

Towards Prevention and Better management of Multimorbidity In Common Allergic Conditions Research Collaborative Meeting 3

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Agenda

1. Welcome and housekeeping (10 mins)
2. Project proposal summary and (10 mins)
 1. We will hear a five minute “elevator pitch” about the project and why it should be funded. This will be followed by a brief presentation of the preliminary results from our initial analysis (work in progress)
3. Breakout rooms for discussion (10 mins)
 1. We will use smaller breakout rooms to discuss these presentations
4. Feedback and Q&A (20-30 mins)
 1. This leaves plenty of time for discussion of the results, the interpretability of the study proposal and any comments or suggestions you have for the group going forward

Welcome and housekeeping

- Email: sign up to https://lists.lshtm.ac.uk/sympa/subscribe/skinepi_ppi
- Website: we have a simple website (work in progress)
 - <https://a-henderson91.github.io/s/>
- Terms of reference

Last time: Revised project aims and summary

Patient and public involvement will be embedded in all work packages.		
CLUSTERS OF MULTIMORBIDITY	MECHANISMS TOWARDS PREVENTION	TOWARDS BETTER CARE
<p>Objective 1 To use health record data to understand patterns (identifying and mapping clusters) and trajectories (within clusters) of multimorbidity in people with allergic diseases.</p>	<p>Objective 2 To enhance our understanding of the reasons (cluster determinants and pathobiological (causal) pathways for multimorbidity in people with allergic diseases, including wider determinants of disease such as deprivation and pollution over the life course.</p> <p>Objective 2a Life course epidemiology to explore chains of causality.</p> <p>Objective 2b Using Mendelian randomisation to explore causal relationships with factors that may not be easy to capture (e.g. sleep problems).</p>	<p>Objective 3 Use mixed methods to investigate the qualitative and quantitative impact of multimorbidity in common allergic disease.</p> <p>3a. Quantify the burden and cost of multimorbidity in people with allergic disease (cost of treatments, polypharmacy, number of consultations, number of hospital appointments, number/duration of admissions, frailty, and mortality). Determine if a similar burden is seen in trial populations.</p> <p>3b. Qualitative – the burden of the lived experience of multimorbidity in allergic disease including assessment of quality of life and stigma.</p>

We are very keen to have your feedback on this document

Is it easy to understand?

Does it convey the aim of the project well?

Are there words or phrases that sound too much like science “jargon”?

Towards Prevention and Better management of Multimorbidity in Common Allergic Conditions Research Collaborative

Lay summary

What is multimorbidity?

Multimorbidity is when people live with two or more conditions. There are many reasons why people develop multiple diseases, it may be due to: genetics; side effects from treatments; or because of other disease symptoms. People with multiple diseases can often receive lower quality care; spend more time accessing healthcare; take more medications, and can feel that taking care of their diseases is a “full time job”.

Why does this matter to people with atopic allergic diseases?

In the UK, one in five people have atopic allergic diseases such as asthma and eczema and many live with multiple health conditions. Living with multiple diseases can result in poorer mental and physical health and can make it harder for people to do day-to-day activities such as going to work or school, looking after family members, and seeing friends. In addition, atopic allergic diseases and multimorbidity are expensive, both for the person living with the disease and for the health service.

Why do we need this study?

We need to better understand how and why mental and physical diseases are more likely to occur with common allergic **diseases**, and hear from people about how it impacts their lives. By knowing this, we can work to prevent multimorbidity, take better care of patients and reduce the impact on patients and the NHS.

Our study

To help us better understand multimorbidity in people with atopic allergic diseases, we will:

- Use health record data to understand patterns of multimorbidity and how these impact people with allergic diseases
- Look at different factors that impact allergic diseases to see why multimorbidity occurs in people with allergic diseases
- Explore how multimorbidity impacts people with common allergic diseases through interviews and questionnaires

Outcomes and expected benefits

At the end of the study, we hope to know more about multimorbidity in people with atopic allergic diseases so we can look for ways to prevent it happening and make people's lives better. Scientists will be able to work on new targeted medications for allergic diseases and healthcare professionals will know which patients need more support controlling their

