and difficulty in quantifying the frequency of recurrent asthma, led to the inclusion of question 5 to identify and quantify persistent wheeze. Question 5 was created by ISAAC to identify acute severe asthma which had previously little study. These three questions were used to identify asthma severity in ISAAC, in a comparison of asthma symptom prevalence, mortality and hospital admissions which demonstrated correlations with all three parameters[73]. In that paper, the 12-month prevalence of moderate to severe wheezing comprised one or more of: (i) four or more attacks of wheeze; (ii) woken by wheeze on one or more nights per week or; (iii) wheezing severe enough to limit speech to only one or two words at a time, between breaths. These questions were used to define severe wheezing in ISAAC Phase Three[12] and will be used unchanged for the Global Asthma Network.

Question 6.

This is the first time in the questionnaire that 'asthma' is mentioned. It is deliberately asked after the questions on asthma symptoms. The asthma label is affected by many factors such as awareness of asthma, medical training and experience, cultural and societal factors[74]. Occasionally asthma may be suggested in the absence of wheeze (on the basis of recurrent nocturnal cough etc). This question was used in all phases of ISAAC. It has not been clear whether the answer represents the opinion of the adolescent, or was a label given by a doctor. In the Global Asthma Network the same question will be used, followed by a clarification question (question 7).

Question 7.

As mentioned above in Question 6, this is an additional question for the Global Asthma Network to clarify that a doctor had confirmed that the participant had asthma.

Question 8.

This question, adapted from an ISAAC Phase Two question (Module 2.2 Asthma management. Question 3)[75], has been added to the Global Asthma Network questionnaire. Written asthma management plans are part of most guidelines. Thus this question will provide new information on these plans and will be analysed with the prevalence and severity questions.

Questions 9 & 9a.

Questions 9 and 9a on asthma management are essential to enable the Global Asthma Network to assess its target to decrease the proportion of symptomatic people with asthma not on inhaled corticosteroids. These questions are adapted from ISAAC Phase Two questions (Module 2.2 Asthma management. Questions 1 and 2)[75]. The wording '(when you didn't have a cold)' has been added to the end of the question to reinforce that question 9 is asking about breathing problems without the complication of cold symptoms.

Question 10 & 10a.

Questions 10 and 10a ask about swallowed medicines as opposed to inhaled medicines in questions 9 and 9a and are adapted from ISAAC Phase Two questions (Module 2.2 Asthma Management, questions 1 and 2)[75]. The wording '(when you didn't have a cold)' has been added to the end of the question to reinforce that question 10 is asking about breathing problems without the complication of cold symptoms.

Question 11 & 12.

These questions about urgent visits for asthma in the past 12 months are essential to enable the Global Asthma Network to assess its target to decrease unplanned visits for asthma. The questions are adapted from ISAAC Phase Two (Module 2.2 Asthma management. Question 5)[75]. Different patterns of medical care may contribute to variations in the severity of asthma between countries or over time. These questions along with questions 9 and 10 will allow the relationship (cross-sectional) to be explored between treatment and morbidity.

Question 13.

This question, about hospital admissions for asthma in the past 12 months, is essential to enable the Global Asthma Network to assess its target to decrease hospital admissions for asthma. This question is adapted from an ISAAC Phase Two question (Module 2.2 Asthma management. Question 6)[75].

Question 14.

This question is adapted from an ISAAC Phase Two question (Module 2.2 Asthma management. Question 9)[75]. It has been added to the Global Asthma Network questionnaire to provide information on school absenteeism, in the past 12 months, which is an additional indicator of asthma morbidity. It will enable the Global Asthma Network to assess its target to decrease time off school due to asthma.

Question 15.

When piloting questions for ISAAC Phase One[57], this question was a stem question under question 2, however it was found in some Australasian surveys to identify some adolescents who deny wheezing or whistling in questions 1 or 2, yet report wheeze with exercise, and so was moved to question 7 for the full ISAAC study. It was successful in ISAAC placed as question 7 and it will now follow the new questions on asthma diagnosed asthma and management for the Global Asthma Network questionnaire.

Question 16.

Nocturnal cough is widely accepted as an alternative presentation of asthma, and this question was included in ISAAC to increase the overall sensitivity of the questionnaire, although its specificity in population surveys remained unclear. In ISAAC Phase One dry night cough in the past 12 months was reported more frequently than 12 month wheeze in all countries except for Australia, New Zealand and Sweden[62]. Phase Three saw a global increase of night cough of 0.51% per year[18]. This question has been retained for the Global Asthma Network so that trends over time can be monitored.

10.1.3 Rhinitis questions

ISAAC studied not only asthma but also the related diseases of rhinitis[10, 13, 19, 30] and eczema[11, 14, 20, 24, 76]. While the Global Asthma Network is focussed on asthma, the surveillance undertaken by the Global Asthma Network gives an opportunity to continue surveillance of rhinitis and eczema too. This would enable the monitoring of time trends in these two related diseases[16, 19, 20, 49, 58, 59] where to date there have been only two time points in worldwide studies[19, 20]. In addition, the responses to the questions will enable the Global Asthma Network to continue to explore the relationship of asthma with rhinitis and eczema.

The ISAAC Phases One, Two and Three rhinitis core questions (questions 17-22 below) were based on questions used in previous respiratory epidemiological studies and include both sensitive and specific indicators for respiratory symptoms[77, 78]. Due to the experience in the presentation and analyses of the ISAAC rhinitis data[10, 13, 16, 19, 61] and due to the identification of new information from the ISAAC data one further question (question 23) on doctor diagnosis has been added to enhance the Global Asthma Network rhinitis questions.

Questions 17 & 18.

These questions (prior to ISAAC) were found to have a positive predictive value of 80% in detecting rhinitis in a community sample of adults (aged 16-65 years) in south west London[78]. These questions were used in all ISAAC phases and will be used unchanged for the Global Asthma Network.

Question 19.

This question (new for the Global Asthma Network) was piloted successfully in the EISL study[79] to determine the presence of allergic rhinitis in children. This question was not used in ISAAC worldwide surveys.

Question 20.

This question had the highest positive predictive value (78%) in detecting atopy among participants with rhinitis[78]. In ISAAC question 20 was used in conjunction with question 18 to determine the prevalence of rhinoconjunctivitis by calculating the number of children responding positively to both questions divided by the total number of completed questionnaires[10]. Rhinoconjunctivitis was justified to be considered in ISAAC to be the variable to be analysed in detail because this symptom combination most closely related to objective indicators of allergic sensitisation in European populations[78, 80, 81]. This question was used in all ISAAC phases and will be used unchanged for the Global Asthma Network.

Question 21.

This question was considered a crude qualitative measure of severity when considering questions to use in ISAAC Phase One[52] but was considered to correlate well with other indicators of morbidity from rhinitis including reported symptom severity, interference with specific activities of daily living and medical service use. This question was used in all ISAAC phases and will be used unchanged for the Global Asthma Network.

Question 22.

This question has been used to investigate the labelling of rhinitis in relation to the prevalence of rhinitis symptoms. The label 'Hay fever' had a positive predictive value of 71% in detecting atopy among participants with rhinitis[78]. This question was used in all ISAAC phases. It has not been clear whether the answer represents the parent's own opinion, or was a label given by a doctor. In the Global Asthma Network the same question will be used, followed by a clarification question (question 23)

Question 23.

As mentioned in Question 22, this is a new question for the Global Asthma Network to clarify that a doctor had confirmed that the participant had rhinitis.

10.1.4 Eczema questions

ISAAC studied not only asthma but also the related diseases rhinitis[10, 13, 19, 30] and eczema[11, 14, 20, 24, 76]. While the Global Asthma Network is focussed on asthma, the surveillance undertaken by the Global Asthma Network also gives an opportunity to continue surveillance of rhinitis and eczema. This would enable the monitoring of time trends in these two related diseases[16, 19, 20, 49, 58, 59] whereas to date there have been only two time points in worldwide studies[19, 20]. In addition the responses to the questions will enable the Global Asthma Network to continue to explore the relationship of asthma with rhinitis and eczema.

The ISAAC Phases One, Two and Three eczema core questions (questions 24-29 below) were based on questions used in previous eczema studies[82-84] prior to ISAAC and included both sensitive and specific indicators for eczema symptoms. Due to experience in the presentation and analyses of the ISAAC eczema data[11, 14, 16, 20, 61] and due to the identification of new information from the ISAAC data one further question (question 30) on diagnosis has been added to enhance the Global Asthma Network eczema questions.

Question 24.

Prior to ISAAC, this screening question was evaluated in a UK pilot study of factors which discriminated 'typical' mild-moderate atopic dermatitis from non-atopic eczema and other inflammatory dermatoses presenting for the first time in British hospital outpatient clinics[85]. This screening question was used in all ISAAC phases and will be used unchanged for the Global Asthma Network.

Question 25.

Following the form of the ISAAC core questionnaires for wheezing and rhinitis, further enquiry focused on those children with recent rashes (in the past 12 months) to minimise problems of incomplete and selective recall. This question was used in all ISAAC phases and will be used unchanged for the Global Asthma Network.

Question 26.

This question used in ISAAC worldwide surveys, was found to have high sensitivity (94%) and specificity (96%). This question was used in all ISAAC phases and will be used unchanged for the Global Asthma Network.

Questions 27.

Question 27 was included in all ISAAC phases in the adolescent questionnaire as a measure of eczema morbidity[83]. In the Global Asthma Network, this question will be used unchanged.

Question 28.

Respondents with sleep loss of one or more nights per week were considered to have severe eczema based on previous studies[86, 87]. This question was used in all ISAAC phases and will be used unchanged for the Global Asthma Network.

Question 29.

This question permitted investigation of the labelling of eczema in relation to the prevalence of eczema symptoms. This question was used in all ISAAC phases. It has not been clear whether the answer represents the participant's own opinion, or was a label given by a doctor. In the Global Asthma Network the same question will be used, followed by a clarification question (question 30)

Question 30.

As mentioned in question 29, this is an additional question for the Global Asthma Network to clarify that a doctor had confirmed that the participant had eczema.

Analyses: asthma, rhinitis and eczema

The analysis of the asthma, rhinoconjunctivitis and eczema core questions will enable the Global Asthma Network to obtain internationally comparable estimates of the direction and magnitude of change in prevalence of symptoms. Comparisons of prevalence rates between different centres will be made using appropriate statistical methods. Crude rates can be compared by using contingency tables or logistic regression. Comparison of standardised rates or data that needs controlling for confounding will involve multivariate logistic regression.

In addition, calculations will be made of the proportion of participants that have asthma who are not on inhaled corticosteroids, time off work/school because of asthma, unplanned visits for asthma, and hospital admissions. The direction and magnitude of symptoms and severity of asthma will be derived for each centre.

10.1.5 Environmental questions

The ISAAC Phase Three EQ (questions 31,32,35-43 below) were either sourced from existing questions used in previous epidemiological studies (prior to ISAAC), or where these were not available, developed by the ISAAC Steering Committee. Due to experience in the presentation and analyses of the ISAAC EQ and due to the identification of new information from the ISAAC data, further questions have been added to enhance the Global Asthma Network EQ (questions 33, 34, 37a, and 44-48).

Inclusion of standardised questions on past and present living and exposure conditions will permit:

a) Between-centre correlations of disease prevalence and risk factor distribution.
b) A pooled evaluation of within-centre analyses of the association between disease and risk factors at the individual level.

Analyses:

For each EQ, prevalence odds ratios will be calculated using generalised linear mixed models with a binomial distribution and a logit link, with centres being modelled as a random effect. Analyses will be adjusted for gender, region of the world, language and per capita gross national income. Regression models will allow for the sampling of schools by scaling the size of the sample by the design effect. Further multiple regression analyses will be conducted to investigate whether the association between symptoms and a particular EQ is confounded by other risk factors for the information collected from an EQ and which had shown an association with wheezing, rhinoconjunctivitis or eczema in the univariate analyses.

Questions 31, 32, 33.

Exercise

ISAAC Phase Three hypothesized that regular exercise and physical fitness are protective against asthma. Possible aggravating factors: Being sedentary and lack of physical fitness. An assessment of physical activity in adolescents was undertaken by Aaron *et al*[88] but not undertaken in relationship to asthma and allergies.

- Source of questions 31 & 32 for ISAAC: Aaron *et al*[88] and Kohl *et al*[89]

Mitchell et al in ISAAC Phase Three[43] found a positive association between physical activity and symptoms of asthma, rhinoconjunctivitis and eczema in adolescents but not in children[43, 90] and an increased risk of asthma symptoms with television viewing for five or more hours/day in children and adolescents. Question 32 has added ‘of 7 days’ following ‘a week’ and ‘(include DVD’s, films)’ as well as ‘videos’ following comments made by participants during the ISAAC fieldwork.

- Source of question 33, the Global Asthma Network Steering Group. Question 33 is a new question that takes into account time spent on the computer (PlayStation, smartphone, tablet) and/or internet (Chat, Facebook, Games, Twitter YouTube) and more

Analysis of variables. Combinations of these questions will allow classification of participants into groups based on their level of exercise and whether they are sedentary.

Question 34.

Twin sibship

A new question on whether the participant is a twin has been added following the Global Asthma Network surveillance pilot study 2015. This will avoid confusion when twins complete questions 35 and 36 on older/younger siblings.

- Source of question 34: the Global Asthma Network Steering Group

Questions 35 & 36.

Parity

ISAAC hypothesized that increased household size was associated with a decreased risk of symptoms of asthma, allergic rhinoconjunctivitis and atopic eczema[91]. A decrease in the cumulative incidence and prevalence of allergic rhinitis and the cumulative incidence of asthma with increasing number of siblings was reported by Hesselmar *et al*[91].

Related factors could be small family size and early birth order.

- Source of ISAAC questions 35 & 36: ISAAC Steering Committee

Strachan et al in ISAAC Phase Three[48] found new observations of greater symptom severity among children from larger families which seems to be a more consistent phenomenon worldwide, and deserves further exploration and explanation.

These questions will remain unchanged for the Global Asthma Network, however the instruction '(Please put 0 if there are no older [younger] siblings)' will be added to these questions following comments made by participants when undertaking the ISAAC fieldwork.

Analysis of variables. Associations with symptoms will be identified. The questions allow identification of separate effects of birth order and number of siblings and for the Global Asthma Network will build on the information from ISAAC.

Questions 37, 37a & 38.

Migration

ISAAC hypothesized that migrants to a new country will adopt the prevalence of symptoms of asthma, allergic rhinoconjuncitivitis and atopic eczema of their new country over time[92-97].

There was conflicting evidence in the literature regarding the health of immigrants. Robertson *et al*[92] reported that symptoms of asthma, rhinoconjunctivitis and eczema were more common in children born in Australia compared with children born in other countries but resident in Australia. Leung *et al*[95] reported that prevalence of hay fever and asthma increased with length of stay among Asian immigrants to Australia.

- Source of ISAAC questions 37 & 38: ISAAC Steering Committee

García-Marcos et al in ISAAC Phase Three[47] found that recent migration to high prevalence/affluent countries is associated with a lower prevalence of allergic diseases. The pre-migration environment might be protective, but this effect quickly decreases with increasing time in the host country.

These questions will be used unchanged in the Global Asthma Network. For the country of birth question, if the respondent answered 'NO' to question 37, the Global Asthma Network will include a question about what country the respondent was born in (question 37a).

- Source of question 37a: The Global Asthma Network Steering Group

Analysis of variables. Associations with symptoms will be identified. The questions allow assessment of the effect of time spent in the country and country of birth.

Question 39.

Traffic

ISAAC hypothesized that respiratory irritants such as sulphur dioxide (SO_2) nitrogen oxides (NO_x) and particulates from diesel combustion cause local respiratory inflammation, increasing tissue contact with inhaled allergens and the likelihood of an allergic response[98, 99].

- Source of ISAAC question: Weiland *et al*[98]

Brunekreef et al in ISAAC Phase Three[37] found that higher exposure to self-reported truck traffic on the street of residence is associated with increased reports of symptoms of asthma, rhinitis and eczema in many locations in the world.

This question will remain unchanged for the Global Asthma Network, however '(not often)' will be added next to 'seldom' as an option as the Global Asthma Network pilot study found some participants did not understand the word 'Seldom'.

Analysis of variables. Associations with symptoms will be further explored in the Global Asthma Network.

Question 40.

Diet

ISAAC Phase Three hypothesized that a plant-based diet protected against asthma and allergies and a 'Western' diet was positively associated with asthma and allergies.

Protective and aggravating factors found in the ISAAC Diet ecological analysis[100] included starch, cereals, rice, vegetables, fish, other seafood, fibre, fruit, nuts, olive oil (protective); *trans* fatty acids, fast foods (aggravating). Other foods considered included, eggs, animal fats, milk, polyunsaturated fatty acids. Dietary surveys in the literature were lengthy questionnaires and either interviewer administered or adult self-completed, food frequency questionnaires either prospective using a diary or retrospective by recall (7 day, 3 months, 12 months) or 'dietary history' which is a recalled food frequency questionnaire. No short diet questionnaires suitable for inclusion in the ISAAC EQ were identified.

- Source of question: ISAAC Steering Committee

Ellwood et al, in ISAAC Phase Three[44] found a negative association between the intake of fast food and asthma, rhinitis and eczema symptoms and a positive association between these symptoms and the intake of fresh fruit and vegetables. These associations were also found by Nagel et al[29] and Wickens et al[101] in ISAAC Phase Two. The ISAAC Phase Three EQ questions will be used in the Global Asthma Network with some food items being separated (such as cooked and raw vegetables) and additional food items such as fizzy or soft drinks. Since we found the association with fast food we have been questioned about its precise nature, so we are adding a food type to separate out the types of fast food. The fast food outlets that are common in most countries are McDonald's and Burger King which enables burgers to be studied as a separate group. Food types that have been separated out are: Cooked vegetables; Raw vegetables; Cereals (excluding bread); Bread; Olive oil; Other dairy (include cheese and yoghurt); Sugar (includes lollies, candies, sweets); Fast food/ burgers; Fast food excluding burgers. 'Fizzy or soft drinks (include local terminology)' has been added due to experience in ISAAC.

Analysis of variables. Components will be analysed individually, some dietary items may be combined, such as a plant based diet, or a Mediterranean diet. Details of these combinations are yet to be developed.

Question 41.

Paracetamol

It has been hypothesized that frequent paracetamol use is associated with an increased risk of symptoms of asthma, allergic rhinoconjunctivitis and atopic eczema[102].

Newson *et al*[102] reported, in a recent ecological analysis, a positive association between paracetamol consumption and the prevalence of asthma, allergic rhinoconjunctivitis and atopic eczema symptoms in children. They speculate that paracetamol may influence atopic disease by depleting glutathione in the airways and in immune cells.

- Source of question: ISAAC Steering Committee

Beasley et al[35] in ISAAC Phase Three found that the use of paracetamol may represent an important risk factor for the development and/or maintenance of asthma, rhinoconjunctivitis and eczema in adolescent children. This question will remain unchanged for the Global Asthma Network.

Analysis of variables. Associations with symptoms will be identified.

Questions 42 & 43.

Allergens

ISAAC hypothesized that exposure to allergens is associated with increased risk of symptoms of asthma, allergic rhinoconjunctivitis and atopic eczema.

Roost *et al*[103] concluded that current cat ownership represented a significant risk for sensitization to cat if cats were allowed indoors. They do, however suggest that childhood exposure to pets, including cats, might modulate immunologic mechanisms and reduce sensitization to cat in adulthood.

- Source of ISAAC questions: Roost *et al*[103]

Brunekreef et al, in ISAAC Phase Three[40] found that early life exposure to cats is a risk factor for symptoms of asthma, rhinoconjunctivitis and eczema in 6 and 7 year olds especially in less affluent countries.

These questions will remain unchanged for the Global Asthma Network.

Analysis of variables. Associations with symptoms will be identified. The questions allow identification of separate trigger and sensitisation effects and with data from ISAAC Phase Three.

Questions 44 – 47.

Tobacco smoke

It is hypothesized that exposure to tobacco smoke in early life is associated with increased risk of symptoms of asthma, rhinoconjunctivitis and eczema. That exposure to tobacco smoke is a trigger for asthma attacks for asthmatics[104]. In the ISAAC Phase Three EQ, the questions from Jarvis[104] (1999) were used. However in the Global Asthma Network, updated questions (2012) from a WHO survey, the 'Global Adult Tobacco survey', will be used. The option 'don't know' has been removed for the Global Asthma Network

- Source of questions: The Global Adult Tobacco survey 2011[105]

Analysis of variables. Associations with symptoms will be identified.

Question 48.

Water pipe smoking

ISAAC Phase Three in Syria found a stronger association between Mother smoking water pipe (narghile) than with cigarette smoking[106]. They concluded that international studies investigating environmental tobacco smoke should include questions on narghile smoking. The Global Asthma Network adolescent questionnaire and the Global Asthma Network adult questionnaire has used an adapted question from the ISAAC Phase Three Syrian study[106]. Narghile is also known as bong, crack pipe, hookah, hubble bubble, shisha, vapourizer, water vapour and water pipe. This terminology has been added to question 48.

- Source of question: ISAAC Phase Three study in Syria[106]

Analysis of variables. Associations with symptoms will be identified.

10.1.6 VIDEO questionnaire

Questions 49-53.

In response to possible translation problems with written questionnaires, for ISAAC Phase One a video questionnaire was developed and validated in Wellington, New Zealand[1, 2, 6].

In particular the video questionnaire was developed to avoid problems of translation and comprehension of terms such as 'wheeze' or 'whistling' and their use in culturally heterogeneous populations.

In Phase One of ISAAC, it was the first occasion in which the video questionnaire had been used in an international comparison. The similarities and differences found between countries were generally consistent with previously published work, and the video and written questionnaires showed a similar pattern of results[1-6, 107].

The video is non-verbal and shows 5 different scenes of breathing. The students are then asked if their breathing has ever been like that of the person in the video; if YES, they are asked whether this has occurred in the past year; and if YES, they are asked whether this occurs more often than once a week. This video takes 6 minutes to play. The video has the advantage of obtaining data from a large number of students quickly and efficiently.

The international version of the video questionnaire will remain unchanged for the Global Asthma Network; it will remain a strongly recommended questionnaire for centres to use.

10.2 Children's questions (parent completed)

10.2.1 Height and weight measurements of child

Overweight hypothesis

ISAAC Phase Three hypothesized that if a child's weight was excessive in comparison with their height, this could be associated with an increased risk of symptoms of asthma, rhinoconjunctivitis and eczema[53]. For ISAAC Phase Three, no sample questions were identified from the literature. There were some papers that commented on the inaccuracies of self-reporting, however another paper found insignificant differences between self-reported and measured height and weight in bank employees[54].

- Source of ISAAC questions: ISAAC Steering Committee

Mitchell et al[43] in ISAAC Phase Three reported an association between obesity and symptoms of asthma and eczema and clear evidence of a dose-effect relationship with the magnitude of the risk of symptoms of asthma and eczema greater with obesity than with overweight.

Analysis of variables. Body Mass Index (BMI), weight ÷ height^2 is calculated for each individual and the BMI used as the variable for analyses. Weight data is converted to Kg and height data converted to metres. Although the majority of centres in ISAAC Phase Three self-reported height and weight (72% by parents of the children and 76% by the adolescents themselves), no major differences in the associations were seen in the analyses with measured and self-reported values[43]. However recent evidence exists that half of parents underestimate their children's overweight/obese status and a significant minority underestimate children's normal weight[55]. Therefore in the Global Asthma Network height and weight will be measured by fieldworkers and/or school staff using a standardised protocol[56] (see pages 45 and 187-189).

10.2.2 Asthma questions

These questions are built on those used in the International Study of Asthma and Allergies in Childhood (ISAAC). The ISAAC Phases One, Two and Three core questions (questions 1,3-7,16,17 below) were piloted before Phase One[57] and published[49, 58, 59, 108]. Most were based on questions used in previous respiratory epidemiological studies (prior to ISAAC) and include both sensitive and specific indicators of asthma[60]. Many of these questions have been used in ISAAC in 306 centres in 105 countries. They were translated from English into 44 languages in ways which were understood locally[50]. They have been used in key ISAAC asthma symptoms publications; Phase One[61, 62], Phase Two[33] and Phase Three[12, 16, 18].

The core questions have been validated with bronchial hyper-responsiveness[3, 4, 22, 23, 63-70].

Due to experience in the presentation and analyses of the ISAAC asthma data[12, 16, 18, 33, 61, 62] and due to the identification of new information from the ISAAC data further asthma questions have been added to gain information on asthma.

Question 1.

This question is based on the IUATLD questionnaire (pre 1993)[60]. 'Attacks' of wheezing are not mentioned in order to identify children with persistent symptoms which are not obviously characterised as episodes or attacks. This is seen as a very sensitive question, was successfully used in all ISAAC Phases and it will be used unchanged for the Global Asthma Network.

Question 2.

This question was not included in the ISAAC worldwide surveys. This question determines the age of onset of wheeze which is pertinent to defining phenotypes[109].

Question 3.

Limitation to a 12 month period reduces errors of recall[71] and is independent of month of completion[72]. This is considered to be the most useful question for assessing the prevalence of wheezing illness. This question was used successfully in ISAAC and it will be used unchanged for the Global Asthma Network.

Questions 4, 5 and 6.

These questions used in ISAAC offer three alternative quantitative measures of the frequency and severity of wheezing in the past 12 months. Problems with the concept of 'attacks' and difficulty in quantifying the frequency of recurrent asthma, led to the inclusion of question 5 to identify and quantify persistent wheeze. Question 6 was created by ISAAC to identify acute severe asthma which had previously little study. These three questions were used to identify asthma severity in ISAAC, in a comparison of asthma symptom prevalence, mortality and hospital admissions which demonstrated correlations with all three parameters[73]. In that paper, the 12-month prevalence of moderate to severe wheezing comprised one or more of: (i) four or more attacks of wheeze; (ii) woken by wheeze on one or more nights per week or; (iii) wheezing severe enough to limit speech to only one or two words at a time, between breaths. These questions were used to define severe wheezing in ISAAC Phase Three[12] and will be used unchanged for the Global Asthma Network.

Question 7.

