Health Economics Unit

NHS
Midlands and Lancashire
Commissioning Support Unit

# SSPH Programme:

## *"Smarter use of data to facilitate smarter decision making and spending in population health management"*

South West Connect
Luca Ricci Pacifici and Haydn Jones

22nd June 2023

- What
  - current slide 6
- Why
  - current slide 7 but needs working on – focus on COPD and STAR
  - Current slide 8
- How
  - Slide 12
  - Slide 16 – needs updating to “initiate, prepare…” from methods docs, slides etc.
  - Can also have the steps following that
  - Discuss why these methods – slide 10 and why the technical also
- Results

# Introductions

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**Consultant**

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**Associate Director of Finance (Business Intelligence)**

One Gloucestershire
Transforming Care, Transforming Communities

# How can integrated care systems best allocate resources to make the biggest impact on population health?

- The **Smarter Spending in Population Health** (SSPH) programme supports Integrated Care Systems (ICSs) in finding the most impactful areas to focus resources and actually making those changes happen
- SSPH **brings together** clinicians, patients and system leaders and helps them use analytical techniques to identify where **the most effective changes** could be made
- The first patient pathway the SSPH programme has been assessing is that of people living with **Chronic Obstructive Pulmonary Disease (COPD)**

# A programme to embed allocative value in NHS decision making

The Health Economics Unit, in collaboration with the Midlands Decision Support Unit, lead a development programme on allocative efficiency across systems in the Midlands and South West

Using COPD as an exemplar pathway, HEU ran the STAR process with:

- Coventry Place
- Birmingham and Solihull ICS
- Northamptonshire ICS
- Nottinghamshire ICS
- Gloucestershire ICS

# The programme team

The HEU and SU are coordinating a collaboration of experts to deliver the STAR programme. The team understands the power of and has extensive experience and expertise in allocative efficiency, health economics, decision quality, understanding patient choice, STAR, programme management and communications. Below highlights some of the programme's contributors and collaborators:

**Peter Spilsbury**
STAR Programme Board Chair

**Andi Orlowski**
Senior Responsible Officer

**Jack Ettinger**
Health Economics Lead

**Sophie Hodges**
Programme Management Lead

**Tom Parnell**
Comms Lead

**James De Lacy**
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**Fraser Battye**
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**Wayne Smith**
Techniques and Methods Lead

**Lisa Cummins**
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**David Sgorbati**
Analytics and techniques advisor

**Simon Bourne**
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**Paul Mason**
Programme Evaluation Lead

**Gwyn Bevan**
STAR Advisor

**Alec Morton**
STAR Advisor

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# WHY?