Project summary



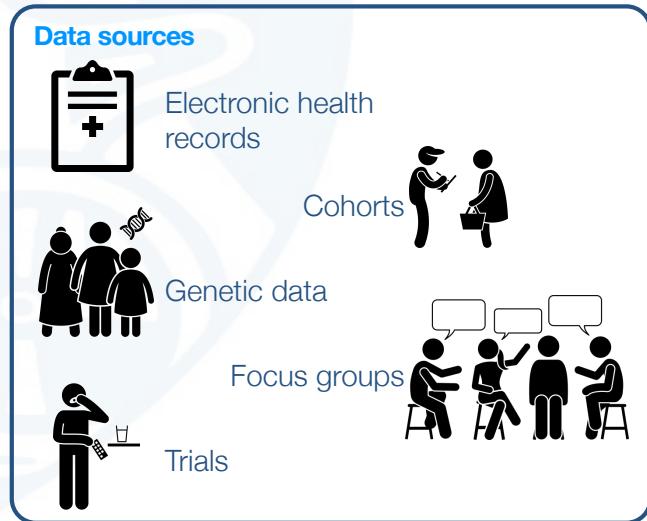
Towards Prevention and Better management of Multimorbidity In **Common Allergic Conditions** Research Collaborative

Impact:

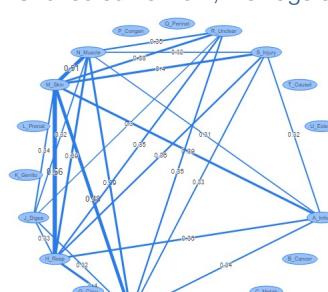
- Identify **unmet needs**
- Work towards **new interventions**

Novelty:

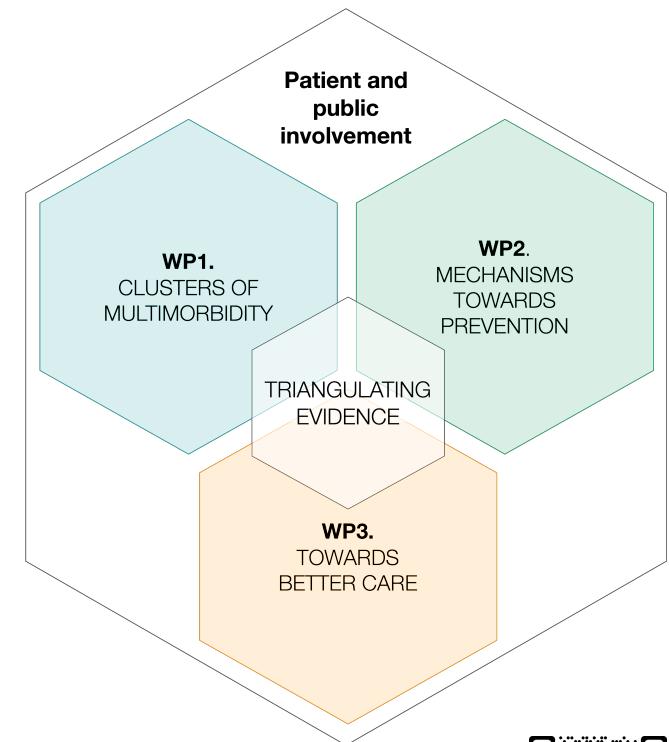
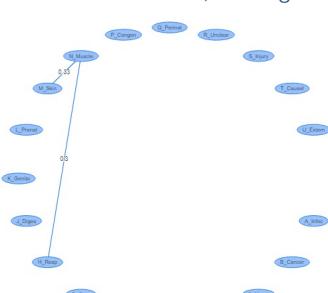
- No research on **multimorbidity** in common **allergic diseases**
- Novel clusters:**
 - skin, respiratory, neurological, musculoskeletal, digestive system
 - injury, infectious diseases



Atopic eczema
Undirected network, men age 50



Controls
Undirected network, men age 50



bit.ly/3vp03Zi

Preliminary results



Preliminary results

We have approximately 2 million sets of records like this:



Born
1985

1995
Record of
fracture

S

1999
Record of
glandular fever

A

Record of asthma
in 1990

Preliminary results

We have approximately 2 million sets of records like this:



Born
1985

1995
Record of
fracture

1999
Record of
glandular fever

S

A

Record of asthma
in 1990



Born
1992

2005
Record of recurrent
dislocations of shoulder 1999
Record of
ingrowing nail

N

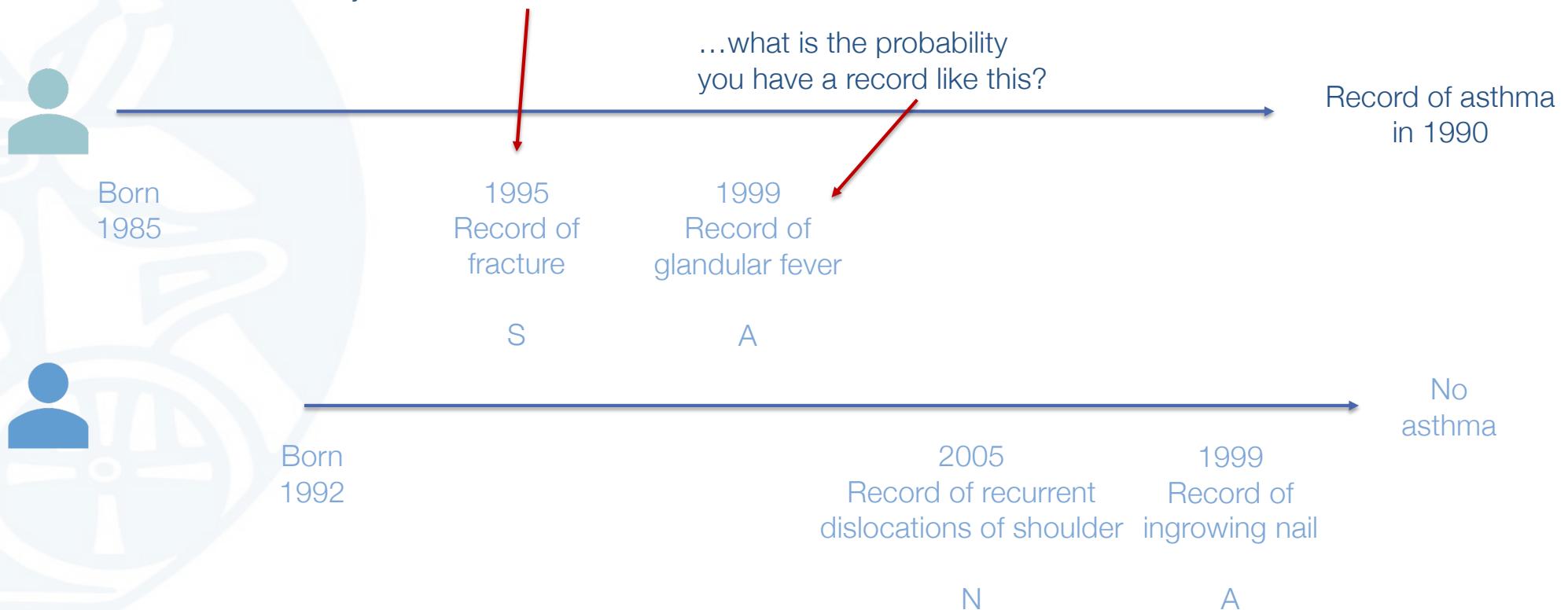
A

No
asthma

Preliminary results

Using a statistical model we look at millions of people and ask:

If you have a record like this....