This is the first time in the questionnaire that 'asthma' is mentioned. The asthma label is affected by many factors such as awareness of asthma, medical training and experience, cultural and societal factors[74]. Occasionally asthma may be suggested in the absence of wheeze (on the basis of recurrent nocturnal cough etc). This question was used in all phases of ISAAC. It has not been clear whether the answer represents the parent's own opinion, or was a label given by a doctor. In the Global Asthma Network the same question will be used, followed by a clarification question (question 8).

Question 8.

As mentioned in Question 7, this is an additional question for the Global Asthma Network to clarify that a doctor had confirmed that the participant had asthma.

Question 9.

This question, adapted from an ISAAC Phase Two question (Module 2.2 Asthma management. Question 3)[75], has been added to the Global Asthma Network surveillance questionnaire. Written asthma management plans are part of most asthma guidelines. Thus this question will provide new information on these plans and will be analysed with the prevalence and severity questions.

Questions 10 & 10a.

Questions 10 and 10a on asthma management are essential to enable the Global Asthma Network to assess its target to decrease the proportion of symptomatic people with asthma not on inhaled corticosteroids. These questions are adapted from ISAAC Phase Two questions (Module 2.2 Asthma management. Questions 1 and 2)[75]. The wording '(when he/she did not have a cold)' has been added to the end of question 10 to reinforce that the question is asking about breathing problems without the complication of cold symptoms.

Question 11 & 11a.

Questions 11 and 11a ask about swallowed medicines as opposed to inhaled medicines in questions 10 and 10a and adapted from ISAAC Phase Two questions (Module 2.2 Asthma Management. Questions 1 and 2)[75]. The wording '(when he/she did not have a cold)' has been added to the end of question 11 to reinforce that question 11 is asking about breathing problems without the complication of cold symptoms.

Question 12.

This question about urgent visits for asthma is essential to enable the Global Asthma Network to assess its target to decrease unplanned visits for asthma. This question is adapted from an ISAAC Phase Two question (Module 2.2 Asthma management. Question 5)[75].

Question 13.

Different patterns of medical care may contribute to variations in the severity of asthma, between countries or over time. This question and question 12 will explore the relationship between treatment and morbidity and has been adapted from ISAAC Phase Two (Module 2.2 Asthma management. Question 5)[75].

Question 14.

This question is about hospital admissions for asthma is essential to enable the Global Asthma Network to assess its target to decrease hospital admissions for asthma. This question is adapted from an ISAAC Phase Two question (Module 2.2 Asthma management. Question 6)[75].

Question 15.

This question is adapted from an ISAAC Phase Two question (Module 2.2 Asthma management. Question 9)[75]. It has been added to the Global Asthma Network questionnaire to provide information about school absenteeism which is an additional indicator of asthma morbidity. It will enable the Global Asthma Network to assess its target to decrease time off school due to asthma.

Question 16.

When piloting questions for ISAAC Phase One, this question was a stem question under question 2. However it was found in some Australasian surveys to identify some children who deny wheezing or whistling at question 1 or 2, yet report wheeze with exercise, and so was moved to question 7 for the full ISAAC study. It was successful in ISAAC placed as question 7[108] and it will now follow the new questions on asthma diagnosis and management for the Global Asthma Network questionnaire.

Question 17.

Nocturnal cough is widely accepted as an alternative presentation of asthma, and this question was included in ISAAC to increase the overall sensitivity of the questionnaire, although its specificity in population surveys remained unclear. In ISAAC Phase One, dry night cough in the past 12 months was reported more frequently than 12 month wheeze in all countries except for Australia, New Zealand and Sweden[62]. Phase Three saw a global increase of night cough of 0.51% per year[18]. This question has been retained for the Global Asthma Network so that trends over time can be monitored.

10.2.3 Rhinitis questions

ISAAC studied not only asthma but also the related diseases of rhinitis[10, 13, 19, 30] and eczema[11, 14, 20, 24, 76]. While the Global Asthma Network is focussed on asthma, the surveillance undertaken by the Global Asthma Network gives an opportunity to continue surveillance of rhinitis and eczema too. This would enable the monitoring of time trends in these two related diseases[16, 19, 20, 49, 58, 59] where to date there have been only two time points in worldwide studies[19, 20]. In addition, the responses to the questions will enable the Global Asthma Network to continue to explore the relationship of asthma with rhinitis and eczema.

The ISAAC Phases One, Two and Three rhinitis core questions (questions 18,20,22-24 below) were based on questions used in previous respiratory epidemiological studies and include both sensitive and specific indicators for respiratory symptoms[77, 78]. Due to the experience in the presentation and analyses of the ISAAC rhinitis data[10, 13, 16, 19, 61] and due to the identification of new information from the ISAAC data three questions (questions 19, 21 and 25) have been added to enhance the Global Asthma Network rhinitis questions.

Questions 18 & 20.

These questions (prior to ISAAC) were found to have a positive predictive value of 80% in detecting rhinitis in a community sample of adults (aged 16-65 years) in south west London[78]. These questions were used in all ISAAC phases and will be used unchanged for the Global Asthma Network.

Question 19.

This question determines the age of onset of rhinitis. This question was not included in the ISAAC worldwide surveys.

Question 21.

This question (new for the Global Asthma Network) was piloted successfully in the EISL study[79] to determine the presence of allergic rhinitis in children. This question was not used in ISAAC worldwide surveys.

Question 22.

This question had the highest positive predictive value (78%) in detecting atopy among participants with rhinitis[78]. In ISAAC, question 22 was used in conjunction with question 20 to determine the prevalence of rhinoconjunctivitis by calculating the number of children responding positively to both questions divided by the total number of completed questionnaires[10]. Rhinoconjunctivitis was justified to be considered in ISAAC to be the variable to be analysed in detail because this symptom combination most closely related to objective indicators of allergic sensitisation in European populations[78, 80, 81]. This question was used in all ISAAC phases and will be used unchanged for the Global Asthma Network.

Question 23.

This question was considered a crude qualitative measure of severity when considering questions to use in ISAAC Phase One[52] but was considered to correlate well with other indicators of morbidity from rhinitis including reported symptom severity, interference with specific activities of daily living and medical service use. This question was used in all ISAAC phases and will be used unchanged for the Global Asthma Network.

Question 24.

This question permitted investigation of the labelling of rhinitis in relation to the prevalence of rhinitis symptoms. The label "hay fever" had a positive predictive value of 71% in detecting atopy among participants with rhinitis[78]. This question was used in all ISAAC phases. It has not been clear whether the answer represents the parent's own opinion, or was a label given by a doctor. In the Global Asthma Network the same question will be used, followed by a clarification question (question 25)

Question 25.

As mentioned in question 24, this is an additional question for the Global Asthma Network to clarify that a doctor had confirmed that the participant had rhinitis.

10.2.4 Eczema questions

ISAAC studied not only asthma but also the related diseases rhinitis[10, 13, 19, 30] and eczema[11, 14, 20, 24, 76]. While the Global Asthma Network is focussed on asthma, the surveillance undertaken by the Global Asthma Network gives an opportunity to also continue surveillance of rhinitis and eczema. This would enable the monitoring of time trends in these two related diseases[16, 19, 20, 49, 58, 59] where to date there have been only two time points in worldwide studies[19, 20]. In addition the responses to the questions will enable the Global Asthma Network to continue to explore the relationship of asthma with rhinitis and eczema.

The ISAAC Phases One, Two and Three eczema core questions (questions 26-32 below) were based on questions used in previous eczema studies[82-84] prior to ISAAC and included both sensitive and specific indicators for eczema symptoms. Due to experience in the presentation and analyses of the ISAAC eczema data[11, 14, 16, 20, 61] and due to the identification of new information from the ISAAC data one further question (question 33) on diagnosis has been added to enhance the Global Asthma Network eczema questions.

Question 26.

Prior to ISAAC, this screening question was evaluated in a UK pilot study of factors which discriminated "typical" mild-moderate atopic dermatitis from non-atopic eczema and other inflammatory dermatoses presenting for the first time in British hospital outpatient clinics[85]. This screening question was used in all ISAAC phases and will be used unchanged for the Global Asthma Network.

Question 27.

Following the form of the ISAAC core questionnaires for wheezing and rhinitis, further enquiry focused on those children with recent rashes to minimise problems of incomplete and selective recall. This question was used in all ISAAC phases and will be used unchanged for the Global Asthma Network.

Question 28.

This question used in ISAAC worldwide surveys was found to have high sensitivity (94%) and specificity (96%) if case-definition was based on both flexural involvement and age of onset (question 29)[84] . This question was used in all ISAAC phases and will be used unchanged for the Global Asthma Network.

Questions 29 & 30.

Questions 29 and 30 were included in all ISAAC phases as measures of the severity of eczema, one assessed chronicity, the other morbidity[83]. In the Global Asthma Network, these questions will be used unchanged.

Question 31.

Respondents with sleep loss of one or more nights per week were considered to have severe eczema based on previous studies[86, 87]. This question was used in all ISAAC phases and will be used unchanged for the Global Asthma Network.

Question 32.

This question permitted investigation of the labelling of eczema in relation to the prevalence of eczema symptoms. This question was used in all ISAAC phases. It has not been clear whether the answer represents the parent's own opinion, or was a label given by a doctor. In the Global Asthma Network the same question will be used, followed by a clarification question (question 33).

Question 33.

As mentioned in Question 32, this is an additional question for the Global Asthma Network to clarify that a doctor had confirmed that the participant had eczema.

Analyses: asthma, rhinitis and eczema

The analysis of the asthma, rhinoconjunctivitis and eczema core questions will enable the Global Asthma Network to obtain internationally comparable estimates of the direction and magnitude of change in prevalence of symptoms of each condition. Comparisons of prevalence rates between different centres will be made using appropriate statistical methods. Crude rates can be compared by using contingency tables or logistic regression. Comparison of standardised rates or data that needs controlling for confounding will involve multivariate logistic regression.

In addition, calculations will be made of the proportion of participants that have asthma who are not on inhaled corticosteroids, time off work/school because of asthma, unplanned visits for asthma, and hospital admissions. The direction and magnitude of symptoms and severity of asthma will be derived for each centre.

10.2.5 Environment questions

The ISAAC Phase Three EQ (questions 35, 39, 40, 42, 44, 46-48, 53, 54, 58-68 below) were either sourced from existing questions used in previous epidemiological studies (prior to ISAAC), or where these were not available, developed by the ISAAC Steering Committee. Due to experience in the presentation and analyses of the ISAAC EQ and due to the identification of new information from the ISAAC EQ data, further questions have been added to enhance the EQ to be used in the Global Asthma Network.

Inclusion of standardised questions on past and present living and exposure conditions will permit:

a) Between-centre correlations of disease prevalence and risk factor distribution.

b) A pooled evaluation of with-centre analyses of the association between disease and risk factors at the individual level.

c) Monitoring time trends in exposure to risk factors and asthma.

Analyses:

For each EQ, prevalence odds ratios will be calculated using generalised linear mixed models with a binomial distribution and a logit link, with centres being modelled as a random effect. Analyses will be adjusted for gender, region of the world, language and per capita gross national income. Regression models will allow for the sampling of schools by scaling the size of the sample by the design effect. Further multiple regression analyses will be conducted to investigate whether the association between symptoms and a particular EQ is confounded by other risk factors for the information collected from an EQ and which had shown an association with wheezing, rhinoconjunctivitis or eczema in the univariate analyses.

Question 34.

Paracetamol

Beasley et al, in ISAAC Phase Three[34] found that use of paracetamol in the first year of life and in later childhood is associated with risk of asthma, rhinoconjunctivitis and eczema at age 6 to 7 years, suggesting to the authors that exposure to paracetamol might be a risk factor for the development of asthma in childhood. There are suggestions that prenatal use of paracetamol might be a risk factor for the development of asthma.

- Source of question: The Global Asthma Network Steering Group

Analysis of variables. Associations with symptoms will be undertaken on paracetamol use in pregnancy.

Question 35.

Farm animals

That exposure to farm animals in pregnancy is protective against the development of asthma symptoms in children.

Douwes et al[110] in ISAAC Phase Two found a combination of prenatal and current exposure was most strongly associated with wheeze, asthma medication, asthma ever, hay fever and eczema. Although ISAAC has not used these questions they will be used in the Global Asthma Network to test out this hypothesis.

- Source of question: The Global Asthma Network Steering Group

Analysis of variables. Associations with symptoms will be undertaken.

Question 36.

Smoking in pregnancy

There is evidence that low birth weight is associated with maternal smoking in pregnancy[111-114]. ISAAC Phase Three assessed the child's birth weight and found an association between low birth weight and an increased risk of reported asthma ever and symptoms of asthma (Mitchell 2014). However the authors commented that a limitation of that study was the absence of data on maternal smoking during pregnancy.

- Source of question: the Global Asthma Network Steering Group

Analysis of variables. Associations with symptoms will be undertaken.

Question 37.

Prenatal carpet exposure

Douwes et al[110] found an association between prenatal exposure to farm animals and prevalence of asthma symptoms. This association further supports the importance of early environmental exposure affecting the risk of subsequent development of asthma[115]. Carpets are large reservoirs for dust and associated microbial contaminants[116]. In particular, exposure to dust and microbial agents would be considerably higher in homes with carpets versus those that only have smooth floor covering. This question could therefore be used as a crude proxy of dust/microbial exposure.

- Source of question: Douwes J and the Global Asthma Network Steering Group

Analysis of variables. Associations with symptoms will be undertaken.

Question 38.

Premature birth

There is some evidence that premature birth may be associated with bronchial hyperresponsiveness[117] which can be explored with this question.

- Source of question: The Global Asthma Network Steering Group

Analysis of variables. Associations with symptoms will be undertaken.

Question 39.

Birth weight

It has been hypothesized that low birth weight is associated with increased risk of symptoms of asthma, allergic rhinoconjuncitivitis and atopic eczema. A potential association between low birth weight and an increased risk of chronic obstructive lung disease has been identified[118] and is worth further exploration.

- Source of ISAAC question: ISAAC Steering Committee

Mitchell et al, in ISAAC Phase Three[46] confirmed that low birth weight is a risk factor for symptoms of asthma, but not for rhinoconjunctivitis and that the findings for eczema are equivocal.

This question will remain unchanged for the Global Asthma Network.

Analysis of variables. Associations with symptoms will be identified

Questions 40, 40a, 40b, 41.

Breast feeding

It has been hypothesized that breast feeding in the first year of life is protective against the development of asthma, rhinoconjunctivitis and eczema. Introduction of other milk at less than 4 months of age was found by Oddy *et al*[119] to increase the risk of current wheeze 1.31 times (95% CI 1.05 - 1.64) when controlled for gestational age, sex, smoking in the household and childcare attendance in prospective birth cohort study of 2187 children in Western Australia. Rusconi *et al*[22], found that breast feeding for six or more months was associated with a decreased risk of transient early wheeze (OR 0.82 [95% CI 0.68 - 0.97]). Breast feeding was also associated with an increased risk of late-onset wheezing (OR 1.22 [95% CI 0.99 - 1.5]).

- Source of question 40 for ISAAC: Rusconi *et al*[120]*. "Was this child ever breastfed?"*

To extend the information from question 40 for the Global Asthma Network, the ISAAC Phase Two questions (questions 40a and b) have been included which define how long the child was breast fed and the timing of adding other foods or juices.

- Source of question 40a, 40b: ISAAC Phase Two[75]

Bjorksten et al in ISAAC Phase Three[38] did not find a consistent association between breast feeding in the first year of life and either a history or current symptoms of wheezing, rhinoconjunctivitis or eczema in 6/7 year old children, but a possible effect on severe symptoms of the latter two conditions.

A further question in the first year of life has been added to the Global Asthma Network questionnaire to define what type of milk did the child most often drink in the first year of life.

- Source of question 41: Douwes et al[110]

Analysis of variables. Associations with symptoms will be identified and a more detailed analysis will be undertaken.

Question 42.

Paracetamol use in the first 12 months of life

It has been hypothesized that frequent paracetamol use in the first 12 months of life is associated with an increased risk of symptoms of asthma, rhinoconjunctivitis and eczema. Newson *et al*[102] reported, in an ecological analyses, a positive association between paracetamol consumption and prevalence of asthma, rhinoconjunctivitis and eczema symptoms in children. They speculated that paracetamol use in the first 12 months of life may influence atopic disease by depleting glutathione in the airways and in immune cells.

- Source of question: ISAAC Steering Committee

Beasley et al, in ISAAC Phase Three[34] found that use of paracetamol in the first year of life and in later childhood, is associated with risk of asthma, rhinoconjunctivitis and eczema at age 6 to 7 years, suggesting to the authors that exposure to paracetamol might be a risk factor for the development of asthma in childhood.

This question will be used unchanged for the Global Asthma Network.

Analysis of variables. Associations with symptoms will be identified and data on paracetamol use in pregnancy will gather prenatal information.

Questions 43, 44, 44a, 44b.

Antibiotics

It has been hypothesized that antibiotic use in the first year of life is associated with an increased risk of symptoms of asthma, allergic rhinoconjunctivitis and atopic eczema.

Wickens *et al* demonstrated an associated risk between symptoms of asthma, allergic rhinoconjunctivitis and atopic ezcema and the use of antibiotics in early childhood[121].

Beasley et al, in ISAAC Phase Three[36] found an association between antibiotic use in the first year of life and current symptoms of asthma, rhinoconjunctivitis and eczema in children 6 and 7 years old. This question will remain unchanged for the Global Asthma Network.

- Source of questions 43; 44a & 44b: The Global Asthma Network Steering Group
- Source of question 44: ISAAC Steering Committee

Analysis of variables. Associations with symptoms will be identified and allow comparisons to be made with data from ISAAC Phase Three. Other questions on antibiotic use will allow further information to be gathered on frequency of chest infections and use of antibiotics.

Question 45.

Sheepskin

This question has the same hypothesis as question 37 and has been added to the Global Asthma Network questionnaire to determine if sleeping on a sheepskin as an infant is associated with symptom prevalence of asthma, rhinoconjunctivitis and/or eczema.

- Source of question 45: Douwes et al[110]

Analysis of variables. Associations with symptoms will be identified.

Questions 46 & 47.

Animal allergens

ISAAC hypothesized that exposure to animal allergens is associated with increased risk of symptoms of asthma, allergic rhinoconjunctivitis and atopic eczema.

Roost *et al*[103] concluded that current cat ownership represented a significant risk for sensitization to cat if cats were allowed indoors. They did, however suggest that childhood exposure to pets, including cats, might modulate immunologic mechanisms and reduce sensitization to cat in adulthood. Hesslemar *et al*[91] found that children exposed to cat or dog during the first year of life was associated with a lower symptom prevalence of allergic rhinitis and asthma in school children.

- Source of ISAAC questions: Hesselmar *et al*

Brunekreef et al, in ISAAC Phase Three[40] found that early life exposure to cats is a risk factor for symptoms of asthma, rhinoconjunctivitis and eczema in 6 and 7 year olds especially in less affluent countries.

These questions will remain unchanged for the Global Asthma Network.

Analysis of variables. Associations with symptoms will be identified. The questions allow identification of separate trigger and sensitisation effects and with data from ISAAC Phase Three.

Question 48.

Farm animals

That exposure to farm animals in pregnancy (question 35) or in the child's first year of life is protective against the development of asthma symptoms in children.

Douwes et al[110] in ISAAC Phase Two found that a combination of prenatal and early life exposure was most strongly associated with wheeze, asthma medication, asthma ever, hay fever and eczema. ISAAC used question 35 but not this current question. Question 48 has been included in the Global Asthma Network to test out this hypothesis.

Questions 49, 50 & 50a.

Wheezing in infancy

The multicentre International Study of Wheezing in Infants (EISL)[122-125] was developed to study the prevalence of recurrent wheezing and related risk factors in infants during the first year of life. The questions have been validated and found to be reliable and reproducible for obtaining data on wheezing in children below 36 months of age and for identifying those with probable asthma[126]. We have taken two questions on the first year of life from the EISL questions for the Global Asthma Network. The wording '(when he/she did not have a cold)' has been added to the end of question 50 to reinforce that question 50 is asking about breathing problems without the complication of cold symptoms.

- Source of questions: EISL[125]

Analysis of variables. Associations with symptoms will be identified.

Questions 51, 51a & 52, 52a.

Additional risk factors

These questions have been added to the Global Asthma Network questionnaire to test out other risk factors such as attendance at a child care facility, nursery school, or kindergarten or play centre. These questions have been derived from the German ISAAC Phase Two studies.

- Source of questions: ISAAC Phase Two modules[75]

Analysis of variables. Associations with symptoms will be identified.

Questions 53, 54, 55.

Exercise

ISAAC Phase Three hypothesized that regular exercise and physical fitness are protective against asthma. Possible aggravating factors: Being sedentary and lack of physical fitness. An assessment of physical activity in adolescents was undertaken by Aaron *et al*[88] but not undertaken in relationship to asthma and allergies.

- Source of questions 53 & 54 for ISAAC: Aaron *et al*[88] and Kohl *et al*[89]

Mitchell et al in Phase Three[43] found a positive association between physical activity and symptoms of asthma, rhinoconjunctivitis and eczema in adolescents but not in children[43, 90] and an increased risk of asthma symptoms with television viewing for five or more hours/day in children and adolescents.

- Source of question 55: The Global Asthma Network Steering Group

This question takes into account time spent on the computer and internet such as games, Facebook, Twitter and YouTube.

Analysis of variables. Combinations of these questions will allow classification of participants into groups based on their level of exercise and whether they are sedentary.

Question 56.

Pneumonia

This question has been adapted from the EISL study[125] and the wording 'had' changed to 'diagnosed' for the Global Asthma Network as previous experience in ISAAC shows that diagnosis is a more robust data source.

- Source of question: EISL[125]

Analysis of variables. Associations with a diagnosis of pneumonia or bronchopneumonia and symptoms will be identified in the first year of life.

Question 57.

Twin sibship

A new question on whether the participant is a twin has been added following the Global Asthma Network pilot study. This will avoid confusion when twins complete questions 58 and 59 on older/younger siblings.

- Source of question 57: The Global Asthma Network Steering Group

Questions 58 & 59.

Parity

ISAAC hypothesized that increased household size was associated with a decreased risk of symptoms of asthma, allergic rhinoconjunctivitis and atopic eczema[91]. A decrease in the cumulative incidence and prevalence of allergic rhinitis and the cumulative incidence of asthma with increasing number of siblings was reported by Hesselmar *et al*[91].

Aggravating factors could be small family size and early birth order.

- Source of ISAAC question: ISAAC Steering Committee

Strachan et al in ISAAC Phase Three[48] found new observations of greater symptom severity among children from larger families which seems to be a more consistent phenomenon worldwide, and deserves further exploration and explanation.

These questions will remain unchanged for the Global Asthma Network.

Analysis of variables. Associations with symptoms will be identified. The questions allow identification of separate effects of birth order and number of siblings and for the Global Asthma Network analysis will build on the information from ISAAC.

Questions 60, 60a & 61.

Migration

ISAAC hypothesized that migrants to a new country will adopt the prevalence of symptoms of asthma, allergic rhinoconjuncitivitis and atopic eczema of their new country over time[92-97].

There was conflicting evidence in the literature regarding the health of immigrants. Robertson *et al*[92] reported that symptoms of asthma, rhinoconjunctivitis and eczema were

more common in children born in Australia compared with children born in other countries but resident in Australia. Leung *et al*[95] reported that prevalence of hay fever and asthma increased with length of stay among Asian immigrants to Australia.

- Source of ISAAC questions 60 & 61: ISAAC Steering Committee

García-Marcos et al in ISAAC Phase Three[47] found that recent migration to high prevalence/affluent countries is associated with a lower prevalence of allergic diseases. The pre-migration environment might be protective, but this effect quickly decreases with increasing time in the host country.

These questions will be used unchanged in the Global Asthma Network. Use of these questions in the Global Asthma Network will allow an up to date observation of these findings. For the country of birth question, if the respondent answered 'NO' to question 60, the Global Asthma Network will include a question about what country the respondent was born in (question 60a).

- Source of question 60a: The Global Asthma Network Steering Group

Analysis of variables. Associations with symptoms will be identified. The questions allow assessment of the effect of time spent in the country and country of birth.

Questions 62, 63.

Additional risk factors

These questions have been added to the Global Asthma Network questionnaire to test out other risk factors such as floor covering in the child's bedroom or changes made to the home because of allergies. These questions have been derived from the German ISAAC Phase Two studies.

- Source of questions: ISAAC Phase Two modules[75]

Analysis of variables. Associations with symptoms will be identified.

Question 64.

Traffic

ISAAC hypothesized that respiratory irritants such as sulphur dioxide (SO_2) nitrogen oxides (NO_x) and particulates from diesel combustion cause local respiratory inflammation, increasing tissue contact with inhaled allergens and the likelihood of an allergic response[98, 99].

- Source of ISAAC question: Weiland *et al*[98]

Brunekreef et al in ISAAC Phase Three[37] found that higher exposure to self-reported truck traffic on the street of residence is associated with increased reports of symptoms of asthma, rhinitis and eczema in many locations in the world.

This question will remain unchanged for the Global Asthma Network, however '(not often)' will be added next to 'seldom' as an option as the Global Asthma Network pilot study found some participants did not understand the word 'seldom'.

Analysis of variables. Associations with symptoms will be further explored in the Global Asthma Network.

Question 65.

Diet

ISAAC Phase Three hypothesized that a plant based diet protected against asthma and allergies and a "Western" diet was positively associated with asthma and allergies.

Protective and aggravating factors found in the ISAAC Diet ecological analysis[100] included starch, cereals, rice, vegetables, fish, other seafood, fibre, fruit, nuts, olive oil (protective); *trans* fatty acids, fast foods (aggravating). Other foods considered included eggs, animal fats, milk, polyunsaturated fatty acids. Dietary surveys in the literature were lengthy questionnaires and either interviewer administered or adult self-completed, food frequency questionnaires either prospective using a diary or retrospective by recall (7 day, 3 months, 12 months) or "dietary history" which is a recalled food frequency questionnaire. No short diet questions suitable for inclusion in the ISAAC EQ were identified.