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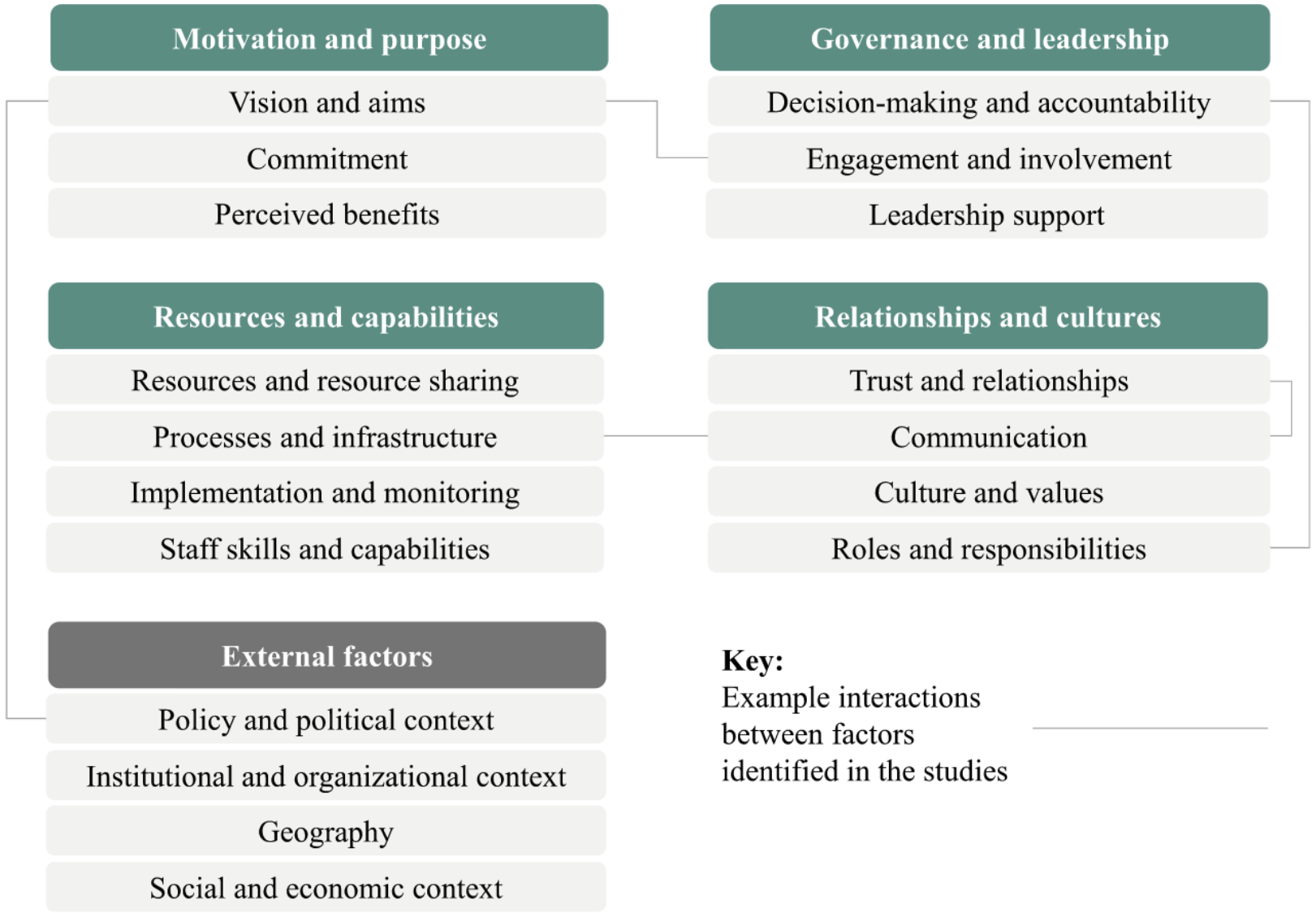
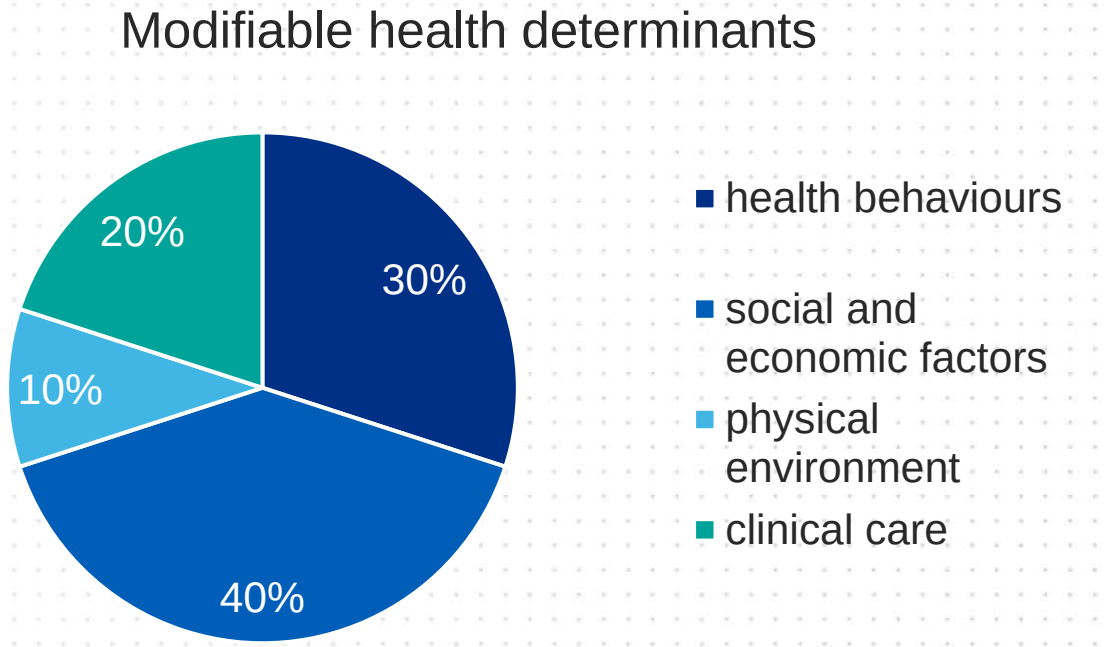





Alderwick, H., Hutchings, A., Briggs, A. *et al.* The impacts of collaboration between local health care and non-health care organizations and factors shaping how they work: a systematic review of reviews. *BMC Public Health* **21,** 753 (2021). https://doi.org/10.1186/s12889-021-10630-1

# STAR?

- STAR is a method that can help to determine the priorities through a technical value-for-money analysis with extensive stakeholder engagement.
- STAR provides a structured way to bring stakeholders together to think about allocating resources across the entirety of a pathway through workshops and the building of graphs.
- Clinical care accounts for ~20% of modifiable contributors to population health. STAR allows consideration of the full pathway including all modifiable health determinants.