Preliminary results

We put these probabilities together and see which chapters cluster together

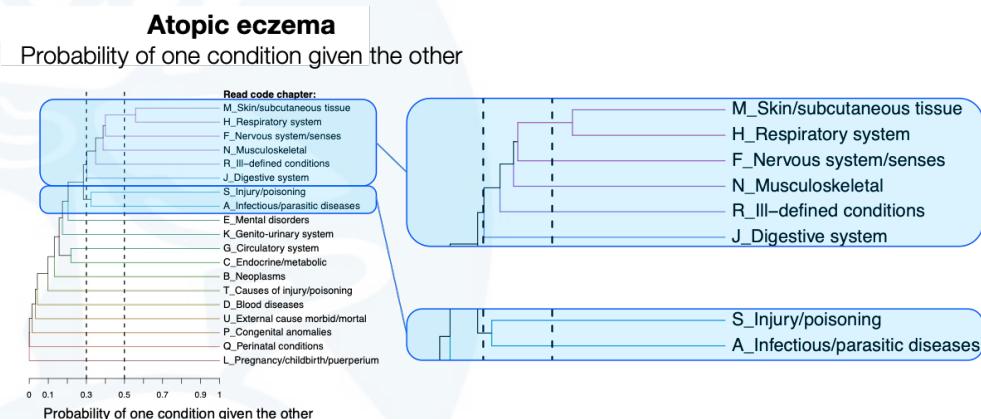
Read code chapters ([men](#)):

- One big cluster with unexpected chapters included

- One smaller cluster

We found a similar but larger cluster in [women](#) which also included

- K (Genito-urinary)
- R (III-defined conditions)
- J (Digestive system)

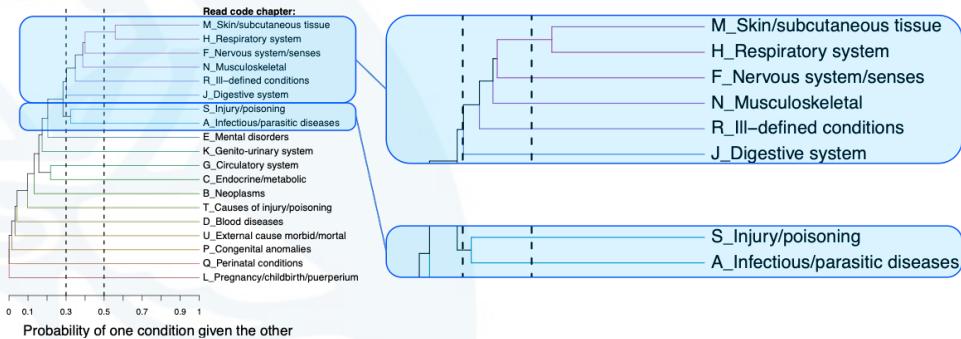


We found very similar clusters for asthma

Preliminary results

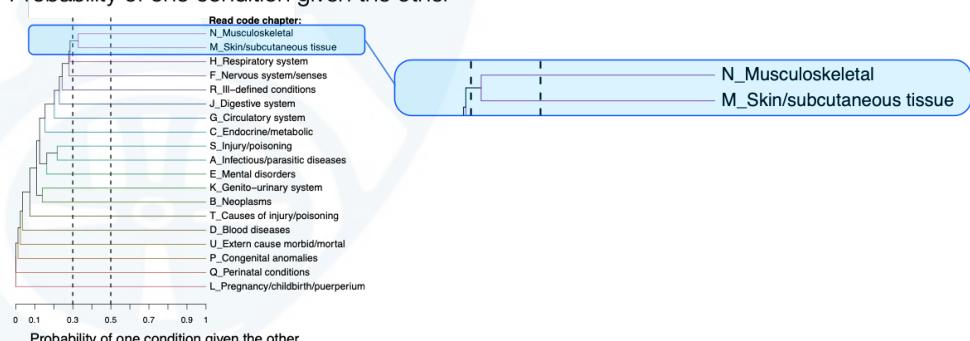
Atopic eczema

Probability of one condition given the other



Matched controls

Probability of one condition given the other



We also found fewer and smaller clusters in those people that do not have an allergic condition (asthma or eczema)

Conclusion

We have found a new cluster of neurological and musculoskeletal disease in people with eczema and asthma which was not observed in controls. Our work highlights that allergic disease is not an isolated entity and documents the extensive and unique additional health needs of people with allergic conditions.

Breakout rooms

1. What was your impression of the 5-minute project proposal? How could it be improved?
2. Do you have any feedback on the preliminary results? Are the clusters as you would expect? Is the probability higher than you would expect?

Breakout rooms: feedback



Next steps

Write up results (available online shortly)	May 2021
Funding interview	Early May 2021
Funding decision	June 2021
Project begins	August 2021