- Source of question: ISAAC Steering Committee

Ellwood et al, in ISAAC Phase Three[44] found a negative association between the intake of fast food and asthma, rhinitis and eczema symptoms and a positive association between the intake of fresh fruit and vegetables. These associations were also found by Nagel et al[29] and Wickens et al[101] in ISAAC Phase Two. The ISAAC Phase Three EQ questions will be used in the Global Asthma Network with some food items being separated (such as cooked and raw vegetables) and additional food items such as fizzy or soft drinks. Since we found the association with fast food we have been questioned about putting, for example, McDonald's with fish and chips, so we are adding a food type to separate this out. The fast food outlets that are common in most countries are McDonald's and Burger King which enables burgers to be studied as a separate group. Food types that have been separated out are: Cooked Vegetables; Raw Vegetables; Cereals (excluding bread); Bread; Olive Oil; Other dairy (include cheese and yoghurt); Sugar (include lollies/candies/sweets); Fast food/ burgers; Fast food excluding burgers; Fizzy or soft drinks (include local terminology).

Analysis of variables. Components will be analysed individually, some dietary items may be combined, such as a plant based diet, or a Mediterranean diet. Details of these combinations are yet to be developed.

Questions 66 & 67.

Allergens

ISAAC hypothesized that exposure to allergens is associated with increased risk of symptoms of asthma, allergic rhinoconjunctivitis and atopic eczema.

Roost *et al*[103] concluded that current cat ownership represented a significant risk for sensitization to cat if cats were allowed indoors. They do, however suggest that childhood exposure to pets, including cats, might modulate immunologic mechanisms and reduce sensitization to cat in adulthood.

Source of ISAAC questions: Roost *et al*[103]

Brunekreef et al, in ISAAC Phase Three[40] found that early life exposure to cats is a risk factor for symptoms of asthma, rhinoconjunctivitis and eczema in 6 and 7 year olds especially in less affluent countries.

These questions will remain unchanged for the Global Asthma Network.

Analysis of variables. Associations with symptoms will be identified. The questions allow identification of separate trigger and sensitisation effects and with data from ISAAC Phase Three.

Question 68.

Paracetamol

It has been hypothesized that frequent paracetamol use is associated with an increased risk of symptoms of asthma, allergic rhinoconjunctivitis and atopic eczema[102].

Newson *et al*[102] reported, in an ecological analyses, a positive association between paracetamol consumption and prevalence of asthma, allergic rhinoconjunctivitis and atopic eczema symptoms in children. They speculate that paracetamol may influence atopic disease by depleting glutathione in the airways and in immune cells.

- Source of questions: ISAAC Steering Committee

Beasley et al[35] in ISAAC Phase Three found that the use of paracetamol may represent an important risk factor for the development and/or maintenance of asthma, rhinoconjunctivitis and eczema in adolescent children. This was not explored in the 6/7 year old children. This question will remain unchanged for the Global Asthma Network.

Analysis of variables. Associations with symptoms will be identified.

10.3 Adult questions (about their own health)

The analysis of the asthma, rhinoconjunctivitis and eczema core and management questions will enable the Global Asthma Network to obtain internationally comparable estimates of the direction and magnitude of change in prevalence of symptoms. Comparisons of prevalence rates between different centres will be made using appropriate statistical methods. Crude rates can be compared by using contingency tables or logistic regression. Comparison of standardised rates or data that needs controlling for confounding will involve multivariate logistic regression. These analyses will also allow confirmation (or otherwise) of previously hypothesized associations and from the analysis of the ISAAC data.

10.3.1 Asthma questions

These questions are built on those used in the International Study of Asthma and Allergies in Childhood (ISAAC)[52] and in the European Community Respiratory Health Survey (ECRHS)[60, 127]. The ISAAC Phases One, Two and Three core questions (questions 2, 3, 4, 8 and 9 below) were piloted before Phase One[57] and published[49, 58, 59]. Most were based on questions used in previous respiratory epidemiological studies (prior to ISAAC) and include both sensitive and specific indicators of asthma[60]. Many of these questions have been used in ISAAC in 306 centres in 105 countries. They were translated from English into 52 languages in ways which were understood locally[50]. They have been used in key ISAAC asthma symptoms publications; Phase One[61, 62], Phase Two[33] and Phase Three[12, 16, 18].

The core questions used have been validated with bronchial hyper-responsiveness[3, 4, 22, 23, 63-70].

Due to experience in the presentation and analyses of the ISAAC asthma data[12, 16, 18, 33, 61, 62] and the identification of new information from the ISAAC data, this questionnaire was designed for the adults of the 6/7 and 13/14 year old participants. New questions have been added to this questionnaire about adult health.

Question 1.

This question is based on the ECRHS survey, prior to ISAAC, which includes sensitive and specific indicators of asthma[60, 127]

Question 2.

Limitation to a 12 month period reduces errors of recall[71] and is believed to be independent of month of completion[72]. This is considered to be the most useful question for assessing the prevalence of wheezing illness. This question was used successfully in ISAAC and it will be used unchanged for the Global Asthma Network.

Question 3 & 4.

These questions used in ISAAC offer alternative quantitative measures of the frequency and severity of wheezing. Problems with the concept of "attacks" and difficulty in quantifying the frequency of recurrent asthma lead to the inclusion of question 4 to identify and quantify persistent wheeze. These two questions were used to identify asthma severity in ISAAC, in a comparison of asthma symptom prevalence, mortality and hospital admissions which demonstrated correlations with all three parameters[73]. In that paper, the 12-month prevalence of moderate to severe wheezing comprised one or more of: (i) four or more attacks of wheeze; (ii) woken by wheeze on one or more nights per week or; (iii) wheezing severe enough to limit speech to only one or two words at a time, between breaths. These questions were used to define severe wheezing in ISAAC Phase Three[12] and will be used unchanged for the Global Asthma Network adult group.

Questions 5, 6 & 7.

Question 5 is used in the ECRHS[60, 127] screening questionnaire (Q1.1) preceded by Question 2 on this questionnaire (Have you had wheezing or whistling in the chest at any time in the past 12 months?). Question 6 is a modified question of Question 5 of the ECRHS II main questionnaire (shortness of breath). Question 7 is a modified question of Question 6 of ECRHS II main questionnaire (woken by an attack of coughing).

Question 8. This question was used in ISAAC Phases One, Two and Three, as there was a dearth of epidemiological information relating to acute, severe asthma, which is of direct relevance for international comparisons of hospital admissions and mortality statistics. This question filled this gap and has provided good data on asthma severity[12, 22, 61]. This question will used unchanged for the Global Asthma Network adults.

Question 9.

This is the first time in the questionnaire that 'asthma' is mentioned. The asthma label is affected by many factors such as awareness of asthma, medical training and experience, cultural and societal factors[74]. Occasionally asthma may be suggested in the absence of wheeze (on the basis of recurrent nocturnal cough etc). This question was used in all phases of ISAAC. It has not been clear whether the answer will represent the parent's own opinion, or is a label given by a doctor. In the Global Asthma Network the same question will be used, followed by a clarification question (Question 10).

Question 10.

As mentioned, this is an additional question for the Global Asthma Network to clarify that a doctor had confirmed that the participant had asthma for question 9.

Question 11.

This question, adapted from an ISAAC Phase Two question (Module 2.2 Asthma management. Question 3)[75], has been added to the Global Asthma Network surveillance questionnaire. Written asthma management plans are part of most asthma guidelines. Thus this question will provide new information on these plans and will be analysed with the prevalence and severity questions.

Question 12.

This is a new question set by the Global Asthma Network Steering Group for the Global Asthma Network to determine age of onset of asthma.

Question 13.

This question, 'Have you had an attack of asthma in the past 12 months?' was Question 5 in the ECHRS screening questionnaire.

Question 14, 14a, 15 & 15a.

Questions 14 and 15 on asthma management are essential to enable the Global Asthma Network to assess its target to decrease the proportion of symptomatic people with asthma not on inhaled corticosteroids. Question 14 is adapted from ISAAC Phase Two questions (Module 2.2 Asthma management. Questions 1 and 2)[75]. Question 15 is adapted from the ECRHS main questionnaire (Question 61). Questions 14 and 15 have had the wording '(when you did not have a cold)' added to the end of the question to reinforce that the questions are asking about breathing problems without the complication of cold symptoms.

Question 16 & 17.

These questions about urgent visits for asthma in the past 12 months are essential to enable the Global Asthma Network to assess its target to decrease unplanned visits for asthma. These questions have been adapted from an ISAAC Phase Two question (Module 2.2 Asthma management. Question 5)[75].

Question 18.

This question is about hospital admissions for asthma is essential to enable the Global Asthma Network to assess its target to decrease hospital admissions for asthma. This question is adapted from an ISAAC Phase Two question (Module 2.2 Asthma management. Question 6)[75]

Question 19 & 20.

Questions 19 and 20 are adapted from the ECRHS II main questionnaire. Question 19 is adapted from ECHRS questions 90 and 91 and question 20 is adapted from ECHRS question 29.

10.3.2 Rhinitis questions

Question 21.

This is the first time in the questionnaire that 'hay fever' is mentioned. This question was used in all phases of ISAAC. It has not been clear whether the answer will represent the adult's own opinion, or is a label given by a doctor. In the Global Asthma Network the same question will be used, followed by a clarification question (Question 22).

Question 22.

As mentioned, this is an additional question for the Global Asthma Network to clarify that a doctor had confirmed that the participant had hay fever for question 21.

10.3.3 Eczema questions

Question 23.

This is the first time in the questionnaire that 'eczema' is mentioned. This question was used in all phases of ISAAC. It has not been clear whether the answer will represent the adult's own opinion, or is a label given by a doctor. In the Global Asthma Network the same question will be used, followed by a clarification question (Question 24).

Question 24.

As mentioned, this is an additional question for the Global Asthma Network to clarify that a doctor had confirmed that the participant had eczema for question 23.

10.3.4 Environmental questions

(see pages 85 & 96 for analyses)

Question 25.

Socio economic status

It has been hypothesized that increased socio-economic status (SES) is associated with increased risk of symptoms of asthma.

Studies of the relationship between SES and health have shown that SES is multidimensional, incorporating elements of occupational characteristics, education, income, wealth and residential characteristics.

- Source of ISAAC question: Durkin et al [128]

This question was included in the ISAAC 6/7 year EQ and has been removed from that age group questionnaire for the Global Asthma Network and transferred to the Global Asthma Network adult questionnaire

Analysis of variables. Associations with symptoms will be identified.

Questions 26, 27 & 28.

Moisture in the home

It has been hypothesized that moisture/mould in the home environment is associated with increased risk of asthma.

These questions, taken from ISAAC Phase Two[75], and have been adapted and expanded for the Global Asthma Network adult questionnaire.

Weinmayr et al[31] found in ISAAC Phase Two a consistent association of dampness with respiratory and other symptoms was found in both affluent and non-affluent countries, among both atopic and non-atopic children.

- Source of question: ISAAC Phase Two

Analysis of variables. Associations with symptoms will be identified.

Questions 29-33.

Cooking

It has been hypothesized that gas cooking is associated with increased risk of symptoms of asthma[129].

Gas cooking has shown mixed effect in epidemiological studies. Kerkhof *et al*[129] showed increased bronchial responsiveness among persons with high total IgE levels who use gas for cooking suggesting that atopic subjects are sensitive to adverse effects of gas cooking on respiratory health. However, Moran *et al*[130] in their study concluded that the use of gas for cooking was unlikely to be a major influence on respiratory morbidity in young adults.

- Source of ISAAC Phase Three questions: ISAAC Steering Committee
- Source of ISAAC Phase Two questions: ISAAC Phase Two Steering Group
- Source of the Global Asthma Network Adult questions: Adapted from ISAAC Phases One and Two
- Source of the Global Asthma Network question 30: WHO. Tuberculosis prevalence surveys: a handbook. 2011[131]

Wong et al[132] in ISAAC Phase Three found the use of open fires for cooking is associated with an increased risk of symptoms of asthma in children. Because a large percentage of the world's population uses open fires for cooking, this method of cooking might be an important risk factor if the association is proven to be causal. Worldwide, respiratory health effects account for nearly a half of the overall deaths and disabilities from household air pollution[133].

Analysis of variables. Associations in the symptoms will be identified. Combinations of the variables may be used to identify severe exposure to gas combustion products.

Questions 34-36.

Heating

- Source of question 34: ISAAC Phase Three EQ
- Source of the Global Asthma Network Question 35 & 36: WHO. Tuberculosis prevalence surveys: a handbook. 2011[131]

Question 37.

Diet

ISAAC Phase Three hypothesized that a plant based diet protected against asthma and allergies and a "Western" diet was positively associated with asthma and allergies. Protective and aggravating factors found in the ISAAC Diet ecological analysis[100] included starch cereals, rice, vegetables, fish, other seafood, fibre, fruit, nuts, olive oil (protective); *trans* fatty acids, fast foods (aggravating). Other foods considered included, eggs, animal fats, milk, polyunsaturated fatty acids. Dietary surveys in the literature were lengthy questionnaires and either interviewer administered or adult self-completed, food frequency

questionnaires either prospective using a diary or retrospective by recall (7 day, 3 months, 12 months) or “dietary history” which is a recalled food frequency questionnaire. No short diet questions suitable for inclusion in the ISAAC EQ were identified.

- Source of question: ISAAC Steering Committee

Ellwood et al[44], in ISAAC Phase Three found a negative association between the intake of fast food and asthma, rhinitis and eczema symptoms and a positive association between the intake of fresh fruit and vegetables. These associations were also found by Nagel et al[29] and Wickens et al[101] in ISAAC Phase Two. The ISAAC Phase Three EQ questions will be used in the Global Asthma Network with some food items being separated (such as cooked and raw vegetables) and additional food items such as fizzy or soft drinks. Since we found the association with fast food we have been questioned about putting, for example, McDonald’s with fish and chips, so we are adding a food type to separate this out. The fast food outlets that are common in most countries are McDonald’s and Burger King which enables burgers to be studied as a separate group. Food types that have been separated out are: Cooked Vegetables; Raw Vegetables; Cereals (excluding bread); Bread; Olive Oil; Other dairy (include cheese and yoghurt); Sugar (include lollies/candies/sweets); Fast food/ burgers; Fast food excluding burgers; Fizzy or soft drinks (include local terminology).

Analysis of variables. Components will be analysed individually, some dietary items may be combined, such as a plant based diet, or a Mediterranean diet. Details of these combinations are yet to be developed.

Questions 38-41.

Smoking

It has been hypothesized that exposure to tobacco smoke in early life is associated with increased risk of symptoms of asthma, rhinoconjunctivitis and eczema. That exposure to tobacco smoke is a trigger for asthma attacks for asthmatics[104]. In the ISAAC Phase Three EQ, the questions from Jarvis[104] (1999) were used. However in the Global Asthma Network, updated questions (2012) from a WHO survey, the Global Adult Tobacco survey, will be used.

- Source of questions: The Global Adult Tobacco survey 2012[105]

Analysis of variables. Associations with symptoms will be identified.

Question 42.

Water pipe smoking

It has been hypothesized that water pipe smoking is associated with increased risk of symptoms of asthma.

- Source of question: Adapted from Mohammad Y et al. Respiratory effects in children from passive smoke of cigarettes and narghile: ISAAC Phase Three in Syria[106]

11. Ethics Committee Approval

Participating centres will need to obtain ethics approval from local Ethics Committees prior to the start of the study and document this on the Centre Report. If a centre does not have a local Ethics Committee, then approval must be sought from some other source such as an Education Board, or a local health authority and this information must also be documented on the Centre Report. If ethics approval is not required this must also be documented.

12. Expression of Interest

The Expression of Interest form is provided so that the GAN Global Centre can compile a data base of interested collaborators. This ensures that each collaborator receives up to date information about the Global Asthma Network as this is produced, such as Newsletters. This does not commit collaborators to participate in any the Global Asthma Network activities, as the Registration Document is used for this purpose.

In order to assist our forward planning, it would be most helpful for new centres to fax or scan and email, the form on the next page, to the GAN Global Centre, indicating your intention to participate. We are not seeking a firm decision at this stage, simply a declaration of interest. However, it would be helpful to know which centres are definitely **not** interested, as well as those which are.

At the time of publication (August 2015) there were Expression of Interest forms at the GAN Global Centre from 300 centres from 125 countries. We encourage further participation, particularly from the countries listed below.

Afghanistan
American Samoa
Andorra
Anguilla
Antigua and Barbuda
Aruba
Azerbaijan
Bahrain
Barbados
Belize
Bermuda
Bhutan
Botswana
British Virgin Islands
Brunei
Burundi
Cambodia
Cape Verde
Cayman Islands
Central African Republic
Chad
Comoros
Congo
Cook Islands
Côte d'Ivoire
Cuba
Djibouti
Dominica
Dominican Republic
Equatorial Guinea
Eritrea
Estonia
French Guiana
Gabon
Gibraltar
Greenland
Guadeloupe
Guam
Guatemala
Guinea
Guinea-Bissau
Guyana
Haiti
Iceland
Iraq
Isle of Man
Kazakhstan
Kiribati
Lebanon
Lesotho
Liberia
Liechtenstein
Lithuania
Luxembourg
Macao
Madagascar
Marshall Islands
Martinique
Mauritania
Mauritius
Mayotte
Micronesia
Moldova
Monaco
Montenegro
Morocco
Myanmar
Namibia
Nauru
Nepal
Netherlands Antilles
Niger
Northern Mariana Islands
Papua New Guinea
Paraguay
Puerto Rico
Qatar
Rwanda
San Marino
São Tomé and Principe
Seychelles
Slovak Republic
Somalia
South Sudan
St. Kitts and Nevis
St. Lucia
St. Vincent and the Grenadines
Suriname
Swaziland
Switzerland
Tajikistan
Tanzania
Timor-Leste
Turkmenistan
Turks and Caicos Islands
U.S. Virgin Islands
Uzbekistan
Venezuela
Wallis and Futuna Islands

The Global Asthma Network Steering Group

Global Asthma Network – Expression of Interest form

Note: Please complete and email, fax or complete online (http://www.globalasthmanetwork.org/surveillance/expression.php) the following form only if you have not already done so.

My centre is interested in the Global Asthma Network	Yes	No	Don't know

Centre name: (not an institution)	
Country:	
Lead Investigator Name: (one per centre)	
Designation: (Professor, Dr (PhD), Dr (Medical), Medical Professional, Researcher, Other eg Mr) Please list all that are relevant to your position.	
Institution: (University/Hospital etc)	
Phone:	
Fax:	
Email:	
Postal Address: (Street address for courier deliveries)	
Comments:	

Date:_____

Name of person completing this form. _____

Signature_____

Thank you very much, your reply will be acknowledged.

Philippa Ellwood (info@globalasthmanetwork.org), for the Global Asthma Network

or by fax 64 9 3737602 or online at
http://www.globalasthmanetwork.org/surveillance/expression.php

13. Global Asthma Network Registration Document

Phase 1 Global Surveillance: Prevalence, Severity, Management and Risk Factors

Instructions

A. Please complete the Global Asthma Network Registration Document to register as a Phase 1 Global Asthma Network Centre

B. Once completed, please retain a copy for your records and send a copy to the GAN Global Centre by email *info@globalasthmanetwork.org*, fax +6493737602, or complete on line at http://www.globalasthmanetwork.org/surveillance/register.php

Global Asthma Network Region:

_____

Country Name _____	**Country Number** _____
Centre Name _____	**Centre Number** _____
1. Date of completion: _____	

2. Principal Investigator details: (These will be checked against your details already entered into the Global Asthma Network data base to ensure we have the correct information)

Name: _____

Position: _____	Institution: _____

Postal Address: _____ _____ _____	Telephone: Fax: E-mail:

3. Other main collaborators (Names, email addresses and role)

_____
_____
_____
_____
_____

Please state the name of the person and email address, that the GAN Global Centre will be communicating with if different from the PI.

4. Basic details of the planned Global Asthma Network study

a) Questionnaire for 13/14 year olds (compulsory) Yes ☐ No ☐
(Compulsory questions are 1-30)

b) Video questionnaire for 13/14 year olds Yes ☐ No ☐
[International version)] (recommended)

c) ADULT questionnaire for parents of 13/14 year olds Yes ☐ No ☐
(recommended. If used, compulsory questions are 1-24)

d) Questionnaire 6/7 year olds (parental Completion) Yes ☐ No ☐
(recommended. If used, compulsory questions are 1-33)

e) ADULT questionnaire for parents of 6/7 year olds Yes ☐ No ☐
(recommended. If used, compulsory questions are 1-24)

f) Are you planning to add other questions to these questionnaires? Yes ☐ No ☐

If YES, please provide brief details and send a copy of the questionnaires to the GAN Global Centre *info@globalasthmanetwork.org*.

5. What language/s will be used for your questionnaires

English Yes ☐ No ☐

Other/s
(Please specify) ☐

Please follow the translation guidelines from the link below and send a copy of your translation and back translation to English to p.ellwood@auckland.ac.nz

http://www.globalasthmanetwork.org/surveillance/manual/translation.php

6. Proposed starting date for your study ☐

Start date unknown ☐

7. Data sharing

I agree that my data can be made available on the Global Asthma Network website following completion of the data analysis for the global publications.

Yes ☐ No ☐

8. Declaration

I agree to undertake Global Asthma Network study in the manner described in the Global Asthma Network Manual.

Name (print):	
Signature: _____	Date: _____

14. Centre Report

(please view an example of a centre report on pages 190-200)

A personalised Centre Report will be sent to you when you register your centre with the GAN Global Centre. This is an important document, designed to assist each centre to accurately document their methodology. The following notes may be of assistance. We encourage you to contact the GAN Global Centre if there is anything that is unclear.

Questions

1.3	If not previously sent in ISAAC, a detailed map of the area or city, clearly showing the geographical boundaries of your study area is required. Ideally this will be a vector or shape file compatible with Geographic Information Software such as ArcGIS (available from http://www.**arcgis**.com/). If this is not possible, a hand drawn and scanned map drawn on a commercial street map or printout of google maps or similar will be acceptable. This should be sent to the GAN Global Centre with the completed centre report.
1.4 – 1.8	It is important to document any reason why schools are excluded and the reasons why collaborators reject schools after they have been selected. Some schools are excluded before the sampling frame has been set and some schools are rejected by researchers after they have agreed to take part.
1.9	This question has 2 parts. Part A asks for the **total** number of schools in the sampling frame that was chosen and Part B asks for the **total** number of children for the selected age group that were in these schools.
2.1	Centres may use different methods of selecting children within schools: 'grade/level/year' where the classes with most children in the age group are selected to participate; 'age group' where only children in the age group, regardless of grade/level/year are selected to participate; and 'other' methods, which may include elements of these two methods. If 'other' is selected, please describe.
3.1 – 3.4	Double entry of 10% of data is expected to minimise data entry errors. If some data has not been double entered a detailed explanation of method employed and quality checks are necessary.
4.1 – 4.8	Collaborators are encouraged to check the demographic details on the questionnaires and amend if necessary. For example a pupil may have inserted the wrong birth date - this can be corrected using the information obtained from the school. **All changes must be documented (see page 183)**. It is not permissible to change any other data. All data must be entered into the computer as given in the questionnaire and original data submitted to the GAN Global Centre.
5.1 – 5.6	The answers to these questions allow us to calculate the response rate and the participation rate of the schools and pupils. The answers to questions 5.5 and 5.6 will add up to the answer given to question 5.2.
6.1 – 6.13	All translations of the English language questionnaire should have a uniform approach (see page 124). If centres use a translation already developed, the Global Centre would like to know.

Thank you for reading this document and completing this report.

Philippa Ellwood Eamon Ellwood and Innes Asher - Global Asthma Network Global Centre.
Email: info@globalasthmanetwork.org

15. Model for Approaching Schools and Additional Information for Fieldwork

What follows is one example of an approach to schools. Centres must proceed according to their local rules. A final goal should be a high participation rate.

Once local Ethics Committee approval (or other approval) has been obtained, each school Principal will be approached to obtain their cooperation. It may be helpful to offer to meet the staff to also explain the study to them. An informal meeting at the morning break can be a good way to gain acceptance from teaching staff. The data collection can then commence at a time to suit the school. It is very important that asthma, allergies, rhinitis and eczema are not explicitly mentioned to school staff, pupils and parents in relationship to the study.

It is also **very important** that any logo used on the questionnaire, or letters to schools, parents does not mention asthma, rhinitis and eczema. For example, the Global Asthma Network logo must not be used on any stationary sent to the school. Wording such as 'breathing, nose and skin problems' is acceptable (see page 185 for an example).

Height and weight measurements (strongly recommended) (see pages 187-189 for the protocol for measuring height and weight).

- **13/14 year olds**

  If height and weight measurements are taken at the completion of the survey, this will enable the demographic data to be quickly checked for errors or omissions.

- **6/7 year olds**

  The measurements should be taken when the completed questionnaire is returned to school. The logistics of undertaking this should be discussed with the school.

Additional Fieldwork Information

- Translations must follow instructions on page 124 of the manual and a copy sent to the GAN Global Centre with a back translation to English.
- Not every centre will wish to use every question – some centres will use every question and some centres may choose to include only some of the non-compulsory questions.
    - 13-14 years: Questions 1-30 are compulsory; Q31-48 strongly recommended.
    - 6-7 years: Questions 1-33 are compulsory (if this age group included); Q34-68 strongly recommended.
    - Adults: Questions 1-24 are compulsory (if this age group included); Q25-42 strongly recommended.

NOTE: Please refer to the data and coding section 19.2.2 on page 127 for instructions on how to deal with data entry when excluding some questions.

15.1 Sample information letter for schools (13/14 year old age group)

Dear Chairman of Board of Trustees/Principal/Teachers

re: (*your country of study*) Health Survey

We are inviting some children at your school and their parents/guardians to take part in an important international study. Many schools in (*your centre name*) have taken part in a previous study similar to this, and by using random sampling techniques, your school has been selected. We wish to involve children aged 13 and 14 years to understand more about the increasing problem of respiratory symptoms and the environment, in children of this age group.

This survey is being carried out in other areas of (*your country name*) and many overseas countries (more than 100 countries are expected to participate). The (*your centre name*) survey is being funded by (*your funding source*).