*Hood CM, Gennuso KP, Swain GR, Catlin BB. County health rankings: relationships between determinant factors and health outcomes. Am J Prev Med 2016; 50: 129–135. https://doi.org/10.1016/j.amepre.2015.08.024.*

# STAR's strengths!

- Easy to understand, Visual Model
- The absence of data isn't a barrier.
- Evidence based decision making
- Collaborative way of making an ICS decision
- Consider the whole pathway, including prevention and inequalities
- Patient perspective

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# WHAT?

# Socio-Technical Allocation of Resources

STAR is a structured and transparent way of setting priorities through synthesizing the views of key stakeholders and is informed by using the best available data.

**'Socio' part**
The social process entails engaging local, key stakeholders (including patients, clinicians, and managers) in building a view of the current pathway and model improvements. This is done with the help of a facilitator and visual models.

**'Technical' part**
The technical process entails the use of visual models based in health economic principles that can incorporate multiple criteria.

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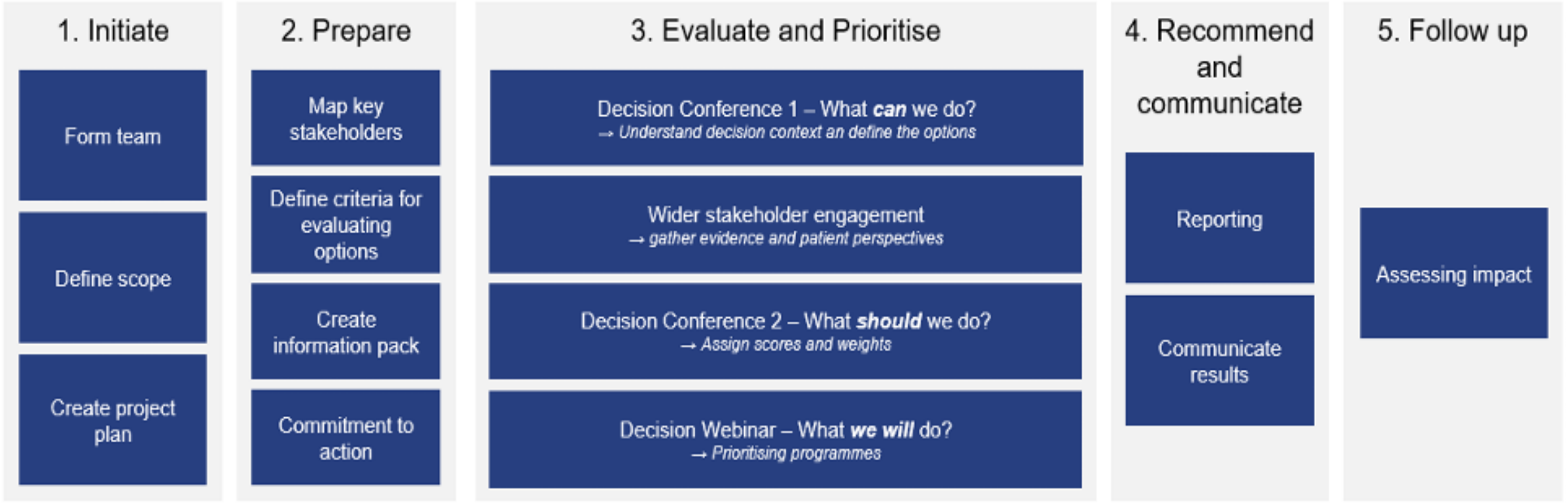
# HOW?

## The process

# Problem Structuring




**Source:** adopted from PHE prioritisation framework and Airoldi et al., 2014

# Prepare: Eliciting patients preferences

Attribute **Treatment outcomes**:
•“Little/some relief” higher perceived utility than “complete relief”, Unexpected finding!

