**Supplement 1: Outcome definitions for all investigated respiratory diseases and symptoms for each AGRICOH cohort.**

| **Cohort** | **Asthma** | **Cough** | **Phlegm** | **Wheeze** | **COPD** |
| --- | --- | --- | --- | --- | --- |
| **Overall** | **Allergic** | **Non-Allergic** |
| Ethiopia | Self-reported doctor diagnosis of asthma |  |  | Self-reported usual cough for at least three months in past year | Self-reported usual cough producing phlegm for at least three months in past year | Self-reported wheeze, without cold, in past year | Mild airflow limitation in which FEV1 / FVC is < 70% and FEV1 is ≥ 80% of the predicted value |
| KwaZulu-Natal | Self-reported doctor diagnosis of asthma |  |  |  |  |  | Self-reported treatment of chronic bronchitis |
| Western Cape Fruit Farm Workers | Self-reported history of asthma attack in past year or currently taking asthma medication | Self-reported history of asthma attack in past year or currently taking asthma medication and positive Phadiatop test (>0.35 KU/L) | Self-reported history of asthma attack in past year or currently taking asthma medication and negative Phadiatop test (>0.35 KU/L) | Self-reported being woken by an attack of cough in past year |  | Self-reported wheeze or whistling in past year |  |
| North West Poultry Workers | Self-reported history of asthma attack in past year or currently taking asthma medication or positive bronchodilator test (increase in FEV1 ≥ 12% and ≥ 200ml increase compared to baseline) | Self-reported history of asthma attack in past year or currently taking asthma medication or positive bronchodilator test (increase in FEV1 ≥ 12% and ≥ 200ml increase compared to baseline) and presence of atopy or FeNO > 50ppb | Self-reported history of asthma attack in past year or currently taking asthma medication or positive bronchodilator test (increase in FEV1 ≥ 12% and ≥ 200ml increase compared to baseline) and absence of atopy or FeNO > 50ppb | Self-reported usual cough | Self-reported usual phlegm | Self-reported wheeze or whistling in past year | FEV1/FVC ratio post-bronchodilator increase below 5th percentile or reporting symptoms suggestive of bronchitis (defined as “cough and phlegm on most days/nights for 3 months or more per year during the last 2 years”) |
| KMCC | Self-reported history of asthma, rhinitis, and other allergic diseases |  |  |  |  |  | Self-reported doctor diagnosed chronic bronchitis |
| AGRICAN | Self-reported doctor diagnosis of asthma | Self-reported doctor diagnosis of asthma with hay fever and/or eczema | Self-reported doctor diagnosis of asthma without hay fever and/or eczema | Self-reported doctor diagnosis of chronic bronchitis |  |  | Self-reported doctor diagnosis of chronic bronchitis or emphysema  |
| BM3R | Self-reported doctor diagnosis of asthma |  |  | Self-reported usual morning cough and/or being woken by an attack of cough in past year | Self-reported usual sputum |  | FEV1/FVC < 0.70 post bronchodilator test at spirometry associated with either dyspnea, chronic cough or chronic sputum  |
| FERMA | Self-reported doctor diagnosis of asthma | Self-reported doctor diagnosis of asthma with hay fever | Self-reported doctor diagnosis of asthma without hay fever | Self-reported usual cough in the past year without cold | Self-reported phlegm in past year | Self-reported wheeze in past year | Self-reported doctor diagnosis of COPD |
| Franche-Comte Farmers | Self-reported history of asthma |  |  | Self-reported usual morning cough and/or being woken by an attack of cough in past year | Self-reported usual sputum | Self-reported wheeze in past year | FEV1/FVC < 0.70 post bronchodilator test at spirometry associated with either dyspnea, chronic cough or chronic sputum |
| Norwegian Farmers | Self-reported doctor diagnosis of asthma |  |  | Self-reported usual cough | Self-reported usual phlegm | Self-reported ever wheeze | At or below 5% lower limit of normal spirometry test result |
| PIPAH | Self-reported doctor diagnosis of asthma |  |  |  |  |  | Self-reported doctor diagnosis of COPD |
| SUS Study | Self-reported doctor diagnosis of asthma | Self-reported doctor diagnosis of asthma and positive response to skin prick test | Self-reported doctor diagnosis of asthma without positive response to skin prick test | Self-reported usual cough | Self-reported usual phlegm | Self-reported ever wheeze |  |
| Agricultural Health Study | Self-reported doctor diagnosis of asthma | Self-reported doctor diagnosis of asthma with hay fever | Self-reported doctor diagnosis of asthma without hay fever | Self-reported usual cough | Self-reported usual phlegm | Any episode of wheeze in the past 12 months | Self-reported doctor diagnosis of COPD, emphysema, or chronic bronchitis |
| Farmer Health Study | Self-reported history of asthma |  |  | Self-reported usual cough most days for the week for at least three months in the past year | Usual phlegm for at least three consecutive months of the year for greater than two years or your life | Self-reported wheeze most days or nights, with or without cold |  |
| Keokuk County | Self-reported doctor diagnosis of asthma | Self-reported doctor diagnosis of asthma and three or more positive responses to a battery of allergens administered in a skin prick test. | Self-reported doctor diagnosis of asthma and less than three positive responses to a battery of allergens administered in a skin prick test | Self-reported usual cough | Self-reported usual phlegm | Self-reported wheeze most days or nights | Self-reported doctor diagnosis of chronic bronchitis |
| New Zealand |  Self-reported history of asthma |  |  | Self-reported usual cough in past year |  Self-reported usual phlegm in past year |  Self-reported wheeze or whistling in past year | Self-reported history of chronic bronchitis |
| Victorian Grain Farmers | Self-reported history of asthma |  |  |  |  |  | Self-reported history of COPD |
| MAUCO | Self-reported doctor diagnosis of asthma |  |  |  |  |  | Self-reported doctor diagnosis of COPD |

FEV1, forced expiratory volume in one second

FVC, forced vital capacity

FeNO, fractional exhaled nitric oxide

COPD, chronic obstructive pulmonary disease