For your school, it would mean:

1. Identifying classes in which 13/14 year olds are found and making available a copy of the class lists with date of birth and gender (confidential information for research purposes only which is permitted by the (*your country name*) (*your Health Information Privacy Code if applicable*).
2. One of our research team would bring information letters (copies enclosed) to be distributed to the selected children to be taken home.
3. We would return a week later to ask these children to complete written questionnaires (copy enclosed) and to watch a 6 minute video about exercise and breathing. We would require about 40 minutes in total. The participants will then be asked to take questionnaires home for parent/guardian completion about their own health.
4. We would come back about a week later, with the questionnaires and video and ask any children who were absent on the first occasion to complete the survey and to collect the adult questionnaires.

One of our research team will be in contact with you soon to discuss this survey further. In the meantime if there is any further information you require about the survey, please do not hesitate to contact me (*name of field worker*) by ringing xxx xxxx.

This survey has the approval of the (*name of your local ethics committee*), the Chair of which you can contact directly with any enquiries, phone xxx xxxx.

Yours sincerely

NAME(S) and ADDRESS(ES)

Ethical Approval statement from your ethics committee: For example

APPROVED BY (name of your local ethics committee) on DATE for a period of three years from DATE. Reference XXXXX

15.2 Sample information letter for schools (6/7 year old age group)

Dear Chairman of Board of Trustees/Principal/Teachers

re: (*your country of study*) Health Survey

We are inviting some children at your school and their parents/guardians to take part in an important international study. Many schools in (*your centre name*) have taken part in a previous study similar to this, and by using random sampling techniques, your school has been selected. We wish to involve parents of children aged 6 to 7 years to understand more about the increasing problem of respiratory symptoms and the environment in children of this age group.

This survey is being carried out in other areas of (*your country name*) and many overseas countries (more than 100 countries are expected to participate). The (*your centre name*) survey is being funded by (*your funding source*).

For your school, it would mean:

1. Identifying classes in which 6/7 year olds are found and making available a copy of the class lists with date of birth and gender (confidential information for research purposes only which is permitted by the (*your country name*) (*your Health Information Privacy Code if applicable*).
2. One of our research team will then come and name each questionnaire and distribute them by class to be taken home. An information letter will be included (copies included).
3. The parents/guardians of the children will be asked to complete the questionnaires and return them to your school. These will be collected from your school by the researcher.
4. We would follow-up any non-returned forms.

One of our research team will be in contact with you soon to discuss this survey further. In the meantime if there is any further information you require about the survey, please do not hesitate to contact me (*name of field worker*) on xxx xxxx.

This survey has the approval of (*name of your local ethics committee)*, the Chair of which you can contact directly with any enquiries, phone xxx xxx.

Yours sincerely

NAME(S) and ADDRESS(ES)

Ethical Approval statement from your ethics committee: For example

APPROVED BY (name of your local ethics committee) on DATE for a period of three years from DATE. Reference XXXXX

16. Model for Approaching Parents

An information sheet will be sent home with each participant (adolescent or child), giving details about the study. The information sheet will be translated into the most common languages used by families of eligible children by local collaborating centres.

13/14 year olds: The information letter will be sent home with the adolescent. 13/14 year olds will complete the written and video questionnaires at school and take home Adult questionnaires for parental/guardian completion. However, centres should follow requirements of their local Ethics Committee. It is vital that the adolescent and adult questionnaires are able to be linked in some way See the data coding section on page 167 and “identifying boxes for office use only” on page 183.

6/7 year olds: The information letter will be sent home with the questionnaires (child and Adult). These are completed at home and returned to school within a set time frame. However, centres should follow requirements of their local Ethics Committee. It is vital that the child and adult questionnaires are able to be linked in some way See the data coding section on page 167 and “identifying boxes for office use only” on page 183.

16.1 Sample information sheet for parents/guardians of 13/14 year old adolescents

Dear Parents/Guardians

We are inviting you and the class that your son/daughter is in, to take part in an important survey about child health. This has the approval of your school, and we would appreciate your assistance. Many schools in (*your centre name*) are taking part in the study and all the children in his/her class are being asked to take part. Your son/daughter will be asked to complete a questionnaire in class and then watch a 6 minute video about various forms of exercise and breathing. They will be asked to complete 5 short questions on what they have seen while the video is running. This process will take up to 40 minutes of class time.

We would also appreciate your participation by completing the Adult questionnaires that your son/daughter brings home. If there are two parents/guardians living at home with your son/daughter we would appreciate each of you completing a questionnaire. If there is one parent/guardian at home we only expect one copy of the questionnaire to be completed and returned to school. If more than one child in your family has bought home Adult questionnaires for completion, we would be most grateful if you could please return the completed questionnaires together WITH the blank copies back to your child's school with ONE child as we need both the completed copies and blank copies for our records. Thank you.

This survey is being carried out in randomly selected schools in other (*your country name*) centres and many overseas countries (more than 100 countries are expected to participate). The (*your centre name*) survey is funded by (*your funding source*).

We ask you to consider this information sheet, and if you agree to your son/daughter taking part in the survey, then you do not need to take any action. Your questionnaires and your child's questionnaire will be treated confidentially; only a code number will be entered in the computer. The questionnaires will be kept in a locked filing computer for 6 years in accordance with local Ethics Committee requirements.

If you or your child does not wish to participate, please telephone the number listed at the bottom of this page.

This survey has the approval of your child's school's Board of Trustees, Principal and Teachers. It also has the approval of the (*your ethics committee name*) Human Subjects Ethics Committee, the Chair of which you can contact directly with any enquiries, phone xxx xxxx.

If there is any further information you require about the study, please contact one of us.

Yours sincerely

NAME(S) CONTACT NUMBERS AND ADDRESS

Ethical Approval statement from ***your*** ethics committee: For example

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN SUBJECTS ETHICS COMMITTEE on DATE for a period of three years from DATE. Reference XXXX

16.2 Sample information sheet for parents/guardians of 6/7 year old children

Dear Parents/Guardians

We are inviting you and your child to take part in an important survey about child health with the approval of your school, and would appreciate your assistance. Many schools in (*your centre name*) are taking part in the study and all classmates of your child are being asked to take part. For each child, a parent/guardian is being asked to complete a questionnaire about their 6/7 year old. We are also asking parents/guardians to complete a questionnaire about their own health (Adult questionnaire).

If more than one child in your family has bought home Adult questionnaires for completion, we would be most grateful if you could please return the completed questionnaires together WITH the blank copies back to your child's school with ONE child as we need both the completed copies and blank copies for our records.

This survey is being carried out in randomly selected schools in other (*your country name*) centres and also in many overseas countries (more than 100 countries are expected to participate). The (*your centre name*) survey is funded by (*your funding source*).

We ask you to consider this information sheet, and if you agree to take part in the survey, then we would appreciate you completing and returning the attached questionnaires. There is a questionnaire about the health of your child and we would appreciate it if one parent/guardian could complete this. In regard to the enclosed Adult questionnaires, if there are two parents/guardians living with your child we would appreciate both of you completing a questionnaire about your own health. If there is one parent/guardian at home we expect one copy of the questionnaire to be completed and returned to school. You and your child's questionnaires will be treated confidentially; only a code number will be entered in the computer. The questionnaires will be kept in a locked filing computer for 6 years in accordance with local Ethics Committee requirements.

This survey has the approval of your child's school's Board of Trustees, Principal and Teachers. It also has the approval of the (*your ethics committee name*) Human Subjects Ethics Committee.

If there is any further information you require about the study, please contact one of us.

Yours sincerely

NAME(S)
CONTACT NUMBERS AND ADDRESS

Ethical Approval statement from ***your*** ethics committee: For example

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN SUBJECTS ETHICS

COMMITTEE on DATE for a period of three years from DATE. Reference XXXX

17. Field Work

(More detailed guidelines for fieldworkers are included for those centres that wish to have extra detail and can be found on Page 183-213)

Research staff and field workers **SHOULD NOT** use the terms: asthma, allergy, rhinitis or eczema when:

- advertising the study
- presenting written material about the study
- speaking about the study to school staff, parents, children
- speaking to the 13/14 year old children in the classroom

The phrases 'breathing survey' or 'a health survey' are acceptable terms to use or 'This is a survey about health and/or the environment'.

The title of the questionnaires must not include the words asthma, allergy, rhinitis, eczema or Global Asthma Network. Coding instructions for data entry should not appear on the questionnaires delivered to the children or their parents, although coding boxes 'for office use only' are recommended and questionnaires must be linked (see example page 183).

13/14 year olds

An information letter will be sent home for the adolescent group. The adolescent group will complete the written and video questionnaire in class at school. Each session will comprise verbal instructions on the questionnaires before handing these out, and instructions to leave the video questions until the video is shown.

The written questions concerning the scenes in the video are completed by the adolescents while the video is being shown. The video questionnaire must always be shown after the written questionnaire. In presenting the video, there must be adequate equipment with sufficient visual and audio quality to ensure all participants see it well and hear it correctly. Height and weight measurements (strongly recommended) can be taken (see pages 30 and 187-189) as the questionnaires are handed in and the demographic data can be checked.

If questionnaires have clearly not been completed in a comprehensible fashion, then they could be re-presented to the person who originally completed them for one further attempt. The research worker should not give advice about the responses that might be given (see pages 201-205 for guidelines for fielding questions). Once the questionnaire is completed, **it must not be changed by research workers under any circumstances** (except for incorrect demographic details which may be corrected with the help of pupil, school staff or school records). Following completion of the written & video (if used) questionnaires the adolescents will then be asked to take questionnaires home for parental completion.

6/7 year olds

Once eligible 6/7 year olds are identified, the field workers will send the questionnaires to the parent/guardian either through the school or by post or by email. The parent/guardian will be asked to return the questionnaires by a mechanism which incurs no financial cost to them. Some centres may prefer to have an online system of questionnaire completion. Height and weight measurements (strongly recommended) are taken at school when the questionnaires are returned (see pages 45 and 187-189).

18. Guidelines for the Translation of Questionnaires

The following Steps are recommended for the translations of questionnaires

1. The questionnaires are translated by one or more persons who are bilingual and familiar with the area in which the questionnaire will be used.

2. In order to find the most appropriate translation for difficult terms, e.g.: “wheezing” or “whistling in the chest”, it is proposed to:

   (a) Ask local doctors about local words to describe these terms.
   (b) Ask children with asthma and parents of children with asthma how they would describe the breathing during an asthma episode.
   (c) Show the video and ask children with asthma and parents of children with asthma how they would describe the breathing of the children and adolescents in the video.
   (d) Submit a list of possible descriptors to children with asthma and parents of children with asthma and ask them to indicate, e.g. using a rating system, which description(s) they favour best.

3. The most appropriate translation should be agreed upon among a group of national experts on the basis of 2(a) – 2(d). The national questionnaires should allow for differences in the wording of questions according to the local use of language.

4. The questionnaires are required to be translated back into English by an independent translator. Modifications should be made if necessary.

5. The questionnaires should be tested in populations that are representative of the study population. Modifications should be made if necessary.

6. Steps 2 to 5 are repeated if necessary.

Comment
The translation of questionnaires is a key issue for the validity of comparisons involving non-English speaking countries. It is recognised however, that the Steps 2(c) and 2(d) may be too costly for some countries or centres and that those countries or centres may decide to leave them out. The translated questionnaires must have the same structure and logic as the original. In addition, we draw the attention to the need that the translations must be understood by the children and parents. Thus, the translations should apply the language which is used by the children and parents themselves and experience from Germany shows that it may well differ from the terminology of medical professionals[134].

NOTE
The language used, should be pre-coded onto the questionnaire prior to printing the questionnaires. Most languages have been listed on page 186 of this Manual and coded. Please use the codes provided. If your language is not listed, please contact the Global Centre for a code number to be issued (contact details pages 214-215).

An example of how these codes can be inserted into the questionnaire is shown on page 183 as well as more details on the use of the ‘office use only’ boxes. If then adult questionnaires are used, it is vital that they can be linked to the corresponding child or adolescent questionnaire.

19. Coding and Data Transfer Section

19.1 Introduction

The purpose of this section is to describe in detail how the Global Asthma Network data should be formatted and structured when it is sent to the GAN Global Centre. Once the data has been received and acknowledged it will be then sent to one of two data centres – London, UK (Neil Pearce Neil.pearce@lshtm.ac.uk) for the majority of centres or Murcia, Spain (Luis García Marcos) for Spanish and Portuguese speaking centres. (contact details are on page 215).

The preferred method of data transfer is by email or file upload via the internet. If this is not possible, the data may be sent via a flash drive or CD-ROM, but must be sent as electronic files, not on paper forms. It is the responsibility of the principal investigator to arrange for the data to be entered onto a computer. The GAN Global Centre does not have the resources to carry out this task for any centre.

As noted in section 6.1.3, page 28, at least 10% of data should be double entered to gauge the number of mistakes being made with data entry and if a large number of errors are encountered, the full dataset should be double entered. Double entry of data, as the name suggests, involves entering the data once, followed by a second entry of the data which is compared with the first version to identify any keystroke errors. Some data entry computer software will allow the user to compare the first and second versions of the data as the operator is entering the data for the second time. Any discrepancies between the first and second versions can immediately be resolved using the paper questionnaire as a reference. Otherwise, data will need to be entered into two datasets, and then compared manually.

For basic data entry, Epi-Info is a free epidemiological software package distributed by the Center for Disease Control and Prevention, and may be downloaded from http://www.cdc.gov/epiinfo/. Since 2000, **Epi-Info does not compare the two versions of the data automatically** however, it does include a number of useful statistical functions. If centres wish to use an Epi Info data entry package, the Epi Info package can be obtained from the GAN Global Centre or the Global Asthma Network website (www.globalasthmanetwork.org).

Some centres may wish to use questionnaire scanning software such as OMR (Optical Mark Recognition) for data entry. This is acceptable, but if so, procedures to deal with data entry errors must be documented and sent to the GAN Global Centre. The scanning software should also scan and keep an image of the questionnaire so that it can be checked when an error appears and manually corrected if necessary. The questionnaires may need specific preparations to be suitable for being read by a scanner. A copy of any paper questionnaire used must be provided to the GAN Global Centre. The name of the software and its manufacturer, and documentation describing the software should be sent to the GAN Global Centre, and/or a website address for the documentation. The software should have the ability to export the data set as a .CSV file. Adult and student questionnaires must be linked.

The minimum requirements for questionnaire scanning software are:

1. A questionnaire layout which facilitates the scanning procedure: e.g. a large margin separating the text from the marking boxes

2. High quality BLACK printing of questionnaires, to avoid movements of the text, even of half a millimetre.

3. A software package which detects any marking errors and allows for comparisons to the scanned questionnaire and manual error correction.

Please retain the paper questionnaires in secure storage, for the time specified by your Ethics Committee, following data entry. The questionnaires must be available during the data checking process for checking against the computer record. In some countries it may be a condition of ethical approval for the study that the paper questionnaires are stored for a specific period of time.

The answers to the questions provided by the student or parent should be entered onto the computer exactly as they responded. No corrections should be made to remove apparent inconsistencies between the responses to different questions. Corrections may be made to errors in the demographic information if the correct information is available from another source (i.e. the school). However, all corrections to demographic information should be made to a copy of the original data file(s). Please retain copies of the original and any amended versions of the data file(s) for a minimum period of 3 years as a safeguard against accidental loss of the data (or for the time specified by your Ethics Committee).

The data format described in this section applies to the data sent to the GAN Global Centre, not necessarily to the data held locally. The structure required of the data when being sent to the GAN Global Centre certainly can be used as the local data format but it is not necessary to do so. The locally held data must be able to be transcribed to the format given in this manual. To do this each of the responses for each question required to be sent to the GAN Global Centre must have a unique code in the local data set so that they can be translated to the appropriate GAN Global Centre code.

Data for questions that have been added to the core questionnaires to address local research hypotheses should not be sent to the GAN Global Centre. Only the data for questions from the questionnaires included in this manual should be sent to the GAN Global Centre.

If the data is sent to the GAN Global Centre on flash drive or CD-ROM, the disks need to be identified clearly. This identification is achieved using a label attached to the media and a file on the disk containing identifying information. This file is known as the DATA HEADER. The DATA HEADER file must also be included if the data is sent via email or internet upload. The structure and content of the DATA HEADER is described in detail below.

The data for a centre is sent as one or more DATA files and these files also need to be clearly identified. Each DATA file is identified by a one-line record at the beginning that gives information about that file. This single record at the beginning of each DATA file is called the FORM HEADER. The structure and content of the FORM HEADER is described in detail below.

As an additional check, each data record has identification information contained within it. This is the information on form type, form version, country and centre of survey. There is clearly considerable repetition involved in all this identification material but it is absolutely essential that the data received by the GAN Global Centre is unambiguous and the repetition allows checks to be made.

19.2 Data structure

19.2.1 Data files

A standard form for each age group will be used to format the data sent to the GAN Global Centre. The GAN Global Centre has defined only these forms for formatting data. If any centre would prefer to send data in another format they should contact the GAN Global Centre before formatting or sending any data (info@globalasthmanetwork.org).

The GAN Global Centre prefers that all data files are saved in plain text format using the structure described in this section. However, some centres may not be familiar with text format data files (also known as 'flat' files) and may prefer to send the data in a spreadsheet or database file format such as Microsoft Excel or Microsoft Access. If this is the case, the Principal Investigator should contact the GAN Global Centre to confirm that the GAN Global Centre can read the intended format. Other file formats that the GAN Global Centre can accept include, Lotus 1-2-3, Paradox, Dbase, Quattro Pro, Microsoft Works and Epi-Info. If one of these file formats is used to send data to the GAN Global Centre, please follow the data structure described in this section as closely as is feasible. Any alterations to the order of variables, variable names or format of variables described in this section should be clearly described in correspondence to the GAN Global Centre.

When creating the data files, use the format documented in the coding section of this manual for all variables (see section 19.5). The compulsory questions are noted in sections 7-9 (pages 30-78). Should centres wish to omit subsequent questions it is assumed they will re number their questions accordingly, however centres must still use the variable names and item numbers noted in section 19.5 when coding the data from their questionnaires.

Data for different subjects (adolescents, children or adults) must be written in different records (lines). A new file should be created for each age group. The files must contain only items of the questionnaires and preferably saved as a .CSV (Comma Separated Value) file. Each variable (numeric or character) must be delimited by a comma (for .CSV files) or semicolon (for other ASCII text files). Hence character variables should not contain semicolons or commas as text values. The decimal separator must be a point. Do not use commas as a decimal separator as this can interfere with the format of .CSV files and other export routines for conversion to ASCII text files that use commas as a variable delimiter.

An example of these file format specifications is given below:

```
1,text response,2.15,next text response, etc.
```

Note: Most data entry programmes will use the comma as default field delimiter or allow you to specify it, when you export and save your data. If you have any problems to code or convert your data, do not hesitate to contact the GAN Global Centre.

19.2.2 Text and empty variables

In most cases blank spaces are not allowed in the DATA file records (except in the DATA HEADER file). Leading zeros are to be used where necessary to pad fields to avoid blanks. Most variables in the questionnaire use numeric codes (e.g. 1 for 'Yes', 2 for 'No'). If there was no response, you should use the code '9' or '99' to indicate that there was no response from the respondent.

```
1,2,9,1,99,etc
```

The exception to this is some variables which contain text (eg item 80 in section 19.5.3). If a respondent has not answered 'Other' for item 79, item 80 should be left blank. Collaborators must also ensure that delimiters are used for blank variables. In this case the coding for these variables should be:

```
1,,next response,9, etc
```

No response may occur deliberately because it was a question that was not required to be answered, or the respondent chose not to answer the question, or may occur unintentionally because the respondent did not correctly supply the information.

Some programs may also enclose text variables in double or single quotes when exporting. Eg:

```
1,"text response",9,etc
```

Empty text variables, however, should not include these quotes. Eg:

```
1,,"next text response",9,etc
```

19.2.3 Country, centre, school and serial codes

COUNTRY and CENTRE codes are issued by the GAN Global Centre when Centres register and are accepted into the study. Principal Investigators should contact the GAN Global Centre if they do not know their COUNTRY or CENTRE code.

SCHOOL and SERIAL codes must be unique within each centre and are to be allocated by the centre. Centres may choose to allocate SERIAL codes for subjects (children) consecutively within the centre, or they may wish to re-start the numbering for each school. Either approach is acceptable as long as no two (or more) respondents share the same combination of SCHOOL and SERIAL codes within a centre. If the Adult questionnaire is used, it is VITAL that the adult respondents can be linked with the corresponding child or adolescent respondent in some way See section 19.5.3 page 167 and "identifying boxes for office use only" on page 183. If questionnaires are scanned a barcode could be used to link student and adult records. The GAN Global Centre may wish to discuss the data for individual respondents during the data checking process. Centres are therefore advised to adopt a numbering system that allows them to easily associate a record in the computer file with a paper questionnaire.

19.3 Methods of data transfer

As stated above, the preferred method of data transfer is by email or file upload via the internet. If this is not possible, media that may be used to transfer data files to the GAN Global Centre include USB flash-drive, CD-ROM or DVD sent via post. At present the GAN Global Centre does not have the capability to accept other formats. Please contact the GAN Global Centre prior to data transfer if you would prefer to use other formats.

19.3.1 Email

Data files may be sent as attachments to email messages. All email with data attachments should be sent to the GAN Global Centre in Auckland (info@globalasthmanetwork.org).

Each email message must contain at least two attached files: a DATA HEADER file and one or more DATA files.

The version of the data should be numbered sequentially from 01. The first copy of the data sent to the GAN Global Centre will be version 01. If, during correspondence with the GAN Global Centre, changes are made to the data and a further version of the data is sent to the GAN Global Centre, this will be version 02 and so on.

DATA HEADER file:

The DATA HEADER file contains information about the person preparing the disk and the data files included on the diskette.

Name the DATA HEADER file as "`Hmmmrrrnn.ext`", where:

`H`	indicates header file
`mmm`	is the country code number,
`rrr`	is the centre code number,
`nn`	is the two digit data version number, and
ext	is the file type extension (e.g.txt for a flat text file).

For example, the first DATA HEADER flat text file from Auckland (CENTRE 001), New Zealand (COUNTRY 001) will be called `H00100101.txt`

DATA files:

The first line of every DATA file should be the FORM HEADER. The FORM HEADER should be followed by the actual data, one line for each subject (participant), using the structure described in the data form (see section 19.5).

The data files should be named as "`Dxxmmmrrrnn`", where:

`D`	indicates data file
`xx`	is any number identifying the DATA file being sent,
`mmm`	is the country code number,
`rrr`	is the centre code number,
`nn`	is the two digit data version number, and
ext	is the file type extension (e.g. .csv for a comma separated value file).

For example, the first DATA file from Auckland (CENTRE 001), New Zealand (COUNTRY 001) will be called `D0100100101.csv`

The GAN Global Centre will acknowledge receipt of the data. If no response has been received from the GAN Global Centre within two weeks after the data has been sent, please contact the GAN Global Centre by email or fax requesting confirmation that the data has been received.

19.3.2 USB flash-drive and CD-ROM

USB Flash-drives and CD-ROMs should ideally be written on an MS-DOS or Microsoft Windows computer. If such a computer is not available, please clearly state the name and version number of the relevant operating system in correspondence with the GAN Global Centre and on the data label. If at all possible, please avoid using computers with country or region specific operating systems.

Each flash-drive or CD-ROM must contain at least two files: a DATA HEADER file and one or more DATA files.

The DATA HEADER and DATA files should include the same information and be named in the same manner as those described in section 19.3.1.

Flash-drives or CD-ROMS should, if possible, be sent to the GAN Global Centre via registered mail. The GAN Global Centre will acknowledge receipt of data within one working day (except for holiday periods) by email or fax if a fax number has been supplied. If a centre has received no response from the GAN Global Centre two weeks after the data has been sent, please contact the GAN Global Centre (info@globalasthmanetwork.org) to request confirmation that the data has been received.

19.4 Labels and headers

19.4.1 Disk label

Every flash drive or CD-ROM sent from the Global Asthma Network centre to the GAN Global Centre must have a DISK LABEL affixed to it. The DISK LABEL should include the following information:

Country number

Centre number

Date when the disk was written (format as DDMMYYYY)

Data version number

Data type

COUNTRY:	001
CENTRE:	001
Date:	15/07/2015
Data Version:	02
Data type:	Phase 1

An example of a DISK LABEL:

This shows that:

It is from COUNTRY 001 (New Zealand)

It is from CENTRE 001 (Auckland)

It was written on 15 July 2015

It is version 02 of the data from Auckland

The data is from Phase 1 of the Global Asthma Network

19.4.2 Data header

The DATA HEADER file contains ten lines plus one line for every data file included on the disk. Details of each line are shown in the table below:

Line	Name	Specification and Codes		Variable length
1	FORM	Identifies that this is a DATA HEADER	HDGAN	5
1	VERSION	DATA HEADER version	02	2
2	NAME	Name of person to be contacted regarding the contents of the disk.		255
3	ADDRESS	Address of person to be contacted regarding the contents of the disk.		255
4	EMAIL	Email address of the person to be contacted regarding the contents of the disk.		255
5	DWRITTEN	Date of writing the disk (ddmmyyyy)		8
6	COUNTRY	Country code number		3
7	CENTRE	Centre code number		3
8	DVERSION	Data version identification number		2
		The centre must give a sequential data version number to each different version of the data that is submitted to the GAN Global Centre. The number of the first version should be 01, the second should be 02, etc. The data version number is recorded in the DATA HEADER, and also on the DISK LABEL. This number is also part of the names of the DATA HEADER and the DATA files.		
9	TOTFILE	Total number of files being transferred. Record here the total number of files being sent to the GAN Global Centre. This number will be 1 (for the DATA HEADER) plus the number of DATA files on the disk.		3
10	PHASE1	A code to identify the data is from a Global Asthma Network Phase 1 study		1
11-		One line for each data file. The line will consist of the filename, the form type the file contains and the number of records within the file.		