Attribute **Treatment delivery**:
•Strong preference for “in-person, individual appointment”

Attribute **Travel time to treatment appointment**:
•“Up to 30mins” / “31-60mins” provide higher utility than “more than 60mins”

Attribute **Out-of-pocket Expenditures**:
•“£1-5” ranks highest in perceived utility followed by “none”

Attribute **Waiting-times**:
•“Between 3-6 months” / “Up to 3 months” provide highest utility

Attribute **Type of staff delivering treatment**:
•Strong preference for “Healthcare professional”

# Prepare: Eliciting patients preferences

- **520 individuals** completed the survey
- **Balanced** in sex at birth, education above secondary /secondary & primary
- **Majority** are white (98%), live in urban areas (~70%), and are from Gloucestershire (45%) and Coventry & Warwickshire (30%)
- Majority had their COPD diagnosis at least 1-5 years ago and are impacted in their breathing. 70% experienced exacerbations in the last 12 months, 90% use inhalers, and 45% use medication
- **~ 1/3 report moderate problems with their mobility**, usual activities and pain/discomfort. About half of the respondents report no problem with self-care and slight/moderate problems with anxiety/depression

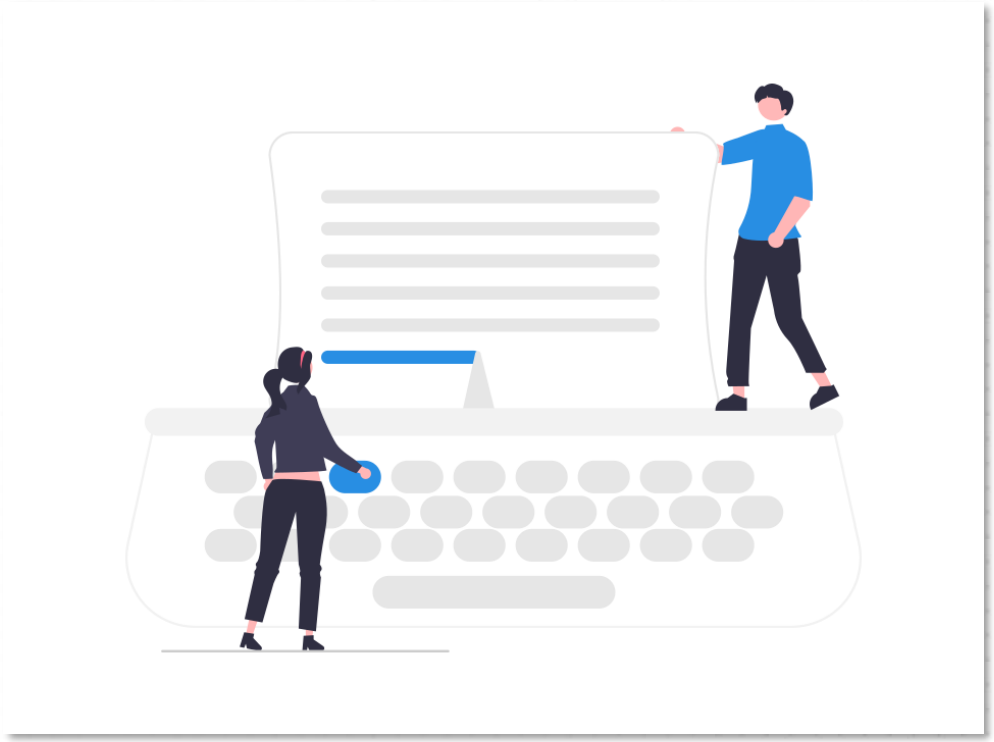
# Prepare: Eliciting patients preferences

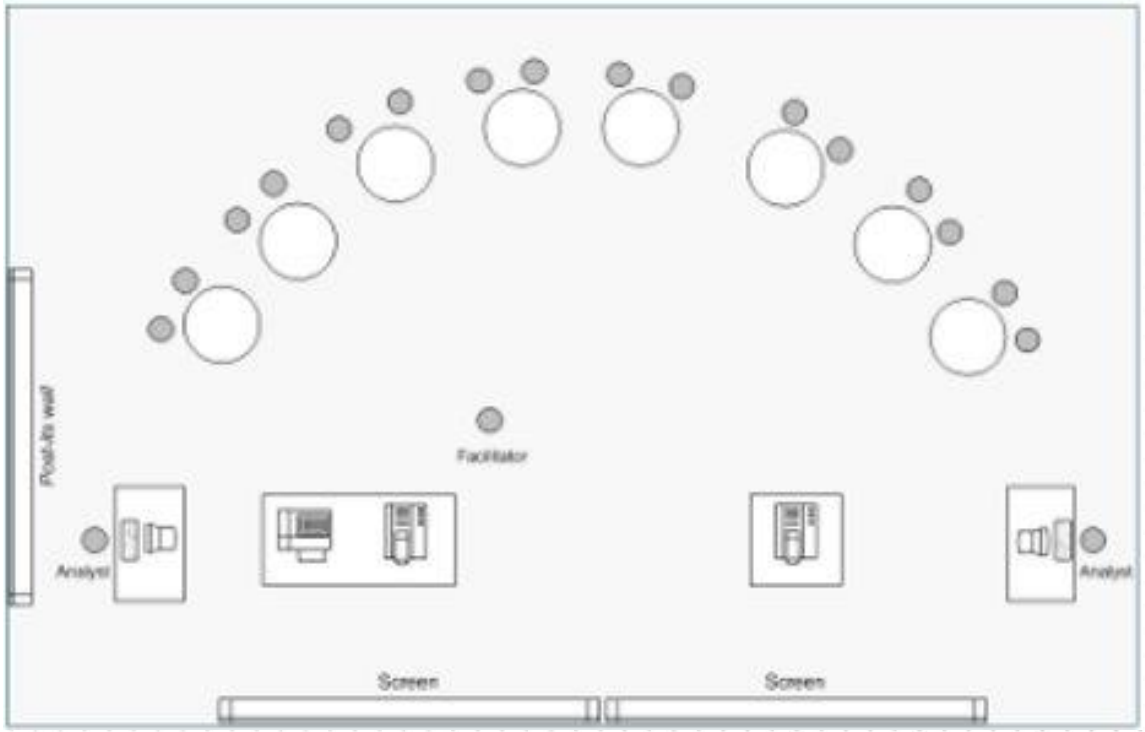
| | Level 1 | Level 2 | Level 3 | Level 4 |
|---|---|---|---|---|
| **The impact that the treatment has on your COPD** | Little relief: On level ground, I walk slower than people of the same age because of breathlessness, or have to stop for breath when walking at my own pace | Some relief: I get short of breath when hurrying on level ground or walking up a slight hill | Complete relief: I only get breathless with strenuous exercise | |
| **The way that you receive treatment sessions** | Online, individual appointment | Online, group appointment | In-person, individual appointment | In-person, group appointment |
| **Your average travel time for a treatment appointment, including both outward and return journey** | Up to 30 minutes | 31 - 60 minutes | More than 60 minutes | |
| **How much you have to spend on average to attend a treatment appointment** | None | £1 - £5 | £6 - £15 | More than £15 |
| **How long you need to wait for treatment after being referred** | Up to 3 months | Between 3 and 6 months | Over 6 months | |
| **Type of staff delivering treatment** | Healthcare professionals (e.g. doctor or nurse) | Non-healthcare professionals (e.g. fitness coach) | Volunteer / charity worker | |

Initiate | Prepare | Evaluate and Prioritise | Recommend and Communicate | Follow Up

# Preparing for Decision Conferences

Get buy-in - ensure those who are involved in the process are committed to taking results/findings forward





# Decision Conferences

## Decision Conference 1
What **can** we do?

*Aim: understand the current pathway - set the scene and value interventions in the current pathway*

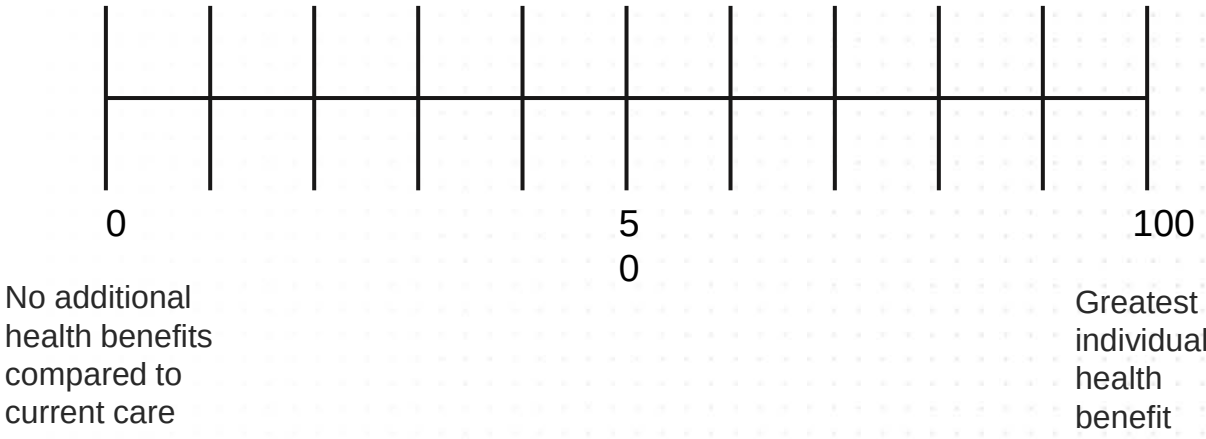
- Scene setting – population, pathway and problem(s)
- The current interventions - who benefits and what's the impacts
- Valuing the current care pathway using the Visual Analogue Scale