DATAxx	Data file name using the format `Dxxmmmrrrnn.ext` where: `D` indicates data file `xx` is a unique identifier, `mmm` is the country number, `rrr` is the centre number `nn` is the last two digits of the data version number (DVERSION), and ext is the file extension type	15
Blank		2

FORMxx	Type of form within the data file.
	This will always be
	`01 for 13/14`
	`02 for 6/7`
	`03 for adults`
	unless otherwise agreed with the GAN Global Centre.
		2

blank		2
NUMRECxx	Number of data records within the data file (padded with leading zeros if necessary). DATAxx, FORMxx and NUMRECxx are repeated as many times as is necessary to describe all the data files on the disk.	6

An example of a DATA HEADER:

```
HDGAN02
Name of Principal Investigator (e.g. Philippa Ellwood)
Department of Paediatrics: Child and Youth Health, University of Auckland,
Private Bag 92019, Auckland, New Zealand.
Email: p.ellwood@auckland.ac.nz
27/08/2015
001
001
02
004
1
D0100100102.csv 01 000435
D0200100102.csv 02 000416
D0300100102.csv 03 002516
```

This shows that:

- The file is a DATA HEADER (version 2)
- It was prepared by Philippa Ellwood
- It was written on 27 August 2015
- It is from COUNTRY 001 (New Zealand)
- It is from CENTRE 001 (Auckland)
- It is version 02 of the data
- There are 4 files being sent to the GAN Global Centre
- It is a Phase 1 study
- There are three data files containing data on 435 adolescent subjects, 416 child subjects and 2,516 adult subjects respectively

Note that the line containing the address information and the line containing the email information have wrapped to a second line in this example. In the actual DATA HEADER each would occupy a single line of up to 255 characters.

19.4.3 Form header

The FORM HEADER is the first line of information in each text format data file. If a centre sends the data as a spreadsheet, the FORM HEADER should occupy the top left cell of the spreadsheet with the remaining cells on the first row left blank. If a centre sends the data as a database file, the FORM HEADER should be omitted from the file but the information contained in the FORM HEADER, including identification of the file to which it applies, should be included in correspondence to the GAN Global Centre.

The FORM HEADER includes the following information:

Name	Specification and Codes		Columns
FORM	Identifies that this is a FORM HEADER	HDRFORM	1 to 7
VERSION	FORM HEADER version	02	8 to 9
HDFORM	Form identification of the following forms	01, 02, or 03	10 to 11
HDVERSN	Form version of the following forms	1	12
HDNMFRM	Number of records of type HDFORM in this file		13 to 18

None of the characters in the FORM HEADER should be left blank.

HDFORM is the code that identifies the form used to structure the data in the file. For all data this will be 01, 02, or 03 unless the Principal Investigator and the GAN Global Centre have agreed to use a different, centre specific form.

The number of records (HDNMFRM) included in the FORM HEADER should be consistent with the number of records included in the DATA HEADER for the data file.

An example of a FORM HEADER:

```
HDRFORM02011002557
```

This shows that:

This is a FORM HEADER

This is version 02 of the FORM HEADER

The DATA file uses FORM 01 version 1 to structure the data

The DATA file contains 2557 records (with leading zeros)

19.5 Coding of data

19.5.1 Coding of data for the 13/14 year age group (adolescents)

DATA COLLECTION

QUESTIONNAIRE DATA FOR THE ADOLESCENT GROUP

Form: 01

Version 1

Item	Name	Specification and Codes	Question #
1	FORM	Questionnaire age group THIS IS FORM TYPE 01 01 = All questionnaire data 13/14 age group CODE 01 HERE	
2	VERSION	Form version 1	
3	COUNTRY	Country code	
4	CENTRE	Centre code	
5	SCHOOL	School identification number	
6	SERIAL	Serial number of respondent	
7	SERIALA1	Serial number of adult caregiver 1	
8	SERIALA2	Serial number of adult caregiver 2	
9	DINT	Date of interview / receiving response Use ddmmyyyy where: dd = Day mm = Month yyyy = Year Use code 99 or 9999 if information is not available for any of these components	
10	AGE	The actual age of the child / respondent (years) Use code 99 for an invalid response	
11	DBIRTH	Date of birth of the child / respondent. Use ddmmyyyy where: dd = Day mm = Month yyyy = Year Use code 99 or 9999 if information is not available for any of these components	

12	SEX	Sex of the child / respondent 1 = Male 2 = Female 9 = Any other response	
13	WEIGHT	Weight of the respondent _____kg/stone/pounds (Please circle the measurement you used) Note: Use code '999' for an invalid response.	
14	WGTUNIT	Measurement used for respondent weight. 1 = Kilograms 2 = Stone 3 = Pounds 4 = Pounds and ounces 9 = Any other response Note: If you use kilograms or stone or pounds and decimal places are necessary, please ensure that you use only the period (.) as the decimal placeholder, and that you include a maximum of one decimal place. Note: If you use pounds and ounces, please separate the two components with an underscore character (e.g. 8_3 for 8 pounds, 3 ounces).	
15	HEIGHT	Height of the respondent _____m/cm/feet/inches (Please circle the measurement you used) Note: Use code '999' for an invalid response.	
16	HGTUNIT	Measurement used for respondent height. 1 = Metres 2 = Centimetres 3 = Feet and inches 4 = Inches 9 = Any other response Note: If you use metres or feet and inches and decimal places are necessary, please ensure that you use only the period (.) as the decimal placeholder, and that you include a maximum of two decimal places.	
17	LANGUAGE	Language of the questionnaire Use a three digit code for each language used in the centre from the list on page 186. If an appropriate language code is not available, please contact the GAN Global Centre (contact number page 214) to request a code number for your language.	
18	WHEZEV	Have you ever had wheezing or whistling in the chest at any time in the past? 1 = Yes 2 = No 9 = Any other response	1

19	WHEZ12	Have you had wheezing or whistling in the chest in the past 12 months? 1 = Yes 2 = No 9 = Any other response	2
20	NWHEZ12	How many attacks of wheezing have you had in the past 12 months? 1 = None 2 = 1 to 3 3 = 4 to 12 4 = More than 12 9 = Any other response	3
21	AWAKE12	In the past 12 months, how often, on average, has your sleep been disturbed due to wheezing? 1 = Never woken with wheezing 2 = Less than one night per week 3 = One or more nights per week 9 = Any other response	4
22	SPEECH12	In the past 12 months, has wheezing ever been severe enough to limit your speech to only one or two words at a time between breaths? 1 = Yes 2 = No 9 = Any other response	5
23	ASTHMAEV	Have you ever had asthma? 1 = Yes 2 = No 9 = Any other response	6
24	ASTHDOC	Was asthma confirmed by a doctor? 1 = Yes 2 = No 9 = Any other response	7
25	ASTHPLAN	Do you have a written plan which tells you how to look after your asthma? 1 = Yes 2 = No 9 = Any other response	8
26	MEDPUFF	Have you used any inhaled medicines e.g. puffers (*use local terminology*) to help your breathing problems at any time in the past 12 months? (when you didn't have a cold) 1 = Yes 2 = No 9 = Any other response	9

27	SABAFREQ	Please indicate how often you used of each of the **inhaled** medicines listed below **in the past 12 months**: Short Acting β-Agonists (SABA): Frequency 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	9a
28	LABAFREQ	Long Acting β-Agonists (LABA): Frequency 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
29	ICSFREQ	Inhaled Corticosteroids (ICS): Frequency 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
30	COMBFREQ	Combination ICS and LABA: Frequency 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
31	MEDPILL	Have you used any tablets, capsules, liquids or other medicines e.g. pills (*use local terminology*) that you swallowed to help your breathing at any time in the past 12 months? (when you didn't have a cold) 1 = Yes 2 = No 9 = Any other response	10
		Please indicate how often you used of each of the tablets, capsules, liquids or other medicines e.g. pills (*use local terminology*) listed below **in the past 12 months**:	10a
32	MEDPIL1a	Name [1] Note: Please enter the chemical name and local brand name that relates to this question.	
33	MEDPIL1b	Frequency [1] 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
34	MEDPIL2a	Name [2] Note: Please enter the chemical name and local brand name that relates to this question.	

35	MEDPIL2b	Frequency [2] 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
36	MEDPIL3a	Name [3] Note: Please enter the chemical name and local brand name that relates to this question.	
37	MEDPIL3b	Frequency [3] 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
38	MEDPIL4a	Name [4] Note: Please enter the chemical name and local brand name that relates to this question.	
39	MEDPIL4b	Frequency [4] 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response Note: If you require more columns to accommodate more medicine names, please follow the naming convention above where MEDPILxa is the name of the medicine and MEDPILxb is the frequency of that medicine, and x is a sequential number uniquely identifying each variable. Use the existing codes to code each question: 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
40	DOCBRT12	In the past 12 months, how many times have you urgently been to a doctor because of breathing problems? 1 = None 2 = 1 to 3 3 = 4 to 12 4 = More than 12 9 = Any other response	11
41	ERBRTH12	In the past 12 months, how many times have you urgently been to an Emergency Department without being admitted to hospital because of breathing problems? 1 = None 2 = 1 to 3 3 = 4 to 12 4 = More than 12 9 = Any other response	12

42	HOSBRT12	In the past 12 months how many times have you been admitted to hospital because of breathing problems. 1 = None 2 = 1 3 = 2 4 = More than 2 9 = Any other response	13
43	SCHOOL12	In the past 12 months, how many days (or part days) of school have you missed because of breathing problems? 1 = None 2 = 1 to 3 3 = 4 to 12 4 = More than 12 9 = Any other response	14
44	EXWHEZ12	In the past 12 months, has your chest sounded wheezy during or after exercise? 1 = Yes 2 = No 9 = Any other response	15
45	COUGH12	In the past 12 months, have you had a dry cough at night, apart from a cough associated with a cold or chest infection? 1 = Yes 2 = No 9 = Any other response	16
46	PNOSEEV	Have you ever had a problem with sneezing or a runny or blocked nose when you DID NOT have a cold or the flu? 1 = Yes 2 = No 9 = Any other response	17
47	PNOSE12	In the past 12 months, have you had a problem with sneezing or a runny or blocked nose when you DID NOT have a cold or the flu? 1 = Yes 2 = No 9 = Any other response	18
48	IITCH12	In the past 12 months, has this nose problem been accompanied by an itchy nose? 1 = Yes 2 = No 9 = Any other response	19
49	IEYES12	In the past 12 months, has this nose problem been accompanied by itchy-watery eyes? 1 = Yes 2 = No 9 = Any other response	20

50	IACTIV12	In the past 12 months, how much did this nose problem interfere with your daily activities? 1 = Not at all 2 = A little 3 = A moderate amount 4 = A lot 9 = Any other response	21
51	HFEVEREV	Have you ever had hay fever? 1 = Yes 2 = No 9 = Any other response	22
52	HFEVDOC	Was your hay fever confirmed by a doctor? 1 = Yes 2 = No 9 = Any other response	23
53	RASHEV	Have you ever had an itchy rash which was coming and going for at least six months? 1 = Yes 2 = No 9 = Any other response	24
54	RASH12	Have you had this itchy rash at any time in the past 12 months? 1 = Yes 2 = No 9 = Any other response	25
55	SITESEV	Has this itchy rash at any time affected any of the following places: the folds of the elbows, behind the knees, in front of the ankles, under the buttocks, or around the neck, ears or eyes? 1 = Yes 2 = No 9 = Any other response	26
56	RCLEAR12	Has this itchy rash cleared completely at any time during the past 12 months? 1 = Yes 2 = No 9 = Any other response	27
57	RAWAKE12	In the past 12 months, how often on average, have you been kept awake at night by this itchy rash? 1 = Never in the past 12 months 2 = Less than one night per week 3 = One or more nights per week 9 = Any other response	28
58	ECZEMAEV	Have you ever had eczema? 1 = Yes 2 = No 9 = Any other response	29

59	ECZEDOC	Was your eczema confirmed by a doctor? 1 = Yes 2 = No 9 = Any other response	30
60	EXERCISE	How many times a week do you engage in vigorous physical activity long enough to make you breathe hard? 1 = Never or occasionally 2 = Once or twice per week 3 = Three or more times per week 9 = Any other response	31
61	TELEVIS	During a normal week of 7 days, how many hours a day (24 hours) do you watch television? (include DVD's films, videos) 1 = Less than 1 hour 2 = 1 hour but less than 3 hours 3 = 3 hours but less than 5 hours 4 = 5 hours or more 9 = Any other response	32
62	COMPUTER	During a normal week of 7 days, how many hours a day (24 hours) do you spend on any of the following: computer (include PlayStation, smartphone, tablet); the internet (include Chat, Facebook, games, Twitter, YouTube) and more? 1 = Less than 1 hour 2 = 1 hour but less than 3 hours 3 = 3 hours but less than 5 hours 4 = 5 hours or more 9 = Any other response	33
63	TWIN	Are you a twin? 1 = Yes 2 = No 9 = Any other response	34
64	OLDSIBS	How many older brothers and/or sisters do you have? Note: Use code '99' for an invalid response.	35
65	YNGSIBS	How many younger brothers and/or sisters do you have? Note: Use code '99' for an invalid response.	36
66	CNTRYBIR	Were you born in [country of survey]? 1 = Yes 2 = No 9 = Any other response	37
67	CBIROTH	*If NO*, what country were you born in? Note: Please enter the country name specified. Leave blank if no country was specified, or an illegible or invalid response was provided.	37a

68	YRSLIVED	How many years have you lived in [country of survey]? Note: Use code '99' for an invalid response.	38
69	TRUCFREQ	How often do trucks pass through the street where you live on weekdays? 1 = Never 2 = Seldom (not often) 3 = Frequently through the day 4 = Almost the whole day 9 = Any other response	39
70	MEAT	In the past 12 months, how often, on average did you eat meat (e.g. beef, lamb, chicken, pork)? 1 = Never or only occasionally 2 = Once or twice per week 3 = Most or all days 9 = Any other response	40
71	SEAFOOD	In the past 12 months, how often, on average did you eat seafood (including fish)? 1 = Never or only occasionally 2 = Once or twice per week 3 = Most or all days 9 = Any other response	
72	FRUIT	In the past 12 months, how often, on average did you eat fruit? 1 = Never or only occasionally 2 = Once or twice per week 3 = Most or all days 9 = Any other response	
73	VEGECOOK	In the past 12 months, how often, on average did you eat cooked vegetables (green and root)? 1 = Never or only occasionally 2 = Once or twice per week 3 = Most or all days 9 = Any other response	
74	VEGERAW	In the past 12 months, how often, on average did you eat raw vegetables (green and root)? 1 = Never or only occasionally 2 = Once or twice per week 3 = Most or all days 9 = Any other response	
75	PULSES	In the past 12 months, how often, on average did you eat pulses (peas, beans, lentils)? 1 = Never or only occasionally 2 = Once or twice per week 3 = Most or all days 9 = Any other response	

76 CEREALS In the past 12 months, how often, on average did you eat cereals (excluding bread)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

77 BREAD In the past 12 months, how often, on average did you eat bread?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

78 PASTA In the past 12 months, how often, on average did you eat pasta?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

79 RICE In the past 12 months, how often, on average did you eat rice?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

80 MARGARIN In the past 12 months, how often, on average did you eat margarine?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

81 BUTTER In the past 12 months, how often, on average did you eat butter?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

82 OLIVEOIL In the past 12 months, how often, on average did you eat Olive Oil?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

83 MILK In the past 12 months, how often, on average did you drink milk (including flavoured milk)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

84 DAIRYOTH In the past 12 months, how often, on average did you eat other dairy products (including cheese or yoghurt)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

85 EGGS In the past 12 months, how often, on average did you eat eggs?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

86 NUTS In the past 12 months, how often, on average did you eat nuts?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

87 POTATO In the past 12 months, how often, on average did you eat potatoes?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

88 SUGAR In the past 12 months, how often, on average did you eat sugar (including lollies, candies, sweets)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

89 BURGER In the past 12 months, how often, on average did you eat fast food/burgers?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

90 FASTFOOD In the past 12 months, how often, on average did you eat fast food excluding burgers?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

91 SOFTDRNK In the past 12 months, how often, on average did you drink fizzy or soft drinks (include local terminology)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

92	PARANOW	In the past 12 months, how often, on average, have you taken paracetamol (*use local terminology e.g. Acetaminophen, Panadol, Pamol, Tylenol*) for fever? 1 = Never 2 = At least once a year 3 = At least once per month 9 = Any other response	41
93	CATNOW	In the past 12 months, have you had a cat in your home? 1 = Yes 2 = No 9 = Any other response	42
94	DOGNOW	In the past 12 months, have you had a dog in your home? 1 = Yes 2 = No 9 = Any other response	43
95	TOBACEVA	In the past, have you smoked tobacco on a daily basis, less than daily, or not at all? 1 = Not at all 2 = Less than daily 3 = Daily 9 = Any other response	44
96	TOBACNOW	Do you currently smoke tobacco on a daily basis, less than daily, or not at all? 1 = Not at all 2 = Less than daily 3 = Daily 9 = Any other response	45
97	TOBACAGE	If you have smoked tobacco ever, either daily or less than daily, at what age did you first smoke cigarettes, cigars, or pipe? Note: Use code '99' for an invalid response. Note: Use code '99' for not applicable	46
98	TOBACNUM	On average over the entire time you have smoked, how many cigarettes, cigars, or pipe did you smoke each day? Note: Use code '99' for an invalid response. Note: Use code '99' for not applicable	47
99	TOBACNAR	Do you smoke water pipe (*use local terminology e.g. bong, crack pipe, hookah, hubble-bubble, narghile, shisha, vapourizer, water vapour*) at home? 1 = Yes 2 = No 9 = Any other response	48

Code 9 for the following 15 variables (items 98 to 112) if the child / respondent has not seen the video questionnaire.

100	BRTHEV	Has your breathing been like this at any time in your life? 1 = Yes 2 = No 9 = Any other response	49
101	BRTH12	Has your breathing been like this in the past year? 1 = Yes 2 = No 9 = Any other response	
102	BRTH1M	Has your breathing been like this one or more times a month? 1 = Yes 2 = No 9 = Any other response	
103	EXBRTHEV	Has your breathing been like the boy's in the dark shirt following exercise at any time in your life? 1 = Yes 2 = No 9 = Any other response	50
104	EXBRTH12	Has your breathing been like the boy's in the dark shirt following exercise in the past year? 1 = Yes 2 = No 9 = Any other response	
105	EXBRTH1M	Has your breathing been like the boy's in the dark shirt following exercise one or more times a month? 1 = Yes 2 = No 9 = Any other response	
106	WWOKENEV	Have you been woken like this at night at any time in your life? 1 = Yes 2 = No 9 = Any other response	51
107	WWOKEN12	Have you been woken like this at night in the past year? 1 = Yes 2 = No 9 = Any other response	
108	WWOKEN1M	Have you been woken like this at night one or more times a month? 1 = Yes 2 = No 9 = Any other response	

109	CWOKENEV	Have you been woken like this at night at any time in your life? 1 = Yes 2 = No 9 = Any other response	52
110	CWOKEN12	Have you been woken like this at night in the past year? 1 = Yes 2 = No 9 = Any other response	
111	CWOKEN1M	Have you been woken like this at night one or more times a month? 1 = Yes 2 = No 9 = Any other response	
112	SABRTHEV	Has your breathing been like this at any time in your life? 1 = Yes 2 = No 9 = Any other response	53
113	SABRTH12	Has your breathing been like this in the past year? 1 = Yes 2 = No 9 = Any other response	
114	SABRTH1M	Has your breathing been like this one or more times a month? 1 = Yes 2 = No 9 = Any other response	

19.5.2 Coding of data for the 6/7 year age group (children)

DATA COLLECTION

QUESTIONNAIRE DATA FOR THE CHILDRENS GROUP

Form: 02

Version 1

Item	Name	Specification and Codes	Question #
1	FORM	Questionnaire age group THIS IS FORM TYPE 02 02 = All questionnaire data 6/7 age group CODE 02 HERE	
2	VERSION	Form version 1	
3	COUNTRY	Country code	
4	CENTRE	Centre code	
5	SCHOOL	School identification number	
6	SERIAL	Serial number of respondent	
7	SERIALA1	Serial number of adult caregiver 1	
8	SERIALA2	Serial number of adult caregiver 2	
9	DINT	Date of interview / receiving response Use ddmmyyyy where: dd = Day mm = Month yyyy = Year Use code 99 or 9999 if information is not available for any of these components	
10	AGE	The actual age of the child / respondent (years) Use code 99 for an invalid response	
11	DBIRTH	Date of birth of the child / respondent Use ddmmyyyy where: dd = Day mm = Month yyyy = Year Use code 99 or 9999 if information is not available for any of these components	

12	SEX	Sex of the child / respondent 1 = Male 2 = Female 9 = Any other response	
13	WEIGHT	Weight of the child / respondent _____kg/stone/pounds (Please circle the measurement you used) Note: Use code '999' for an invalid response.	
14	WGTUNIT	Measurement used for child / respondent weight. 1 = Kilograms 2 = Stone 3 = Pounds 4 = Pounds and ounces 9 = Any other response Note: If you use kilograms or stone or pounds and decimal places are necessary, please ensure that you use only the period (.) as the decimal placeholder, and that you include a maximum of one decimal place. Note: If you use pounds and ounces, please separate the two components with an underscore character (e.g. 8_3 for 8 pounds, 3 ounces).	
15	HEIGHT	Height of the child / respondent _____m/cm/feet/inches (Please circle the measurement you used) Note: Use code '999' for an invalid response.	
16	HGTUNIT	Measurement used for child / respondent height. 1 = Metres 2 = Centimetres 3 = Feet and inches 4 = Inches 9 = Any other response Note: If you use metres or feet and inches and decimal places are necessary, please ensure that you use only the period (.) as the decimal placeholder, and that you include a maximum of two decimal places.	
17	LANGUAGE	Language of the questionnaire Use a three digit code for each language used in the centre from the list on page 186. If an appropriate language code is not available, please contact the GAN Global Centre (contact number page 214) to request a code number for your language.	
18	WHEZEV	Has this child ever had wheezing or whistling in the chest <u>at any time</u> in the past? 1 = Yes 2 = No 9 = Any other response	1

19	WHEZAGE	*IF YOU ANSWERED "YES*" – How old was this child when the wheezing or whistling started? 1 = Less than one year 2 = 1 to 2 3 = 3 to 4 4 = 5 to 6 5 = More than 6 years 9 = Any other response	2
20	WHEZ12	Has this child had wheezing or whistling in the chest in the past 12 months? 1 = Yes 2 = No 9 = Any other response	3
21	NWHEZ12	How many attacks of wheezing has this child had in the past 12 months? 1 = None 2 = 1 to 3 3 = 4 to 12 4 = More than 12 9 = Any other response	4
22	AWAKE12	In the past 12 months, how often, on average, has this child's sleep been disturbed due to wheezing? 1 = Never woken with wheezing 2 = Less than one night per week 3 = One or more nights per week 9 = Any other response	5
23	SPEECH12	In the past 12 months, has wheezing ever been severe enough to limit this child's speech to only one or two words at a time between breaths? 1 = Yes 2 = No 9 = Any other response	6
24	ASTHMAEV	Has this child ever had asthma? 1 = Yes 2 = No 9 = Any other response	7
25	ASTHDOC	Was this child's asthma confirmed by a doctor? 1 = Yes 2 = No 9 = Any other response	8
26	ASTHPLAN	Does this child have a written plan which tells you/him/her how to look after his/her asthma? 1 = Yes 2 = No 9 = Any other response	9

27	MEDPUFF	Has this child used any inhaled medicines e.g. puffers (*use local terminology*) to help his/her breathing problems at any time in the past 12 months? (when he/she did not have a cold) 1 = Yes 2 = No 9 = Any other response	10
28	SABAFREQ	Please indicate how often this child used each of the inhaled medicines listed below in the past 12 months: Short Acting β-Agonists (SABA): Frequency 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	10a
29	LABAFREQ	Long Acting β-Agonists (LABA): Frequency 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
30	ICSFREQ	Inhaled Corticosteroids (ICS): Frequency 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
31	COMBFREQ	Combination ICS and LABA: Frequency 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
32	MEDPILL	Has this child used any tablets, capsules, liquids or other medicines e.g. pills (*use local terminology*) that he/she swallowed to help his/her breathing at any time in the past 12 months? (when he/she did not have a cold) 1 = Yes 2 = No 9 = Any other response	11
33	MEDPIL1a	Please indicate how often this child used each of the tablets, capsules, liquids or other medicines e.g. pills (*use local terminology*) listed below **in the past 12 months**: Name [1] Note: Please enter the chemical name and local brand name that relates to this question.	11a

34	MEDPIL1b	Frequency [1] 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
35	MEDPIL2a	Name [2] Note: Please enter the chemical name and local brand name that relates to this question.	
36	MEDPIL2b	Frequency [2] 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
37	MEDPIL3a	Name [3] Note: Please enter the chemical name and local brand name that relates to this question.	
38	MEDPIL3b	Frequency [3] 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
39	MEDPIL4a	Name [4] Note: Please enter the chemical name and local brand name that relates to this question.	
40	MEDPIL4b	Frequency [4] 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response Note: If you require more columns to accommodate more medicine names, please follow the naming convention above where MEDPILxa is the name of the medicine and MEDPILxb is the frequency that medicine, and x is a sequential number uniquely identifying each variable. Use the existing codes to code each question: 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
41	DOCBRT12	In the past 12 months, how many times have you urgently taken this child to a doctor because of his/her breathing problems? 1 = None 2 = 1 to 3 3 = 4 to 12 4 = More than 12 9 = Any other response	12