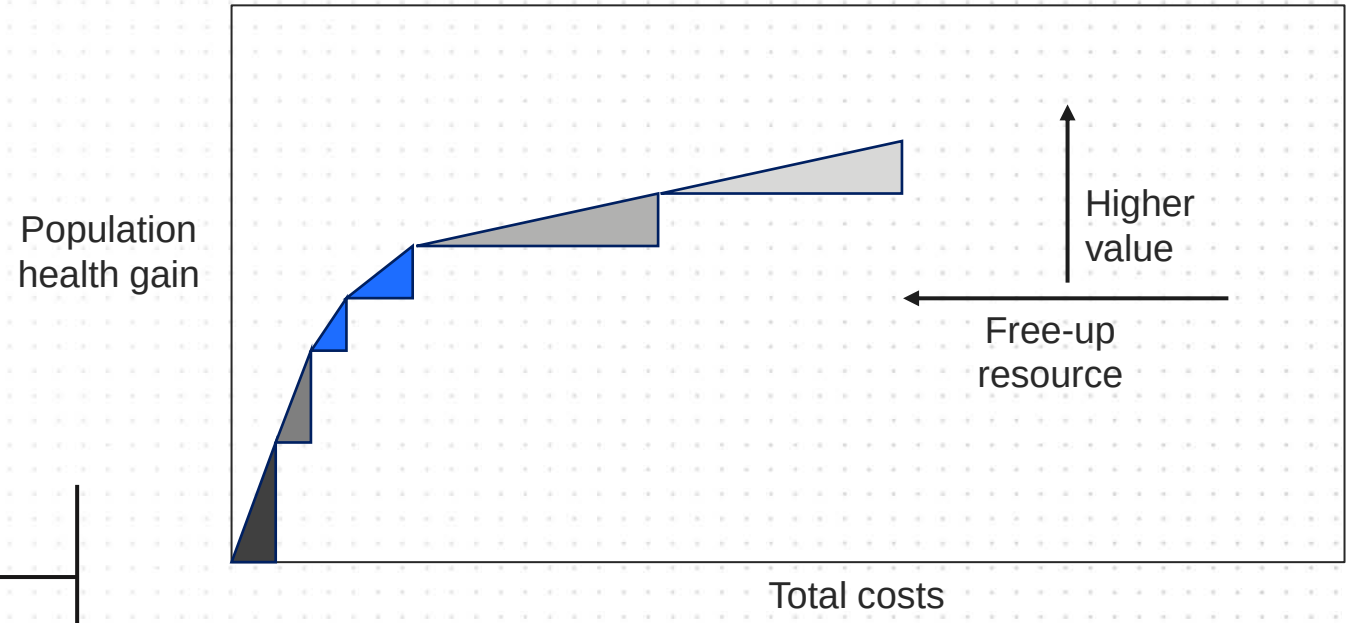
## Decision Conference 2
What **should** we do?

*Aim: to set priority interventions and discuss how we implement them*

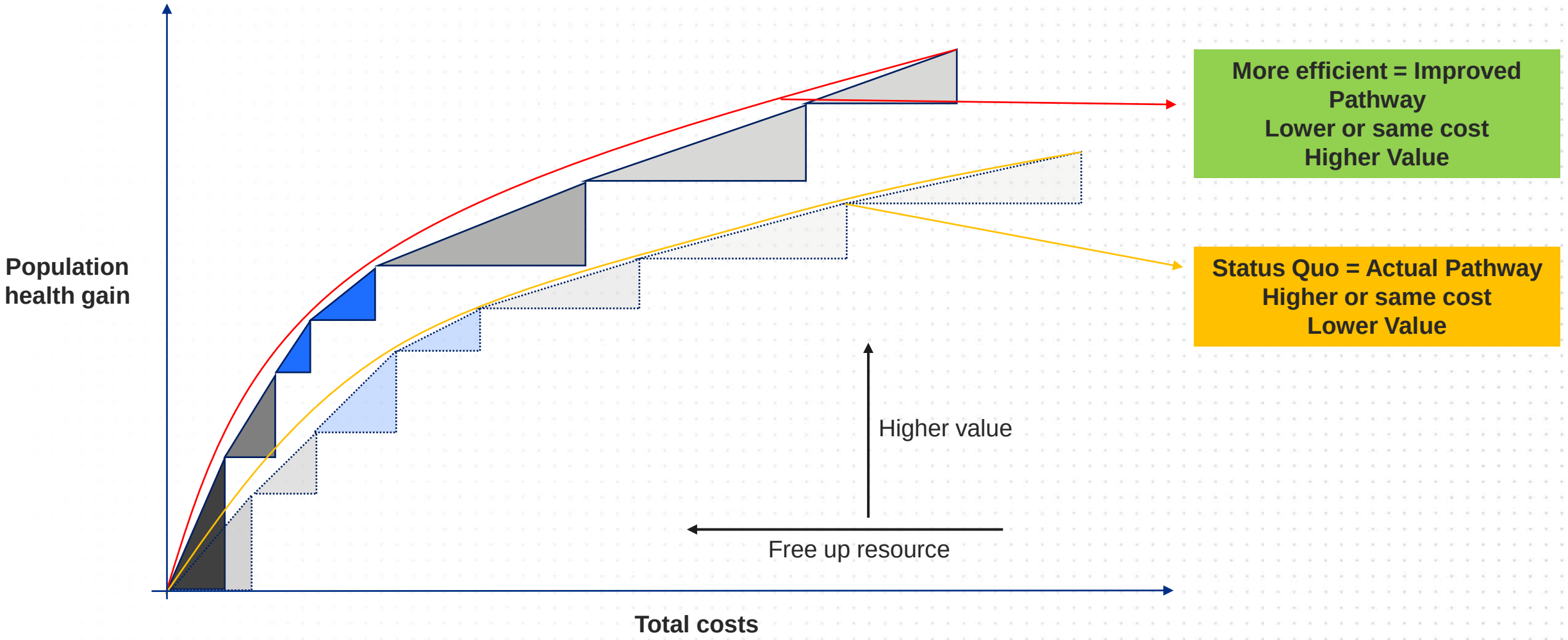
- Efficiency frontier results
- Identifying opportunities
- Valuing opportunities
- Prioritising
- Next steps - how do we make this happen?

# Building models



# Modelling and reporting



# Using the results of the modelling for decision-making

- **Ranking interventions by cost/population health ratio**

Ensuring that the pathway improvements taken forward will produce the most health within the given available budget

- **Total additional pathway cost**

This method can determine whether the pathway improvement is likely to save money overall or incur additional costs

# The most efficient allocation of resources based on cost per unit of population health gain

| Ranking | Pathway improvement (scenario) | Cost/population health ratio |
|---|---|---|
| 1 | More effective use of the virtual ward | -19.09 |
| 2 | Proactive case finding (most optimistic scenario) | -6.87 |
| 3 | Improving uptake to Mindsong and KiActiv | -0.39 |
| 4 | VBA for tobacco dependency | -0.03 |
| 5 | Increasing uptake of PR (online offering) | -0.66 |
| 6 | Vaping as a harm reduction pilot | 0.32 |
| 7 | Improving uptake of pneumonia vaccinations | 0.47 |
| 8 | MPT management of patients (1 PCN) | 1.87 |
| 9 | MPT management of patients (2 PCNs) | 2.25 |
| 10 | Proactive case finding (most pessimistic scenario) | 2.36 |
| 11 | MPT management of patients (3 PCNs) | 2.61 |
| 12 | Increasing uptake of smoking cessation services | 3.00 |
| 13 | Avoiding fuel poverty | 6.67 |
| 14 | Psychological support for patients | 7.97 |
| 15 | Increasing uptake of PR (improving completion rates in the current services) | 11.34 |
| 16 | Increasing uptake of PR (improving uptake through the standard route) | 15.07 |