42	ERBRTH12	In the past 12 months, how many times have you urgently taken this child to an Emergency Department without being admitted to hospital because of his/her breathing problems? 1 = None 2 = 1 to 3 3 = 4 to 12 4 = More than 12 9 = Any other response	13
43	HOSBRT12	In the past 12 months how many times has this child been admitted to hospital because of his/her breathing problems. 1 = None 2 = 1 3 = 2 4 = More than 2 9 = Any other response	14
44	SCHOOL12	In the past 12 months, how many days (or part days) of school has this child missed because of his/her breathing problems? 1 = None 2 = 1 to 3 3 = 4 to 12 4 = More than 12 9 = Any other response	15
45	EXWHEZ12	In the past 12 months, has this child's chest sounded wheezy during or after exercise? 1 = Yes 2 = No 9 = Any other response	16
46	COUGH12	In the past 12 months, has this child had a dry cough at night, apart from a cough associated with a cold or chest infection? 1 = Yes 2 = No 9 = Any other response	17
47	PNOSEEV	Has this child ever had a problem with sneezing or a runny or blocked nose when he / she DID NOT have a cold or the flu? 1 = Yes 2 = No 9 = Any other response	18
48	PNOSEAGE	*IF YOU ANSWERED "YES"* – How old was this child when the nose problem started? 1 = Less than one year 2 = 1 to 2 3 = 3 to 4 4 = 5 to 6 5 = More than 6 years 9 = Any other response	19

49	PNOSE12	In the past 12 months, has this child had a problem with sneezing or a runny or blocked nose when he / she DID NOT have a cold or the flu? 1 = Yes 2 = No 9 = Any other response	20
50	IITCH12	In the past 12 months, has this child's nose problem been accompanied by an itchy nose? 1 = Yes 2 = No 9 = Any other response	21
51	IEYES12	In the past 12 months, has this child's nose problem been accompanied by itchy-watery eyes? 1 = Yes 2 = No 9 = Any other response	22
52	IACTIV12	In the past 12 months, how much did this child's nose problem interfere with his/her daily activities? 1 = Not at all 2 = A little 3 = A moderate amount 4 = A lot 9 = Any other response	23
53	HFEVEREV	Has this child ever had hay fever? 1 = Yes 2 = No 9 = Any other response	24
54	HFEVDOC	Was this child's hay fever confirmed by a doctor? 1 = Yes 2 = No 9 = Any other response	25
55	RASHEV	Has this child ever had an itchy rash which was coming and going for at least six months? 1 = Yes 2 = No 9 = Any other response	26
56	RASH12	Has this child had this itchy rash at any time in the past 12 months? 1 = Yes 2 = No 9 = Any other response	27
57	SITESEV	Has this itchy rash at any time affected any of the following places: the folds of the elbows, behind the knees, in front of the ankles, under the buttocks, or around the neck, ears or eyes? 1 = Yes 2 = No 9 = Any other response	28

58	RASHAGE	At what age did this child's itchy rash first occur? 1 = Under 2 years 2 = Age 2-4 years 3 = Age 5 or more 9 = Any other response	29
59	RCLEAR12	Has this child's rash cleared completely at any time during the past 12 months? 1 = Yes 2 = No 9 = Any other response	30
60	RAWAKE12	In the past 12 months, how often on average, has this child been kept awake at night by this itchy rash? 1 = Never in the past 12 months 2 = Less than one night per week 3 = One or more nights per week 9 = Any other response	31
61	ECZEMAEV	Has this child ever had eczema? 1 = Yes 2 = No 9 = Any other response	32
62	ECZEDOC	Was this child's eczema confirmed by a doctor? 1 = Yes 2 = No 9 = Any other response	33
63	MPARAPRG	How often, on average, did this child's Mother take paracetamol in the pregnancy that she had with this child? 1 = Never 2 = At least once in pregnancy 3 = At least once a month 4 = More often 5 = Don't know 9 = Any other response	34
64	ANIMOTH	Did this child's mother have regular (at least once a week) contact with farm animals (e.g. cattle, pigs, goats, sheep or poultry; *use local terminology*) while being pregnant with this child? 1 = Yes 2 = No 9 = Any other response	35
65	MSMOKPRG	Did this child's Mother smoke during her pregnancy with this child? 1 = Yes 2 = No 9 = Any other response	36

66	MPCAR01	Was there carpet in the house while this child's Mother was pregnant with this child? (tick as many as are applicable) No carpet in the house 1 = Ticked 2 = Not ticked 9 = Any other response	37
67	MPCAR02	Mother's bedroom 1 = Ticked 2 = Not ticked 9 = Any other response	
68	MPCAR03	Living room 1 = Ticked 2 = Not ticked 9 = Any other response	
69	MPCAR04	Other room/s 1 = Ticked 2 = Not ticked 9 = Any other response	
70	CHPREM	Was this child born prematurely (more than 3 weeks before he/she was expected)? 1 = Yes 2 = No 9 = Any other response	38
71	BWEIGHT	What was the weight of this child when he/she was born? _____kg/stone/pounds (Please circle the measurement you used) Note: Use code '99' for an invalid response.	39
72	BWGTUNIT	Measurement used for birth weight. 1 = Kilograms 2 = Stone 3 = Pounds 4 = Pounds and ounces 9 = Any other response Note: If you use kilograms or stone or pounds and decimal places are necessary, please ensure that you use only the period (.) as the decimal placeholder, and that you include a maximum of one decimal place. Note: If you use pounds and ounces, please separate the two components with an underscore character (e.g. 8_3 for 8 pounds, 3 ounces).	
73	BRSTFED	Was this child ever breastfed? 1 = Yes 2 = No 9 = Any other response	40

74	NBRSTFED	For how long was this child breastfed? 1 = Less than 6 months 2 = 6-12 months 3 = More than 12 months 9 = Any other response	40a
75	NBRSTEXC	For how long was this child breastfed without adding other foods or liquids? 1 = Less than 2 months 2 = 2-4 months 3 = 5-6 months 4 = More than 6 months 9 = Any other response	40b
76	MILKYNGa	In this child's first 12 months of life what kind of milk did this child drink most often? 1-6 months 1 = Breast milk 2 = Infant formula 3 = Homogenised or full cream pasteurised milk from the shop 4 = Low fat or skimmed pasteurised milk from the shop 5 = Long life milk (UHT) 6 = Boiled milk, fresh from the farm 7 = Unboiled milk, fresh from the farm 8 = Soy milk, goats milk 9 = None of the above 10 = Don't know 99 = Any other response	41
77	MILKYNGb	7-12 months 1 = Breast milk 2 = Infant formula 3 = Homogenised or full cream pasteurised milk from the shop 4 = Low fat or skimmed pasteurised milk from the shop 5 = Long life milk (UHT) 6 = Boiled milk, fresh from the farm 7 = Unboiled milk, fresh from the farm 8 = Soy milk, goats milk 9 = None of the above 10 = Don't know 99 = Any other response	
78	PARAYNG	In the first 12 months of this child's life, did you usually give paracetamol *(use local terminology e.g. Acetaminophen, Panadol, Tylenol)* for fever? 1 = Yes 2 = No 9 = Any other response	42

79	NCHSTYNG	How many chest infections did this child have in his/her first year of life? 1 = None 2 = 1 3 = 2-5 4 = 6 or more 9 = Any other response	43
80	ANTIBIOT	In the first 12 months of life, did this child have any antibiotics? 1 = Yes 2 = No 9 = Any other response	44
81	NANTBIOT	How many courses of antibiotics did this child have? 1 = 1 2 = 2-5 3 = 6 or more 9 = Any other response	44a
82	ANTBIOCH	Were any antibiotics taken to treat chest infections? 1 = Yes 2 = No 9 = Any other response	44b
83	SHEEPYNG	Did this child lie on a sheepskin as an infant? 1 = Yes 2 = No 9 = Any other response	45
84	CATYNG	Did you have a cat in your home during the first year of this child's life? 1 = Yes 2 = No 9 = Any other response	46
85	DOGYNG	Did you have a dog in your home during the first year of this child's life? 1 = Yes 2 = No 9 = Any other response	47
86	ANIYNG	In this child's first year of life did this child have regular (at least once a week) contact with farm animals (e.g. cows, cattle, pigs, goats, sheep or poultry; *use local terminology*)? 1 = Yes 2 = No 9 = Any other response	48
87	WHEEZYNG	Did this child suffer from wheezing or whistling in the chest during his/her first year of life? 1 = Yes 2 = No 9 = Any other response	49

88 MEDYNG Was this child treated with **inhaled and/or oral** medicines to help his/her breathing during his/her first year of life? (when he/she did not have a cold) 50
1 = Yes
2 = No
9 = Any other response

89 MEDYNG1 Please indicate how often you used of each of the **inhaled and/or oral** medicines listed below **during his/her first year of life**: 50a

Inhaled SABA:
Frequency
1 = Only when needed
2 = In short courses
3 = Every day
9 = Any other response

90 MEDYNG2 Inhaled ICS:
Frequency
1 = Only when needed
2 = In short courses
3 = Every day
9 = Any other response

91 MEDYNG3 Oral SABA:
Frequency
1 = Only when needed
2 = In short courses
3 = Every day
9 = Any other response

92 MEDYNG4 Oral corticosteroids:
Frequency
1 = Only when needed
2 = In short courses
3 = Every day
9 = Any other response

93 MEDYNG5 Theophylline:
Frequency
1 = Only when needed
2 = In short courses
3 = Every day
9 = Any other response

94 MEDYNG6 Montelukast:
Frequency
1 = Only when needed
2 = In short courses
3 = Every day
9 = Any other response

95	MEDYNG7	Antibiotics: Frequency 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
96	CHCARYNG	Did this child ever go to out of home care (such as a child care facility or nursery school) when he/she was younger than 3 years of age? *(use local terminology)* 1 = Yes 2 = No 9 = Any other response	51
97	CHCRYNGY	*If yes,* from what age Years_____ Note: Use code '99' for an invalid response	51a
98	CHCRYNGM	Months_____ Note: Use code '99' for an invalid response	
99	CHCAROLD	Did this child ever go to out of home care (such as a kindergarten/playcentre, preschool) when he/she was older than three years of age? (*use local terminology*) 1 = Yes 2 = No 9 = Any other response	52
100	CHCROLDY	*If yes,* from what age Years_____ Note: Use code '99' for an invalid response.	52a
101	CHCROLDM	Months_____ Note: Use code '99' for an invalid response	
102	EXERCISE	How many times a week does this child engage in vigorous physical activity long enough to make him / her / breathe hard? 1 = Never or occasionally 2 = Once or twice per week 3 = Three or more times per week 9 = Any other response	53
103	TELEVIS	During a normal week of 7 days, how many hours a day (24 hours) does this child watch television? (include DVD's films, videos) 1 = Less than 1 hour 2 = 1 hour but less than 3 hours 3 = 3 hours but less than 5 hours 4 = 5 hours or more 9 = Any other response	54

104	COMPUTER	During a normal week of 7 days, how many hours a day (24 hours) does this child spend on the computer (including PlayStation, smartphone tablet), or on the internet (include Chat, Facebook, games, Twitter, YouTube)? 1 = Less than 1 hour 2 = 1 hour but less than 3 hours 3 = 3 hours but less than 5 hours 4 = 5 hours or more 9 = Any other response	55
105	PNEUMON	Has this child *ever* been diagnosed with pneumonia or bronchopneumonia? 1 = Yes 2 = No 9 = Any other response	56
106	TWIN	Is this child a twin? 1 = Yes 2 = No 9 = Any other response	57
107	OLDSIBS	How many older brothers and/or sisters does this child have? Note: Use code '99' for an invalid response.	58
108	YNGSIBS	How many younger brothers and/or sisters does this child have? Note: Use code '99' for an invalid response.	59
109	CNTRYBIR	Was this child born in [country of survey]? 1 = Yes 2 = No 9 = Any other response	60
110	CBIROTH	*If NO*, what country was this child born in? Note: Please enter the country name specified. Leave blank if no country was specified, or an illegible or invalid response was provided.	60a
111	YRSLIVED	How many years has this child lived in [country of survey]? Note: Use code '99' for an invalid response.	61
112	CHFLR01	What kind of floor covering is or was there in this child's bedroom at the following times *(tick as many as are applicable)* Wall to wall carpet. Enter: 1 = Ticked 2 = Not ticked 9 = Any other response For each of the four options (Never, At this time, During the first year of this child, At some other time) E.g. for: "At this time" and "During the first year of this child" enter: 2112	62

113	CHFLR02	Smooth floor (vinyl/linoleum, tiles, wood, concrete, etc.,) without a rug Enter: 1 = Ticked 2 = Not ticked 9 = Any other response For each of the four options (Never, At this time, During the first year of this child, At some other time) E.g. for: "At this time" and "During the first year of this child" enter: 2112	
114	CHFLR03	Smooth floor (vinyl/linoleum, tiles, wood, concrete, etc.,) with a rug Enter: 1 = Ticked 2 = Not ticked 9 = Any other response For each of the four options (Never, At this time, During the first year of this child, At some other time) E.g. for: "At this time" and "During the first year of this child" enter: 2112	
115	CHFLR04	No covering – soil or dirt Enter: 1 = Ticked 2 = Not ticked 9 = Any other response For each of the four options (Never, At this time, During the first year of this child, At some other time) E.g. for: "At this time" and "During the first year of this child" enter: 2112	
116	CHHMCHNG	Have you made any changes in your home to prevent the symptoms of allergies or asthma, or breathing problems in this child? 1 = Yes 2 = No 3 = Not applicable 9 = Any other response	63
117	TRUCFREQ	How often do trucks pass through the street where you live on weekdays? 1 = Never 2 = Seldom (not often) 3 = Frequently through the day 4 = Almost the whole day 9 = Any other response	64
118	MEAT	In the past 12 months, how often, on average did this child eat meat (e.g. beef, lamb, chicken, pork)? 1 = Never or only occasionally 2 = Once or twice per week 3 = Most or all days 9 = Any other response	65

119 SEAFOOD In the past 12 months, how often, on average did this child eat seafood (including fish)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

120 FRUIT In the past 12 months, how often, on average did this child eat fruit?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

121 VEGECOOK In the past 12 months, how often, on average did this child eat cooked vegetables (green and root)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

122 VEGERAW In the past 12 months, how often, on average did this child eat raw vegetables (green and root)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

123 PULSES In the past 12 months, how often, on average did this child eat pulses (peas, beans, lentils)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

124 CEREALS In the past 12 months, how often, on average did this child eat cereals (excluding bread)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

125 BREAD In the past 12 months, how often, on average did this child eat bread?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

126 PASTA In the past 12 months, how often, on average did this child eat pasta?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

127 RICE In the past 12 months, how often, on average did this child eat rice?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

128 MARGARIN In the past 12 months, how often, on average did this child eat margarine?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

129 BUTTER In the past 12 months, how often, on average did this child eat butter?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

130 OLIVEOIL In the past 12 months, how often, on average did this child eat Olive Oil?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

131 MILK In the past 12 months, how often, on average did this child drink milk (including flavoured milk)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

132 DAIRYOTH In the past 12 months, how often, on average did this child eat other dairy products (including cheese or yoghurt)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

133 EGGS In the past 12 months, how often, on average did this child eat eggs?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

134 NUTS In the past 12 months, how often, on average did this child eat nuts?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

135 POTATO In the past 12 months, how often, on average did this child eat potatoes?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

136 SUGAR In the past 12 months, how often, on average did this child eat sugar (including lollies, candies, sweets)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

137 BURGER In the past 12 months, how often, on average did this child eat fast food/burgers?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

138 FASTFOOD In the past 12 months, how often, on average did this child eat fast food excluding burgers?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

139 SOFTDRNK In the past 12 months, how often, on average did this child drink fizzy or soft drinks (include local terminology)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

140 CATNOW In the past 12 months, have you had a cat in your home? 66
1 = Yes
2 = No
9 = Any other response

141 DOGNOW In the past 12 months, have you had a dog in your home? 67
1 = Yes
2 = No
9 = Any other response

142 PARANOW In the past 12 months, how often, on average, have you given this child paracetamol (*use local terminology e.g. Acetaminophen, Panadol, Pamol, Tylenol*) for fever? 68
1 = Never
2 = At least once a year
3 = At least once per month
9 = Any other response

19.5.3 Coding of data for the adult age group

DATA COLLECTION

QUESTIONNAIRE DATA FOR THE ADULT GROUP

Form: 03 or 04

Version 1

Item	Name	Specification and Codes	Question #
1	FORM	Questionnaire age group THIS IS FORM TYPE 03 / 04 03 = All questionnaire data from adults of 13-14 year old students CODE 03 HERE 04 = All questionnaire data from adults of 6-7 year old students CODE 04 HERE	
2	VERSION	Form version 1	
3	COUNTRY	Country code	
4	CENTRE	Centre code	
5	SCHOOL	School identification number	
6	SERIAL	Serial number of respondent	
7	DINT	Date of interview / receiving response Use ddmmyyyy where: dd = Day mm = Month yyyy = Year Use code 99 or 9999 if information is not available for any of these components	
8	AGE	The actual age of the respondent (years) Use code 99 for an invalid response	
9	DBIRTH	Date of birth of the respondent Use ddmmyyyy where: dd = Day mm = Month yyyy = Year Use code 99 or 9999 if information is not available for any of these components	
10	SEX	Sex of the respondent 1 = Male 2 = Female 9 = Any other response	

11	RELAT	Relationship to the child who brought this questionnaire home from school 1 = Parent 2 = Grandparent 3 = Other 9 = Any other response	
12	RELATOTH	Other relationship to the child Note: Please enter the relationship name specified. Leave blank if no relationship was specified, or an illegible or invalid response was provided.	
13	LANGUAGE	Language of the questionnaire Use a three digit code for each language used in the centre from the list on page 186. If an appropriate language code is not available, please contact the GAN Global Centre (contact number page 214) to request a code number for your language.	
14	ADBRTHEV	Do you ever have trouble with your breathing? 1= never 2= only rarely 3= repeatedly, but it always gets completely better 4= continuously, so that your breathing is never quite right 9= Any other response	1
15	WHEZ12	Have you had wheezing or whistling in your chest at any time <u>in the past 12 months</u>? 1 = Yes 2 = No 9 = Any other response	2
16	NWHEZ12	How many attacks of wheezing have you had <u>in the past 12 months</u>? 1 = None 2 = 1 to 3 3 = 4 to 12 4 = More than 12 9 = Any other response	3
17	AWAKE12	<u>In the past 12 months</u>, how often, on average, has your sleep been disturbed due to wheezing? 1 = Never woken with wheezing 2 = Less than one night per week 3 = One or more nights per week 9 = Any other response	4
18	ADBRTHLS	Have you ever been breathless when the wheezing noise was present? 1 = Yes 2 = No 9 = Any other response	5

19	ADWOKE12	In the past 12 months, how often, on average, has your sleep been disturbed due to shortness of breath? 1 = Never 2 = Less than one night per week 3 = One or more nights per week 9 = Any other response	6
20	ADCOUH12	In the past 12 months, how often, on average, has your sleep been disturbed due to coughing? 1 = Never 2 = Less than one night per week 3 = One or more nights per week 9 = Any other response	7
21	SPEECH12	In the past 12 months, has wheezing ever been severe enough to limit your speech to only one or two words at a time between breaths? 1 = Yes 2 = No 9 = Any other response	8
22	ASTHMAEV	Have you ever had asthma? 1 = Yes 2 = No 9 = Any other response	9
23	ASTHDOC	Was your asthma confirmed by a doctor? 1 = Yes 2 = No 9 = Any other response	10
24	ASTHPLAN	Do you have a written plan which tells you how to look after your asthma? 1 = Yes 2 = No 9 = Any other response	11
25	ASTHAGE	How old were you when you had your first attack of asthma? Note: Use code '99' for an invalid response.	12
26	ASTHMA12	Have you had an attack of asthma in the past 12 months? 1 = Yes 2 = No 9 = Any other response	13
27	MEDPUFF	Have you used any inhaled medicines e.g. puffers (*use local terminology*) to help your breathing at any time in the past 12 months? (when you did not have a cold) 1 = Yes 2 = No 9 = Any other response	14

28	SABAFREQ	Please indicate how often you used of each of the inhaled medicines listed below in the past 12 months: Short Acting β-Agonists (SABA): Frequency 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	14a
29	LABAFREQ	Long Acting β-Agonists (LABA): Frequency 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
30	ICSFREQ	Inhaled Corticosteroids (ICS): Frequency 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
31	COMBFREQ	Combination ICS and LABA: Frequency [4] 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
32	MEDPILL	Have you used any tablets, capsules, liquids or other medicines e.g. pills (*use local terminology*) that you swallowed to help your breathing at any time <u>in the past 12 months</u>? (when you didn't have a cold) 1 = Yes 2 = No 9 = Any other response	15
33	MEDPIL1a	Please indicate how often you used of each of the tablets, capsules, liquids or other medicines e.g. pills (*use local terminology*) listed below **<u>in the past 12 months</u>**: Name [1] Note: Please enter the chemical name and local brand name that relates to this question.	15a
34	MEDPIL1b	Frequency [1] 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
35	MEDPIL2a	Name [2] Note: Please enter the chemical name and local brand name that relates to this question.	

36	MEDPIL2b	Frequency [2] 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
37	MEDPIL3a	Name [3] Note: Please enter the chemical name and local brand name that relates to this question.	
38	MEDPIL3b	Frequency [3] 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
39	MEDPIL4a	Name [4] Note: Please enter the chemical name and local brand name that relates to this question.	
40	MEDPIL4b	Frequency [4] 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response Note: If you require more columns to accommodate more medicine names, please follow the naming convention above where MEDPILxa is the name of the medicine and MEDPILxb is the frequency that medicine, and x is a sequential number uniquely identifying each variable. Use the existing codes to code each question: 1 = Only when needed 2 = In short courses 3 = Every day 9 = Any other response	
41	DOCBRT12	In the past 12 months, how many times have you urgently been to a doctor because of your breathing problems? 1 = None 2 = 1 to 3 3 = 4 to 12 4 = More than 12 9 = Any other response	16
42	ERBRTH12	In the past 12 months, how many times have you urgently been to an Emergency Department without being admitted to hospital because of breathing problems? 1 = None 2 = 1 to 3 3 = 4 to 12 4 = More than 12 9 = Any other response	17

43	HOSBRT12	In the past 12 months how many times have you been admitted to hospital because of your breathing problems. 1 = None 2 = 1 3 = 2 4 = More than 2 9 = Any other response	18
44	SCHOOL12	In the past 12 months, how many days was your usual activity (at work or in the home) limited because you had breathing problems? 1 = None 2 = 1 to 3 3 = 4 to 12 4 = More than 12 9 = Any other response	19
45	JOBWHEEZ	Have you ever worked in any job that caused wheezing or whistling in your chest? 1 = Yes 2 = No 9 = Any other response	20
46	NOJOBWHZ	Have you had to leave any of these jobs because they affected your breathing? 1 = Yes 2 = No 9 = Any other response	20a
47	HFEVEREV	Have you ever had hay fever? 1 = Yes 2 = No 9 = Any other response	21
48	HFEVDOC	Was your hay fever confirmed by a doctor? 1 = Yes 2 = No 9 = Any other response	22
49	ECZEMAEV	Have you ever had eczema? 1 = Yes 2 = No 9 = Any other response	23
50	ECZEDOC	Was your eczema confirmed by a doctor? 1 = Yes 2 = No 9 = Any other response	24

51	ADEDU	What level of education have you received? *(use local terminology)* 1 = Primary school 2 = Secondary school 3 = College, University or other form of tertiary education 9 = Any other response	25
		Does or did your home have visible moisture or mould spots on the walls or ceiling, anywhere in the home? (multiple answers are possible).	26
		26a. Moisture or damp spots	26a
52	DAMPNOW	At this moment 1 = Yes 2 = No 9 = Any other response	
53	DAMPPREG	During pregnancy of this child 1 = Yes 2 = No 9 = Any other response	
54	DAMPYNG	During the first year of this child 1 = Yes 2 = No 9 = Any other response	
55	DAMPOTH	At some other time 1 = Yes 2 = No 9 = Any other response	
		26b. Mould spots	26b
56	MOULDNOW	At this moment 1 = Yes 2 = No 9 = Any other response	
57	MOULDPRG	During pregnancy of this child 1 = Yes 2 = No 9 = Any other response	
58	MOULDYNG	During the first year of this child 1 = Yes 2 = No 9 = Any other response	
59	MOULDOTH	At some other time 1 = Yes 2 = No 9 = Any other response	

60	MOLDRM01	Where in the home do these moisture/damp/mould spots occur (more than one answer is possible) Living room 1 = Yes 2 = No 9 = Any other response	27
61	MOLDRM02	Parent's Bedroom 1 = Yes 2 = No 9 = Any other response	
62	MOLDRM03	Your child's Bedroom 1 = Yes 2 = No 9 = Any other response	
63	MOLDRM04	Kitchen 1 = Yes 2 = No 9 = Any other response	
64	MOLDRM05	Bathroom 1 = Yes 2 = No 9 = Any other response	
65	MOLDRM06	Other 1 = Yes 2 = No 9 = Any other response	27
66	MOLDSIZE	Does the total area affected by all moisture/damp/mould spots exceed the size of one postcard? 1 = Yes 2 = No 9 = Any other response	28
67	CFUEL01	What type of fuel does your household use daily for cooking: No food cooked at home 1 = Ticked 2 = Not ticked 9 = Any other response	29
68	CFUEL02	What type of fuel does your household use daily for cooking: Electricity 1 = Ticked 2 = Not ticked 9 = Any other response	

69 CFUEL03 What type of fuel does your household use daily for cooking:
Liquefied petroleum gas

1 = Ticked
2 = Not ticked
9 = Any other response

70 CFUEL04 What type of fuel does your household use daily for cooking:
Natural gas

1 = Ticked
2 = Not ticked
9 = Any other response

71 CFUEL05 What type of fuel does your household use daily for cooking:
Biogas

1 = Ticked
2 = Not ticked
9 = Any other response

72 CFUEL06 What type of fuel does your household use daily for cooking:
Kerosene

1 = Ticked
2 = Not ticked
9 = Any other response

73 CFUEL07 What type of fuel does your household use daily for cooking:
Coal/lignite

1 = Ticked
2 = Not ticked
9 = Any other response

74 CFUEL08 What type of fuel does your household use daily for cooking:
Charcoal

1 = Ticked
2 = Not ticked
9 = Any other response

75 CFUEL09 What type of fuel does your household use daily for cooking:
Wood

1 = Ticked
2 = Not ticked
9 = Any other response

76	CFUEL10	What type of fuel does your household use daily for cooking: Straw/shrubs/grass 1 = Ticked 2 = Not ticked 9 = Any other response	
77	CFUEL11	What type of fuel does your household use daily for cooking: Animal Dung 1 = Ticked 2 = Not ticked 9 = Any other response	
78	CFUEL12	What type of fuel does your household use daily for cooking: Agricultural crop residue 1 = Ticked 2 = Not ticked 9 = Any other response	
79	CSTOVTYP	What type of stove is **usually** used for cooking? 1 = Open fire 2 = Surrounded fire 3 = Surrounded fire with sunken pot 4 = Stove with combustion chamber 5 = Two or three pot stove 6 = Griddle stove 7 = Sunken pot stove 8 = Other 9 = Don't know 99 = Any other response	30
80	CSTOVOTH	What type of stove is usually used for cooking? Other (specify)_____ Note: Please enter the stove name specified. Leave blank if no name was specified, or an illegible or invalid response was provided.	
81	CSTOVCHM	Is smoke removed by hood or chimney? 1 = neither 2 = Hood 3 = Chimney 9 = Any other response	31
82	CHMCLEAN	When was chimney last cleaned? 1 = Never 2 = More than 3 months ago 3 = 1-3 months ago 4 = Less than 1 month ago 5 = Don't know 9 = Any other response	31a

83	CSTOVRM	Where is the cooking usually done? 1 = In a room used for living / sleeping 2 = In a separate room used as a kitchen 3 = In a separate building used as a kitchen 4 = Outdoors 5 = Other (specify)_____ 9 = Any other response	32
84	CSTRMOTH	Where is the cooking usually done? Other (specify)_____ Note: Please enter the room or area specified. Leave blank if no name was specified, or an illegible or invalid response was provided.	
85	CSTOVENT	What type of ventilation is present where the stove is used? 1 = Closed room 2 = Room with eaves spaces 3 = Room with open windows / doors 4 = Room with 3 or fewer walls 5 = Other (specify)_____ 9 = Any other response	33
86	CVENTOTH	What type of ventilation is present where the stove is used? Other (specify)_____ Note: Please enter the ventilation name specified. Leave blank if no name was specified, or an illegible or invalid response was provided	
87	HEAT	Do you heat your house when it is cold? 1 = Yes 2 = No 9 = Any other response	34
88	HFUEL01	What type of fuel do you <u>mainly</u> use for heating: Electricity 1 = Ticked 2 = Not ticked 9 = Any other response	35
89	HFUEL02	What type of fuel do you <u>mainly</u> use for heating: Liquefied petroleum gas 1 = Ticked 2 = Not ticked 9 = Any other response	
90	HFUEL03	What type of fuel do you <u>mainly</u> use for heating: Natural gas 1 = Ticked 2 = Not ticked 9 = Any other response	

91 HFUEL04 What type of fuel do you mainly use for heating: Biogas

1 = Ticked
2 = Not ticked
9 = Any other response

92 HFUEL05 What type of fuel do you mainly use for heating: Kerosene

1 = Ticked
2 = Not ticked
9 = Any other response

93 HFUEL06 What type of fuel do you mainly use for heating: Coal/lignite

1 = Ticked
2 = Not ticked
9 = Any other response

94 HFUEL07 What type of fuel do you mainly use for heating: Charcoal

1 = Ticked
2 = Not ticked
9 = Any other response

95 HFUEL08 What type of fuel do you mainly use for heating: Wood

1 = Ticked
2 = Not ticked
9 = Any other response

96 HFUEL09 What type of fuel do you mainly use for heating: Straw/shrubs/grass

1 = Ticked
2 = Not ticked
9 = Any other response

97 HFUEL10 What type of fuel do you mainly use for heating: Animal Dung

1 = Ticked
2 = Not ticked
9 = Any other response

98 HFUEL11 What type of fuel do you mainly use for heating: Agricultural crop residue

1 = Ticked
2 = Not ticked
9 = Any other response

99	HSTOVTYP	What type of stove is usually used for heating? 1 = Open fire 2 = Surrounded fire 3 = Surrounded fire with sunken pot 4 = Stove with combustion chamber 5 = Two or three pot stove 6 = Griddle stove 7 = Sunken pot stove 9=any other response	36
100	HSTOVOTH	What type of stove is usually used for heating? Other Note: Please enter the stove name specified. Leave blank if no name was specified, or an illegible or invalid response was provided.	
101	MEAT	In the past 12 months, how often, on average did you eat meat (e.g. beef, lamb, chicken, pork)? 1 = Never or only occasionally 2 = Once or twice per week 3 = Most or all days 9 = Any other response	37
102	SEAFOOD	In the past 12 months, how often, on average did you eat seafood (including fish)? 1 = Never or only occasionally 2 = Once or twice per week 3 = Most or all days 9 = Any other response	
103	FRUIT	In the past 12 months, how often, on average did you eat fruit? 1 = Never or only occasionally 2 = Once or twice per week 3 = Most or all days 9 = Any other response	
104	VEGECOOK	In the past 12 months, how often, on average did you eat cooked vegetables (green and root)? 1 = Never or only occasionally 2 = Once or twice per week 3 = Most or all days 9 = Any other response	
105	VEGERAW	In the past 12 months, how often, on average did you eat raw vegetables (green and root)? 1 = Never or only occasionally 2 = Once or twice per week 3 = Most or all days 9 = Any other response	

106 PULSES In the past 12 months, how often, on average did you eat pulses (peas, beans, lentils)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

107 CEREALS In the past 12 months, how often, on average did you eat cereals (excluding bread)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

108 BREAD In the past 12 months, how often, on average did you eat bread?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

109 PASTA In the past 12 months, how often, on average did you eat pasta?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

110 RICE In the past 12 months, how often, on average did you eat rice?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

111 MARGARIN In the past 12 months, how often, on average did you eat margarine?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

112 BUTTER In the past 12 months, how often, on average did you eat butter?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

113 OLIVEOIL In the past 12 months, how often, on average did you eat Olive Oil?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

114 MILK In the past 12 months, how often, on average did you drink milk (including flavoured milk)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

115 DAIRYOTH In the past 12 months, how often, on average did you eat other dairy products (including cheese or yoghurt)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

116 EGGS In the past 12 months, how often, on average did you eat eggs?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

117 NUTS In the past 12 months, how often, on average did you eat nuts?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

118 POTATO In the past 12 months, how often, on average did you eat potatoes?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

119 SUGAR In the past 12 months, how often, on average did you eat sugar (including lollies, candies, sweets)?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

120 BURGER In the past 12 months, how often, on average did you eat fast food/burgers?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

121 FASTFOOD In the past 12 months, how often, on average did you eat fast food excluding burgers?
1 = Never or only occasionally
2 = Once or twice per week
3 = Most or all days
9 = Any other response

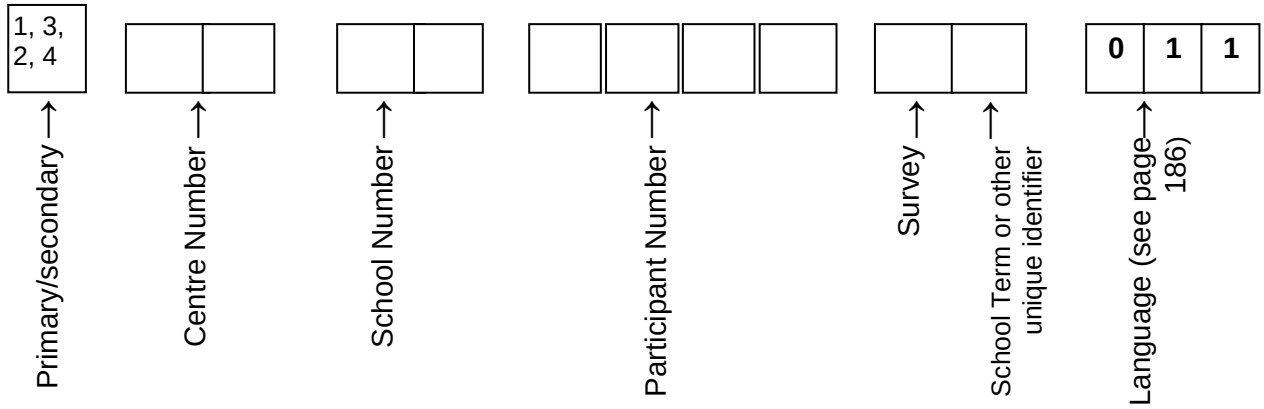
122	SOFTDRNK	In the past 12 months, how often, on average did you drink fizzy or soft drinks (include local terminology)? 1 = Never or only occasionally 2 = Once or twice per week 3 = Most or all days 9 = Any other response	
123	TOBACEVA	In the past, have you smoked tobacco on a daily basis, less than daily, or not at all? 1 = Not at all 2 = Less than daily 3 = Daily 9 = Any other response	38
124	TOBACNOW	Do you currently smoke tobacco on a daily basis, less than daily, or not at all? 1 = Not at all 2 = Less than daily 3 = Daily 9 = Any other response	39
125	TOBACAGE	If you have smoked tobacco ever, either daily or less than daily, at what age did you first smoke cigarettes, cigars, or pipe? Note: Use code '99' for an invalid response. Note: Use code '99' for not applicable	40
126	TOBACNUM	On average over the entire time you have smoked, how many cigarettes, cigars, or pipe did you smoke each day? Note: Use code '99' for an invalid response. Note: Use code '99' for not applicable	41
127	TOBACNAR	Do you smoke water pipe (*use local terminology e.g. bong, crack pipe, hookah, hubble-bubble, narghile, shisha, vapourizer, water vapour*) at home? 1 = Yes 2 = No 9 = Any other response	42

20. Detailed Guidelines for Fieldworkers

The following detailed guidelines are intended to assist fieldworkers to implement the survey. They are a guide only as it is recognised that each centre is unique and faces different situations and problems. We hope that they may be useful for some centres.

20.1 Identifying boxes 'for office use only'

To identify the age group, centres, schools, participants, survey number school term and language used, an 'office use only' set of boxes was designed. These boxes were placed at the top of the front page (example page 185) and ensured that each participant, school and centre had a unique number when entering data into a computer. However it is vital that the questionnaires are linked in some way if the ADULT questionnaire is used.



The questionnaires have a **1** pre-printed in the first box for secondary school pupils and **3** for adults of secondary students, **2** for 6-7 year olds and **4** for primary adults. The language is coded as per page 186 (e.g. 011 for English, 061 for Xhosa). Other boxes were completed by the fieldworker.

The participant number and survey number should be entered by hand before the questionnaires are handed out to the students and recorded on the school lists. The six New Zealand centres were numbered as follows:

CENTRE:

1 = Auckland	2 = Wellington
3 = Christchurch	4 = Hawke's Bay
5 = Nelson	6 = Bay of Plenty

SCHOOL:

Enter a unique number between 1 and 99 for each sampled school in each centre. Numbers can be repeated for primary and secondary schools as each form type can be identified by the **1, 2, 3** or **4** in the first box. Start number units in the right hand box.

0	**2**

Example

PARTICIPANT:

Enter a unique number from 1 for each sampled child and adult (if surveyed) in each school. Start number units in the right hand box. For each school, numbering can begin from 1 or continue on from school to school. If the adults are surveyed, it is VITAL that the student and the corresponding adults are linked in some way.

0	0	1	4

Example

SURVEY:

Enter **1** in the first box for the first send out.

Enter **2** in the first box for the second send out

The second box is for the School Term or other identifying mark.

1	

Example

TERM:

The second box, next to the survey number is used for the School Term that the survey was carried out in. This box could also be used to record some other method of identifying the time of year, such as season.

	3

= Term 3 2015

Example

	1

= Term 1 2016

Example

As the names are not entered onto the computer, the numbers in these boxes proved to be a successful way of keeping track of each questionnaire. The numbers were entered alongside the students name on the class lists and proved a successful tracking method when a questionnaire needed checking at a later date.

Office use only

2		1			2			1	4		1	3		0	1	1	
Primary School		Auckland			Mt Carmel School			Sarah Smith			Survey number 1	Term Number 3		Language code English			

20.2 Example New Zealand demographic questions

NB – Adolescent example can be used for 6/7 year age group also

NEW ZEALAND SURVEY OF BREATHING, NOSE AND SKIN PROBLEMS

QUESTIONNAIRE FOR ADOLESCENTS

Office Use Only | 1 | | | | | | | | | | | 0 | 0 | 8 |

Adult Participant Number:1 | | | | | Adult Participant Number:2 | | | | |

Instructions for completing the questionnaire

On this sheet are questions about your name, school and birth date. Please write in your answers to these questions in the space provide.
If you make a mistake put a cross in the the box and tick the correct answer.
Only tick one option unless otherwise instructed.

Examples of how to mark the questionnaire Age 13 Years

	Yes	No
To answer "no"	☐	☑
To answer "yes"	☑	☐

NEW ZEALAND SURVEY OF BREATHING, NOSE AND SKIN PROBLEMS

QUESTIONNAIRE FOR ADULTS

Office Use Only | 3 | | | | | | | | | | | 0 | 0 | 8 |

Instructions for completing the questionnaire

On this sheet are questions about your name, school and birth date. Please write in your answers to these questions in the space provide.
If you make a mistake put a cross in the the box and tick the correct answer.
Only tick one option unless otherwise instructed.

Examples of how to mark the questionnaire Age 31 Years

	Yes	No
To answer "no"	☐	☑
To answer "yes"	☑	☐

20.3 Language codes:

Code	Language	Code	Language
1	Afrikaans	32	Lithuanian
2	Albanian	33	Macedonian
3	Amharic	34	Malay
4	Arabic	35	Maltese
5	Basque	36	Malyalam
6	Bulgarian	37	Marathi
7	Catalan	38	Moroccan Arabic
8	Chinese	39	North Sotho
9	Croatian	40	Norwegian
10	Dutch	41	Persian
11	English	42	Polish
12	Estonian	43	Portuguese
13	Fijian	44	Romanian
14	Filipino	45	Russian
15	Finnish	46	Samoan
16	French	47	Serbian
17	Georgian	48	Sinhala
18	German	49	Spanish
19	Greek	50	Swedish
20	Guarani	51	Tagalog
21	Gujarati	52	Tamil
22	Hebrew	53	Thai
23	Hindi	54	Tokelauan
24	Hungarian	55	Tongan
25	Indonesian	56	Turkish
26	Italian	57	Ukrainian
27	Japanese	58	Urdu
28	Kannada	59	Uzbek
29	Korean	60	Vietnamese
30	Kyrgyz	61	Xhosa
31	Latvian		

20.4 Protocol for collecting height and weight measurements for adolescents and children (strongly recommended)

Comment or instructions to respondents

"I'm going to take two measurements – one of your height and the other of your weight. Please take off your shoes"

20.4.1 Height Protocol

Measurements are taken on a hard surface[135]. As only one measurement of height is taken it is very important that the protocol is adhered to.

Definition: The perpendicular distance between the top of the head (the vertex) and the bottom of the feet.

Equipment required: Portable calibrated stadiometer

Method

Ask the participant to stand on the centre of the base with their back to the stadiometer. Ask them to put their feet together and move back until their heels touch the bottom of the stadiometer upright. Their buttocks and upper part of their back should also be touching the stadiometer upright. Their head does not have to touch the stadiometer. The participant's head should be in the Frankfort plane. This is achieved when the lower edge of the eye socket (the Orbitale) is horizontal with the Tragion [see Figure 1]. The vertex will be the highest point on their head. If their head is not aligned properly, (and for most participants it probably won't be), ask them to raise or lower their chin until it is in the Frankfort Plane.

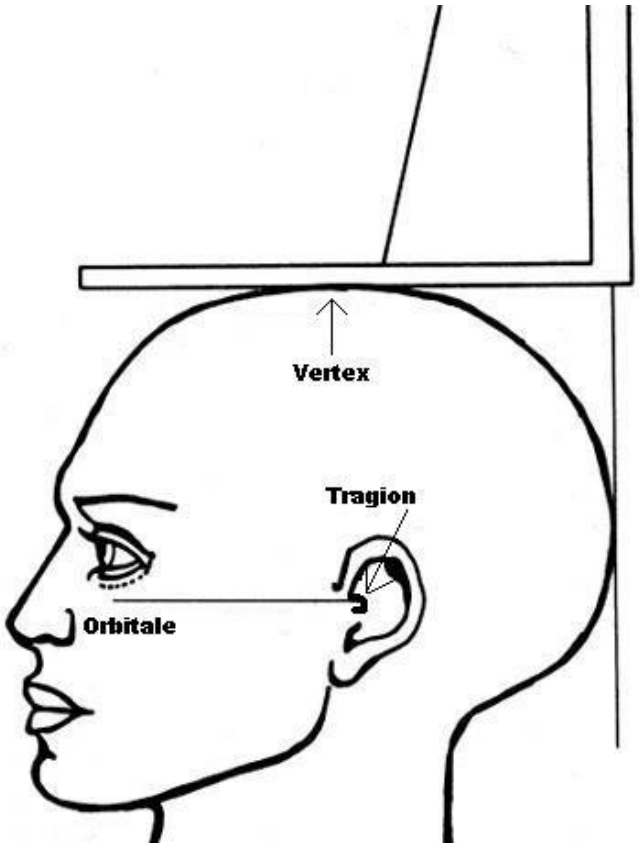


Figure 1: Head in the Frankfort Plane

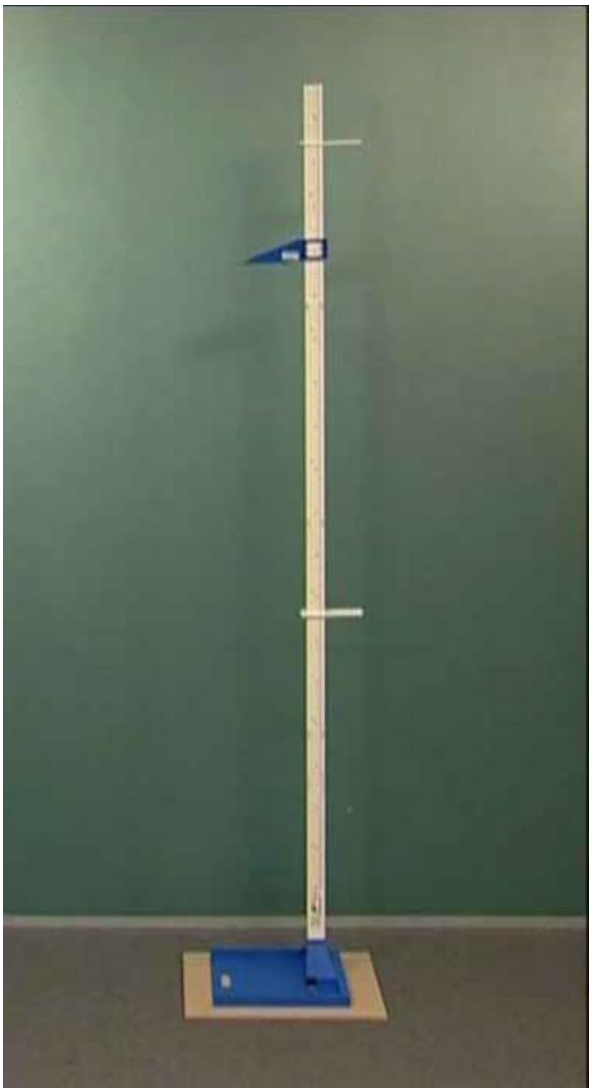
Source: Adapted from the ISAK Manual, 2001.

When you are happy that the participant is in the correct position, ask them to take a deep breath and hold it. Lower the headboard until it is in contact with the head. Compress the hair if needed. Make sure you don't bend the headboard from the horizontal, nor move the participant's head. Hold the headboard firmly at its final position and take the reading to the nearest 0.1 cm.

When you have completed the reading, ask the participant to step away from the stadiometer. Record your reading on the questionnaire and note which measurement you used (metres or centimetres or feet and inches). Note: If the respondent is as tall as you, or taller, you will need to stand on a box to judge when the head is in the right position and to take the reading, as both these actions need your eyes to be in the same horizontal plane as the object you are looking at.

Comment or instructions to participants

"Please stand on the centre of the base with your back to the stadiometer. Put your feet together and move them back until your hells touch the back of the stadiometer. Stand up straight and look straight ahead." (*If their head is not horizontal, say…*) "Please raise (or lower) your chin. Take a deep breath and hold it. That's fine you can breathe normally now and step away from the stadiometer".



20.4.2 Weight Protocol

Definition:

Weight is the force the matter in the body exerts in a standard gravitational field.

Equipment required:

Calibrated weighing scales

Setting the scales

Place the scales on a hard flat surface[135]. If carpet is the only floor covering in the measurement location, put a board down on the carpet and place the scales on the board.

Method

As only one measurement is taken it is important that this protocol is adhered to. Press firmly on the centre of the scales to turn them on. Once the zeros appear, ask the Participant to stand on the scales. Ask the participant to stand on the centre of the scales without support, with their arms loosely by their sides, head facing forward and with their weight distributed evenly on both feet. A reading will appear in a few seconds. The numbers will change, and then stop. Once the numbers have stopped, **take the reading to the nearest 0.1 kg**.

Ask the participant to step off the scale. Record the reading on the questionnaire and mark which measurement was used (kilograms or stones or pounds).

Comment or instructions to respondents
"Wait until it reads zero."
"Please step onto the centre of the scale with your weight on both feet."
"Relax."
"Thank you. You can step off now."

20.5 Example Global Asthma Network Centre Report for Phase 1 Fieldwork - Global Surveillance: Prevalence, Severity, Management and Risk Factors

This document has been updated and additional information is required. Please see the online version at www.globalasthmanetwork.org/surveillance/manual/centre_report.php

Country Name:_____Country and Centre Number:_____

Centre Name:_____ Age group:_____

Principal Investigator:_____Dates of data collection:_____

National Co-ordinator:_____ Date report completed:_____

(if applicable)

Local ethical approval granted: Date:_____

Name of Local Ethics Committee:__NB: See online centre Report for additional information required_____

1 SAMPLING FRAME AND SCHOOLS

1.1 Which of the sampling frame categories is most appropriate for your study?:

Note: The sampling frame is the geographic area from which the schools were selected, as well as other criteria that defines which schools were available for selection.

Please tick the box that best describes your sampling frame:

Geographic area only	☐
Geographic area and specific school type	☐
Geographic area and specific ethnic group	☐
Geographic area and specific language	☐
Other (please specify in 1.2 below)	☐

1.2 Please describe the sampling frame for your centre:

Note: Please use similar terms to those in these examples: “All schools in the Auckland area; Some schools in the Western Health District”; “Private schools in the Canterbury region”.

1.3. Have you sent a detailed map showing the boundaries of your Phase 1 centre to the GAN Global Centre?

Yes ☐
No ☐

Ideally, the map will be a vector or shape file compatible with Geographic Information Software such as ArcGIS (available from http://www.**arcgis**.com/). If this is not possible, a hand drawn and scanned map drawn on a commercial street map or printout of google maps or similar will be acceptable.

NB: If this centre participated in ISAAC please check with the GAN Global Centre to enquire if the ISAAC map provided was of sufficient quality to be used for this study

If you require further information regarding this format please contact us. info@globalasthmanetwork.org

1.4 Were any schools excluded from the sampling frame before being approached to participate? For example, schools might be excluded if the researchers know that they are located in areas with difficult access or if the children are unable to participate. These schools would then be left out of the sampling frame and not included in the selection process.

Yes ☐
No ☐

1.5 If yes, please give your reasons why these schools were excluded from the sampling frame.

1.6 Did you reject any schools after they had been selected?
For example a school may have agreed to participate and you then found that the students were unable to complete the questionnaire because they were disabled.

Yes ☐
No ☐

1.7 Please give your reasons why you rejected these schools

1.8 How many students (of your selected age group) were there in the rejected schools?

_____

1.9 Please give:

A - The total number of schools (for this age group) in your selected sampling frame? _____

B - The total number of children (for this age group), that were in the schools in the sampling frame? _____

1.10 Did you approach all schools (for this age group) in your sampling frame? Yes ☐ No ☐

If you answered No:

1.11 Were the schools selected using a random sampling method? Yes ☐ No ☐

1.12 Was there stratification by school type, followed by random sampling of schools? For example, you may have stratified the population according to whether they attend public or private schools. Yes ☐ No ☐

1.13 If the schools were not selected using a random sampling method, please describe the method used

.

2 CLASSES AND CHILDREN

2.1 Which overall approach did you use when selecting children within the schools?
Please refer to attached notes for clarification.

Grade/level/year ☐
age group ☐
Other ☐

2.2 If you answered '**Other**' for question 2.1 please describe your approach to selecting the children within the schools:

2.3 Which children were selected from the grade/level/year **or** age group?

- All children ☐
- Some children ☐

2.4 If you answered 'some children' to question 2.3 please describe how these children were selected.

2.5 How many grades/levels/years **or** years of age did you select?

- One ☐
- Two ☐
- Other ☐

2.6 If you answered 'Other' to question 2.5 please describe how many grades/levels/years **or** years of age you selected.

3 DATA ENTRY

3.1 Was at least 10% of the data double entered or scanned?

- Yes ☐
- No ☐

Double entry is a common method of data entry that minimises data entry errors. It is expected that at least 10% of the data is double entered.

The data is entered two times, preferably by two different people. The two versions of the data set are compared and any differences checked against the original questionnaire.

If you answered 'YES' please go to question 4.

3.2 If you answered '***NO***' to question 3.1, please describe the data entry method you used

3.3 If you answered '***NO***' to question 3.1 can you check (and/or have you checked) the data for entry errors?

Yes ☐
No ☐

If you answered 'YES' to question 3.3

3.3A Please describe your method for checking for data entry errors

4 CHANGES TO DATA AFTER DATA ENTRY

4.1 Were any changes made to the demographic data after the questionnaires were completed?

Yes ☐
No ☐

The demographic data is the information concerning the age, sex, date of birth and date of interview for each child. You may have changed this data if there was incorrect information written and you had checked this against the information available from the school.

4.2 If you answered yes to question 4.1, please describe the changes made to the demographic data.

4.3 Were any changes made to the data from the asthma, rhinitis, eczema or video questionnaires?

Yes ☐
No ☐

If you answered 'NO' to question 4.3, please go to question 5, participation rates

4.4 If you answered '***YES'*** to question 4.3, were these changes due to data entry error?

Yes ☐
No ☐

If you answered 'YES', to question 4.4, please go to question 5, participation rates.

4.5 If '***NO***': Please describe the reasons why you changed the data.

4.6 What percent of the observations had changes made to the asthma, rhinitis, eczema or video questionnaire? _____

4.7 Can the data be returned to its original form? Yes ☐ No ☐

4.8 Has a copy of the data without the changes been submitted to the GAN Global Centre? Yes ☐ No ☐
(if '***NO***' could you please send the GAN Global Centre a copy)

4.9 Have you kept a copy of the data without the changes? Yes ☐ No ☐

5 PARTICIPATION RATES

5.1 How many schools participated in your centre? _____

5.2 What was the total number of children selected to participate in these schools?

_____

5.3 Did you include children younger and older than the age group? Yes ☐ No ☐

5.3A. Has the data from these children been included in the data submitted to the GAN Data Centre? Yes ☐ No ☐

5.3B. If NO, is this data available on request by the GAN Global Centre? Yes ☐ No ☐

5.4 How many schools refused to participate after they had been selected? _____
(answer 0 if no schools refused to participate).

5.4A. How many students of your selected age group were there in the schools that refused to participate? _____

5.5 What is the total number of students that participated? This will be the same number as in the data that has been submitted to the GAN Global Centre. _____

5.6 How many students (or parents) did not participate? This answer and the answer to question 5.5 should add up to the number you gave for question 5.2. _____

5.7 Did you have any difficulties getting the number of children that you needed for the required participation rate? Yes ☐ No ☐

If *'**YES**'* – What difficulties did you encounter?

5.8 Did you include the parents/guardians of this age group? Yes ☐ No ☐

5.9 How many parents/guardians participated in this survey?

_____

6. TRANSLATION OF QUESTIONNAIRES

6.1 Did you use the English language questionnaire for this age group? Yes ☐ No ☐

6.2 Did you use any translations of the English language questionnaire for this age group? Yes ☐ No ☐

If you answered 'NO' please go to question 7

6.3 How many languages were used in your centre for this age group?

Number: ☐

6.4 Please name the languages that you used for this age group

6.5 Did you develop the translation/s in your centre? Yes ☐ No ☐

6.5A. If you answered '***NO***' to question 6.5, where did you obtain these?

Centre Name: _____

Collaborators Name _____

Now, please go to question 7

6.6 If you answered '***YES***' to question 6.5, was the translator familiar with asthma and allergy terminology? Yes ☐ No ☐

6.7 Were the local community approached to help with difficult words and concepts? Yes ☐ No ☐

6.8 Were other centres in the country or region involved in preparation of the translated questionnaires? Yes ☐ No ☐

6.9 If you answered '***YES***' to question 6.8, please list the other centres

6.10 Were the translated questionnaires translated back to English by an independent translator? Yes ☐ No ☐

If '***YES***', please give name:_____

6.11 Were the translated questionnaires pilot tested? Yes ☐ No ☐

6.12 Has a copy of the translation been sent to the GAN Global Centre? (If a copy has not yet been sent, we would appreciate receiving a copy). Yes ☐ No ☐

6.13 Could you please give the proportion of questionnaires that were used in each language

%	Language

7. VIDEO (Questions 7.1-7.5 For 13-14 year age group only)

7.1 Did you use the international video in all the secondary schools that you went to?

Yes ☐
No ☐

7.1A If '***NO***', please give the reasons why it was not used

7.2 How many schools did the video questionnaire? _____

7.3 How many schools did **NOT** do the video questionnaire? _____

7.4 How many students completed the video questionnaire? _____

7.5 What spoken language(s) was (were) used for the video questionnaire? (please specify)

8. Additional questions

8.1 Did you use additional questions following the Core questions for either age group?

Yes ☐
No ☐

If '***YES***' could you please send a copy of these questions to the GAN Global Centre.

Thank you for completing this report. This will enable the GAN Global Centre to accurately document the methodology for each centre for the analysis and writing of manuscripts. The GAN Global Centre would appreciate this Centre Report being returned to the GAN Global Centre by either email (info@globalasthmanetwork.org) or completed on-line or by fax 64 9 3737602 or post. We will enter the details into our database and send you a completed copy for you to check and keep for your records.

Best wishes from Philippa Ellwood, Eamon Ellwood and Innes Asher.

The Global Asthma Network Global Centre

Department of Paediatrics: Child and Youth Health, The University of Auckland, Private Bag 92019, Auckland, New Zealand.

Email: info@globalasthmanetwork.org

Phone 64 9 3737599 extension 6451:Fax 64 9 3737602

We would welcome further comment regarding any difficulties that you encountered

20.6 Guidelines for the 13/14 year age group survey

1. When a randomly selected list of schools has been generated for your centre (some centres will use all schools therefore a random list will not be necessary), a phone call to each school secretary to ask the Principal's name will mean that a personalised letter can be sent (example page 118). Include a sample information letter to parents/guardians, questionnaires for pupils and adults, a copy of any translations and any other relevant information, for example a copy of the local ethics committee approval.

2. Keep a record of every contact that is made with the schools, the dates of phone calls, dates the letters are sent and names of all contact people especially the secretary as this may be the person you have most contact with.

3. Ring the school one week after the letter has been sent to speak to the Principal and discuss the process that would be undertaken for approval to be given. If necessary arrange a meeting to speak personally to the Principal and others (e.g. Board of Trustees, teachers).

4. When permission has been granted, arrange a time to visit to discuss the logistics of running the survey and identify who the school co-ordinator for the survey is to be. Some schools may wish to undertake the survey using an online system, whereby the school sends the information letters out to parents via email. In most centres, passive consent will be considered adequate by local Ethics Committees, however this needs to be clarified by each individual centre. Request that a list of the students in the classes involved (or age group) is available for your use and if possible, obtain date of birth, gender and ethnicity on this list. As it is anticipated that some students will be absent on the first visit, arrange a date for a follow up visit.

5. If passive consent is approved by the local Ethics Committee, refusals will be accepted by:

   a) A phone call to the researcher (or appropriate person) by the Parent/Guardian;

   b) Sending the information letter back to the school (or researcher) with a written response and including the students name; or

   c) Verbal refusal from the student (as long as the excuse is plausible).

6. If written consent is required, this will be an appropriately worded section, attached to the information letter, asking the parent/guardian to return the slip to the school or another appropriate place. The class lists provided by the school should then be marked to identify the students who are not to participate with the rest of the class.

7. **STUDENT** survey completion (at school)
   At a time to suit the school, the fieldworker(s) arrive bringing with them the printed questionnaires, and a copy of the video. Some schools like the survey to be done in individual classes of students, whereas others prefer the students to congregate in a large area such as the school hall, and undertake the survey together. Either method is permissible.

   The demographic information given by the students can ideally be checked against the information supplied by the school e.g. date of birth and age at the finish of the survey when the height and weight measurements are taken (see 8). Any wrong

information given by the student or the school can then be checked.

8. The video questionnaire must always be shown after the written questionnaires and should be tested prior to the students being present to ensure that the sound and quality are of adequate quality to be heard and seen by all the students (video questionnaire Pages 44 & 209). Height and weight measurements are then taken.

9. Check that the written questionnaire intended for the 13/14 year olds is identified. For New Zealand, we have office use only boxes to code the age group, the year term used, how many surveys were issued to the student and location and language (example pages 183-184).Codes identifying the related adult questionnaires can be added to the 13-14 year questionnaire.

10. Ensure that each student has a pen or pencil to write with (the survey is often done outside the home classroom).

11. A short explanation is beneficial before handing out the questionnaires. Students are more attentive if the researcher shows them the questionnaire and explains it simultaneously. Instructions not to answer the video questionnaire until directed, not to discuss the questions (or answers) and to raise their hand if they have any queries are necessary to ensure privacy. Instructions on how to alter an incorrect answer should also be given.

12. Survey forms are then given out either for general issue to the class who will complete the demographic data and answer the questions.

13. Principles to follow regarding fielding questions from participants may be helpful (see standardised approach to fielding questions on page 201). It is important to answer questions individually and quietly so as not to influence the other students.

14. Checking the front page before students leave is advantageous and allows the student to make the corrections. However, this is not always possible. A check may be done later and the questionnaire reissued to the student on the second visit if practicable.

15. If questionnaires have not been completed in a comprehensible fashion, they could be returned to the original student for one further attempt (this may be logistically difficult).

16. **Once the questionnaire is completed, the core questionnaire responses must not be changed by researchers/field workers under any circumstances.** The demographic information on the front page may be corrected if errors are detected and the correct answer can be confirmed from school information. Any changes must be noted on a correction sheet (see example page 213).

17. Students must not be allowed to change their responses to the written questionnaire after viewing the video.

18. Confirm with the coordinating teacher the date of the return visit for absentees and, if yet to be made, organise the date, preferably within two weeks of the first visit. Further questionnaires that have been returned by the adults can be collected then.

19. **ADULT** survey completion of the adolescent (strongly recommended)

If the Adult questionnaire is used, it is vital that the questionnaires can be linked to the adolescent survey by adding the adult questionnaire numbers to the adolescent survey. Please see the data coding section on page 167 and "identifying boxes for office use only" on page 183. Two Adult questionnaires are issued and it must be made clear that if there is only one adult in the household, the second questionnaire must be returned to the school together with the completed Adult questionnaire with the adolescent that brought them home for completion.

The two possible methods of sending the questionnaires home for adult completion are:

Option One: Handing out the blank surveys to the class (or age group) and requesting that they take these home for parent/guardian completion. The questionnaires will be returned to school by the same mechanism. The fieldworker later marks those who have returned them off against the students name on the lists provided by the school and creates a chart for those that did not complete the survey. This chart is then presented to each teacher on the second visit or posted prior to the second visit and the reason noted down.

Option Two: Sending the information letters and ADULT questionnaires to parents/guardians by email, according to the wishes and processes of the school. These are completed on line and returned to school via email.

If, on the second visit, the researcher surveys a class or classes that had been absent at camp or away entirely, they should be classified as first surveys and only the students who were absent from their class on the first visit, will be second surveys (if centres are collecting this information). See chart below for recording absentees.

Reasons for non participation

Student Name	Class Number	Absent	Not in age group	Refusal
Joe B	AR	√		
Sam T	AR		√ 12 years	
Andy G	BT	√		
Mark S	GF		√ 15 years	
Philip R	GF	√		
Michael T	GF			√ verbal from student

20. A letter of thanks from the researcher/field worker to the Principal and coordinating teacher is appropriate at this stage. Let them know that they will be notified of the results when they become available.

20.6.1 Standardised approach for fielding questions

Some students will ask questions relating to their understanding of the questions or the response required during the survey conducted in secondary schools.

The teacher(s) should not be involved in explaining the study or the method of answering questions. This must be the responsibility of the research field worker(s) who have been carefully briefed.

The principles to follow are:

1. Speak only to the individual who has the problem (identified by a raised hand). The first step is to read the written question out softly, exactly as it is written.

2. *If the student is still unable to answer the question,* the next step is to encourage them to think about the meaning.

3. *If the student is still unable to answer the question,* the next step is to give a little information without explaining the response required.

4. *If the student is still unable to answer the question,* the last step is to state that if the student really does not know how to respond, they should leave the question blank.

   If a student with learning difficulties has a helper who wishes to assist that child, the above guidelines should be followed.

Below are some examples for questions that commonly cause difficulties:

Question 1

Have you ever had wheezing or whistling in the chest at any time in the past?

Stage 1

Student response: **"*What is wheezing or whistling?"***

Researcher response to individual student only, say aloud but in a quiet voice:

"Have you ever had wheezing or whistling in the chest at any time in the past?" (i.e. read the question exactly as it is written).

Stage 2

Student response: ***"What is wheezing or whistling?"***

Question 1 continued

Researcher response to individual student only, say aloud but in a quiet voice:

"Words mean different things to different people. I want to know what you understand by this. Interpret it the best you can."

Stage 3

Student response: ***"I don't understand wheezing or whistling."***

Researcher response to individual student only, say aloud but in a quiet voice:

"Wheezing or whistling is related to your breathing. You would probably know if you have had it."

Stage 4

Student response: ***"I still don't understand this. I don't know if I have ever had it."***

Researcher response to individual student only, say aloud but in a quiet voice:

"If you really don't know then leave it blank."

Question 6

Have you ever had asthma?

Stage 1

Student response: **"*What is asthma?"***

Researcher response to individual student only, say aloud but in a quiet voice:

"Have you ever had asthma?" (i.e. read the question exactly as it is written).

Stage 2

Student response: ***"What is asthma?"***

Researcher response to individual student only, say aloud but in a quiet voice:

"Words mean different things to different people. I want to know what you understand by this. Interpret it the best you can."

Stage 3

Student response: ***"I don't understand asthma."***

Researcher response to individual student only, say aloud but in a quiet voice:

"Asthma is related to your breathing. You would probably know if you have had it."

Stage 4

Student response: ***"I still don't understand this. I don't know if I have ever had it."***

Researcher response to individual student only, say aloud but in a quiet voice:

"If you really don't know then leave it blank."

Question 16

In the last 12 months have you had a dry cough at night, apart from a cough associated with a cold or chest infection?

Stage 1

Student response: **"*What is a dry cough?"***

Researcher response to individual student only, say aloud but in a quiet voice:

"In the last 12 months have you had a dry cough, apart from a cough associated with a cold or chest infection?" (i.e. read the question exactly as it is written).

Stage 2

Student response: ***"What is a dry cough?"***

Researcher response to individual student only, say aloud but in a quiet voice:

"Words mean different things to different people. I want to know what you understand by this. Interpret it the best you can."

Stage 3

Student response: ***"I don't understand what a dry cough is."***

Researcher response to individual student only, say aloud but in a quiet voice:

"It is not a wet one. There is no phlegm. It is just a dry cough. You would probably know if you have had it."

Stage 4

Student response: ***"I still don't understand this. I don't know if I have ever had it."***

Researcher response to individual student only, say aloud but in a quiet voice:

"If you really don't know then leave it blank."

Question 22

Have you ever had hay fever?

Stage 1

Student response: **"*What is hay fever?"***

Researcher response to individual student only, say aloud but in a quiet voice:

"Have you ever had hay fever?" (i.e. read the question exactly as it is written).

Stage 2

Student response: ***"What is hay fever?"***

Researcher response to individual student only, say aloud but in a quiet voice:

"Words mean different things to different people. I want to know what you understand by this. Interpret it the best you can."

Stage 3

Student response: ***"I don't understand hay fever."***

Researcher response to individual student only, say aloud but in a quiet voice:

"Hay fever affects your nose. You would probably know if you have had it."

Stage 4

Student response: ***"I still don't understand this. I don't know if I have ever had it."***

Researcher response to individual student only, say aloud but in a quiet voice:

"If you really don't know then leave it blank."

Question 29

Have you ever had eczema?

Stage 1

Student response: **"*What is eczema?"***

Researcher response to individual student only, say aloud but in a quiet voice:

"Have you ever had eczema? (i.e. read the question exactly as it is written).

Stage 2

Student response: ***"What is eczema?"***

Researcher response to individual student only, say aloud but in a quiet voice:

"Words mean different things to different people. I want to know what you understand by this. Interpret it the best you can."

Stage 3

Student response: ***"I don't understand eczema."***

Researcher response to individual student only, say aloud but in a quiet voice:

"Eczema affects your skin. You would probably know if you have had it."

Stage 4

Student response: ***"I still don't understand this. I don't know if I have ever had it."***

Researcher response to individual student only, say aloud but in a quiet voice:

"If you really don't know then leave it blank."

20.6.2 Instructions for conducting the video questionnaire in schools (strongly recommended)

Research staff and field workers should not use the term “asthma” when testing in the school. The phrase “breathing” or “a survey about breathing, skin and nose problems” are acceptable terms to use prior to showing the video.

- Ensure video is working and the sound and picture quality is adequate if possible prior to the students being present. PLEASE VIEW THE VIDEO BEFORE YOU SHOW IT TO ANY GROUPS OF STUDENTS, SO THAT YOU ARE FAMILIAR WITH THE CONTENT AND LAYOUT.
- The showing of the video must **follow** the completion of the written questions on wheezing rhinitis and eczema and not be shown before.
- Hand out the answer sheets, and ask the students to fill in their name, age, sex and date of birth before the video starts.
- Ask the students not to discuss with their friends or the person they are sitting next to, the answers they give.
- Instruct students not to begin completing the video questions until you request them to.
- Play the video.

20.6.3 The video questionnaire (AVQ 3.0)

The video questionnaire consists of questions, relating to five video scenes of young people with breathing problems. The questions require yes/no answers.

The video questionnaire starts with an initial introductory section, which is read out by the fieldworker. The first video scene is introduced and then shown.

Following this video scene, the video screen becomes blank, and a three part question relating to the scene just viewed, is read out. This sequence of scene introduction, followed by showing the scene, then followed by a three part question relating to the scene, is repeated for each of the five scenes.

The whole video takes 7 minutes to show.

- When the screen becomes blank start reading the instructions (refer page 44).
- Each time you hear the tone, move on to the next item on the instructions and read it out.
- You will note that some items are one sentence only, whereas others involve several sentences.
- Read all the instructions each time.
- Read the questions after the scenes slowly.
- After the video has been shown, ask the students if any have seen the video before. If any have, ask them to put a “V” on the top right hand side of the questionnaires on the front.
- When collecting the questionnaires, ensure demographic questions are complete.
- Remind the coordinating teacher that you will return to administer the questionnaire to those students not present on the day.

See page 44 for the verbal instructions that are to be read out as the video is played to the 13/14 year old students.

20.7 Suggested guidelines for the 6/7 year age group survey

1. When a randomly selected list of schools has been generated for your centre (some centres will use all schools therefore a random list will not be necessary), a phone call to each school secretary to ask the Principal's name will mean that a personalised letter can be sent (example page 119). Include a sample of the information letter to parents/guardians, questionnaires, a copy of any translations and any other relevant information, for example a copy of the local ethical approval.

2. Keep a record of all contacts made with the schools, the dates of phone calls, dates the letters are sent and names of all contact people especially the secretary as this may be the person you have most contact with.

3. Ring the school one week after the letter has been sent to speak to the Principal and discuss the process that would be undertaken for approval to be given. If necessary arrange a meeting to speak personally to the Principal and others (e.g. Board of Trustees, teachers). Some schools now prefer surveys to be done on line and can arrange these to be sent by email attachment and returned. If this is the case, the school will advise on how this will be implemented.

4. When permission has been granted, an appointment is made for the fieldworker to visit the school. If the questionnaires are to be taken home by the pupils, arrange for class lists to be available on the day complete with the child's name, age, date of birth and ethnicity, if possible. The questionnaires for the 6/7 year old could be pre-named and ready for distribution by the teachers, along with the questionnaires for the parent (Adult questionnaire) to complete. The codes of the Adult Questionnaire must be recorded on the Child Questionnaire (see page 183). However the cooperation of the teaching staff is essential to ensure that the children return the questionnaires, therefore, it may facilitate good will for the fieldworker to complete the naming of the questionnaires at the school, collate into classes and give to the teachers to hand out at the end of the day. The personal contact with the teachers cannot be underestimated and is the key to achieving a high participation rate.

5. If the younger age group take the questionnaires home for parent/guardian completion (rather than sending them by email), the following points can be of assistance to the fieldworker:

    a. Print an appropriate number of stickers that can be stuck on the bottom of the information letter e.g. '*Please return by Friday'* or one other day, giving them about a week to complete and return the questionnaire to school (the information letter is taken home with the questionnaire (example page 122).

    b. If a small 'prize' for the children is found, they are encouraged to get the questionnaire completed so they can return it and claim the 'prize'. In Auckland, we found a printing company who kindly agreed to donate a book sticker. The teacher gave each child a sticker when the questionnaire was returned and this method proved very successful.

    c. Most schools will have a stamp with the school name on it. Use this on every questionnaire and save time.

The centre number and the school number can be entered later. Mistakes will not occur as long as the school name has been stamped on the questionnaire. However, some may prefer to enter all the numbers at the time of first issue.

If the questionnaires are given to the children to take home, this is a step by step procedure for the 6/7 year age group.

Step (i) Class lists obtained and each child given a number beside the name.

Step (ii) Child's name entered onto questionnaire.

Step (iii) Child's unique number, survey, term, centre and school number entered onto questionnaire (centre and school numbers can be entered later as long as Step iv is completed).

Step (iv) Name of school stamped onto questionnaire.

Step (v) Letter to parent with relevant translation enclosed **inside** questionnaire (sticker with date of return put on the bottom of the information letter).

Step (vi) Each survey folded, with a final check to ensure that it has been numbered, named and school name stamped.

Step (vii) With each survey for the 6/7 year old include 2 adult surveys (strongly recommended). If the Adult surveys are used, it is vital that these can be linked with the child survey by adding the adult questionnaire numbers to the child survey. Please see the data coding section on page 167 and "identifying boxes for office use only" on page 183. It must be made clear that if there is only one adult in the household, the second questionnaire must be returned to the school together with the completed Adult questionnaire with the child that brought them home for completion.

Step (viii) Bundles for each classroom held with 2 rubber bands (one horizontal and one vertical), class room number written on the top questionnaire.

Step (ix) Appropriate numbers of 'gifts' to accompany each classrooms questionnaires.

Step (x) Note attached to each bundle of questionnaires, thanking the teacher. For example:

Thank you very much for your assistance. Would you please ask the children to return these surveys by …./…./2015. This information is on the letter for the parent enclosed in the questionnaire. Would you please give them a (?sticker ['prize']) when they return the survey.

6. Some schools require a small introduction of the project to the members of staff. This can often be done at a morning tea break when at the school numbering the questionnaires.

7. Discuss with the secretary when to return to collect the questionnaires. The timing of this should be approximately one week following the "Please return by Friday" (or one other day) on the letter to the parent. A phone call before returning to the school is usually appreciated by the staff. Enquire how many surveys have been returned and then decide if it is worth postponing the visit

8. On return to the school, sort all surveys into number sequence and then mark off on the class list. For the numbers not marked off, reissue another questionnaire using the same process as above, but the Survey Number will now be **2** instead of **1**

9. For second issues, inclusion of a stamped self-addressed envelope may increase the % of returns. Some parents may prefer this method of return. If funds permit this may be a better option for some centres with the first issue also. Some schools may prefer this as it would mean less involvement for the teachers.

10. In the case of surveys returned uncompleted, reissue the survey but put a **2** above the **1**.

    Note: Reissue returned BLANK SURVEYS on the premise that it could have been left in the child's bag and returned to get the 'prize'. A POSITIVE NO from the parent/guardian on the questionnaire would stop a reissue. Because of privacy issues, some parents may not want the school to collect the completed questionnaire – New Zealand had a good response from the 2nd issue with the envelope provided.

    Note on the class lists of the surveys not returned and those returned blank and keep a record of the reissue date. If Adult questionnaires are returned blank together with completed Adult and Child Questionnaires, record the number of the blank adult questionnaire alongside the completed child questionnaire so these can be linked.

11. It may be a good idea to leave a few spare stamped self-addressed envelopes with the school secretary, and request that any late returned questionnaires to the school be posted back to the researcher/fieldworker.

12. No further contact with the school is required, however, a thank you letter would be appreciated. Advise them that they will be notified of the results when they become available.

13. Surveys collected are put into a locked filing cabinet. Any returned by post are checked off against the class list and put into the appropriate class by number sequence. At a less pressured time the surveys can be checked against the class lists for correct date of birth, age, and numbering.

14. Any corrections to demographic data must be recorded (example page 210) and the questionnaire identified using the numbers recorded in the "office use only" boxes.

15. The questionnaire must not be altered under any circumstances.

20.8 Changes to the demographic data

Example of how the 'office use only' boxes are used to record any corrections made to the Demographic data. This ensures that any changes made are legitimate and can be identified and checked if necessary.

Signature of Researcher_____	Question	Reason for Change

Office use only

1	1	0	6	0	1	9	3	1	2	0	3	6

Primary, centre 1, school 6, child 193, 1st survey, term 2, Spanish language

								Age	Age given did not match the DOB given. Checked with school DOB correct therefore age changed by Researcher.				
1	1	1	0	0	0	0	4	1	1	0	1	1	
								DOB	DOB and age did not match up. Checked with School. Q Had wrong DOB, therefore DOB changed by researcher.				
1	1	1	8	0	0	0	6	2	1	0	0	1	
								Date	The Date given by parent had wrong year (1892 instead of1992). Researcher changed to reflect the correct date.				

A full page of these blank boxes can be generated (and then photocopied for multiple copies) and hand completed by the person checking the questionnaires. This enables an up to date record to be kept of any changes and these pages can them be examined if there is a query regarding the changes.

21. Contact Addresses of the Global Asthma Network Steering Group, GAN Global Centre and GAN Data Centres

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Spain Data Centre: (Portuguese and Spanish speaking countries) ***Professor Luis García-Marcos*** Professor of Paediatrics Respiratory and Allergy Units, Department of Paediatrics. 'Virgen de la Arrixaca' University Children's Hospital, University of Murcia Pabellón Docente Universitario Ctra. Madrid-Cartagena s/n 30120 El Palmar. Murcia, Spain Ph: + 34 868 888 129 Fax: + 34 868 888 127 Email: lgmarcos@um.es	**United Kingdom Data Centre: (all other countries)** ***Professor Neil Pearce*** Professor of Epidemiology and Biostatistics Department of Medical Statistics Faculty of Epidemiology and Population Health London School of Hygiene and Tropical Medicine Keppel Street London WC1E 7HT United Kingdom Ph: +44(0)20 7958 8151 Fax: +44(0)20 7637 2853 Email: Neil.Pearce@lshtm.ac.uk
GAN Global Centre Department of Paediatrics: Child and Youth Health Faculty of Medicine and Health Sciences The University of Auckland Private Bag 92 019 Auckland 1142 New Zealand Ph: +64 9 923 1933 Fax: +64 9 373 7602 Email: info@globalasthmanetwork.org	**Video questionnaire courtesy of:** Wellington Asthma Research Group Wellington School of Medicine P.O. Box 7343 Wellington South Wellington 6242 New Zealand **Professor Julian Crane**

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ISBN: 978-0-473-31442-2