# Evaluation

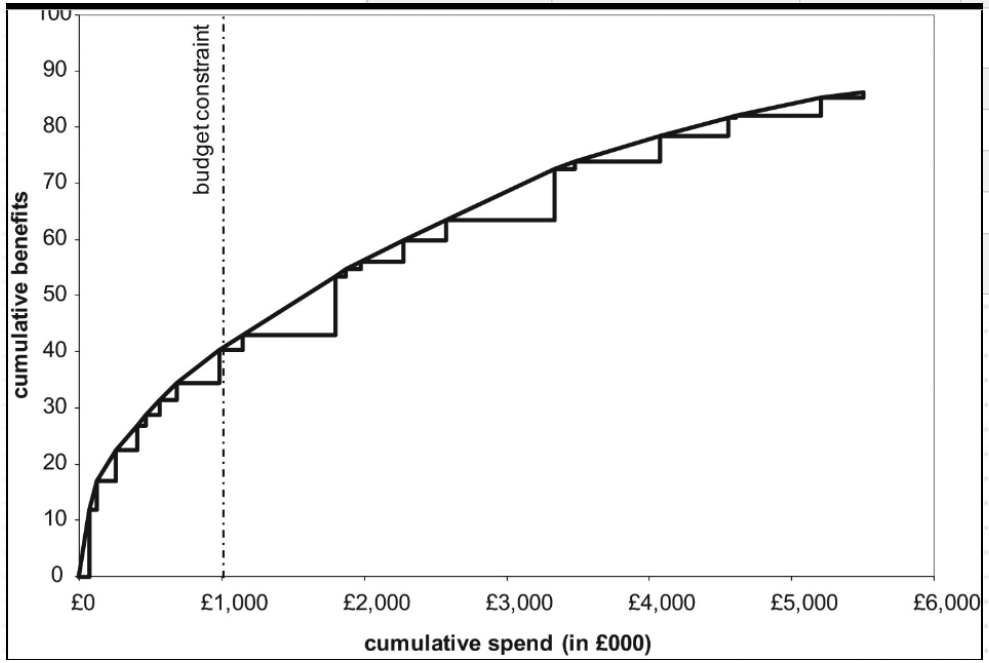
*"The LHS focusses on approaches to capture data from clinical encounters and other health-related events, analyse the data to generate new knowledge, and then apply this knowledge to continuously inform and improve health decision making and practice"*

*Source: Nwaru BI, Friedman C, Halamka J and others (2017) 'Can learning health systems help organisations deliver personalised care?', BMC Med 2017 15: 177*

# Not only COPD!

## Our Programme have a flexible approach

- Mental Health
- Elective Care
- Inequalities
- Portfolio approach




| Commissioning Area *(g)* | Intervention *(j)* | Additional Cost in £k ($c_j$) | Additional benefit [$E(v_j)$] | VFM Ratio[a] [$E(v_j)/c_j$] | Cumulative Cost in £k[b] | Cumulative Benefit[c] |
|---|---|---|---|---|---|---|
| Respiratory | Pneumonia | £75 | 11.84 | 0.1579 | £75 | 11.84 |
| Mental health | Dementia services | £50 | 5.18 | 0.1036 | £125 | 17.02 |
| | | | 5.40 | 0.0415 | £255 | 22.42 |
| | | | 4.51 | 0.0301 | £405 | 26.94 |
| | | | 1.73 | 0.0289 | £465 | 28.67 |
| | | | 2.78 | 0.0278 | £565 | 31.44 |
| | | | 3.05 | 0.0254 | £685 | 34.49 |
| | | | 5.74 | 0.0191 | £985 | 40.23 |

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# An example of the STAR process – Gloucestershire ICS

Haydn Jones

# Background

- Several attempted had been made to allocate cost and outcomes to pathways e.g. use of Programme Budgeting. Despite a lot of work, there was limited traction with the work that had been done.

- We had been looking for a framework that was easy to use and understand to support evidence based decision making with regards to the allocation of resources between and within pathways in order to deliver ‘value’ for the population of Gloucestershire.

- A lot of the early work on pathway costs and outcomes had been undertaken on the respiratory pathway so when we heard of STAR and the support from the Health Economics Unit (HEU) then we jumped at the chance to test it out on the COPD pathway.

# Gloucestershire's COPD Pathway

- The current 'as-is' COPD pathway was mapped which consisted 5 main areas:
  - Primary Prevention
  - Secondary Prevention/Diagnosis
  - Case Management
  - Tertiary Prevention
  - Treating Acute Exacerbations

- The first decision conference looked at the benefit of each intervention in these pillars on a person's health benefit.

- An efficiency frontier was created from the data (cost & outcomes) plus the health benefits derived in the decision conference. The efficiency frontier is then used to determine the opportunity for improvement within the pathway.

# Our current COPD pathway

## Primary Prevention

- Treating tobacco dependency

## Secondary Prevention / Diagnosis

- Diagnosis via spirometry
- Warm home prescription
- Vaccinations

## Case Management

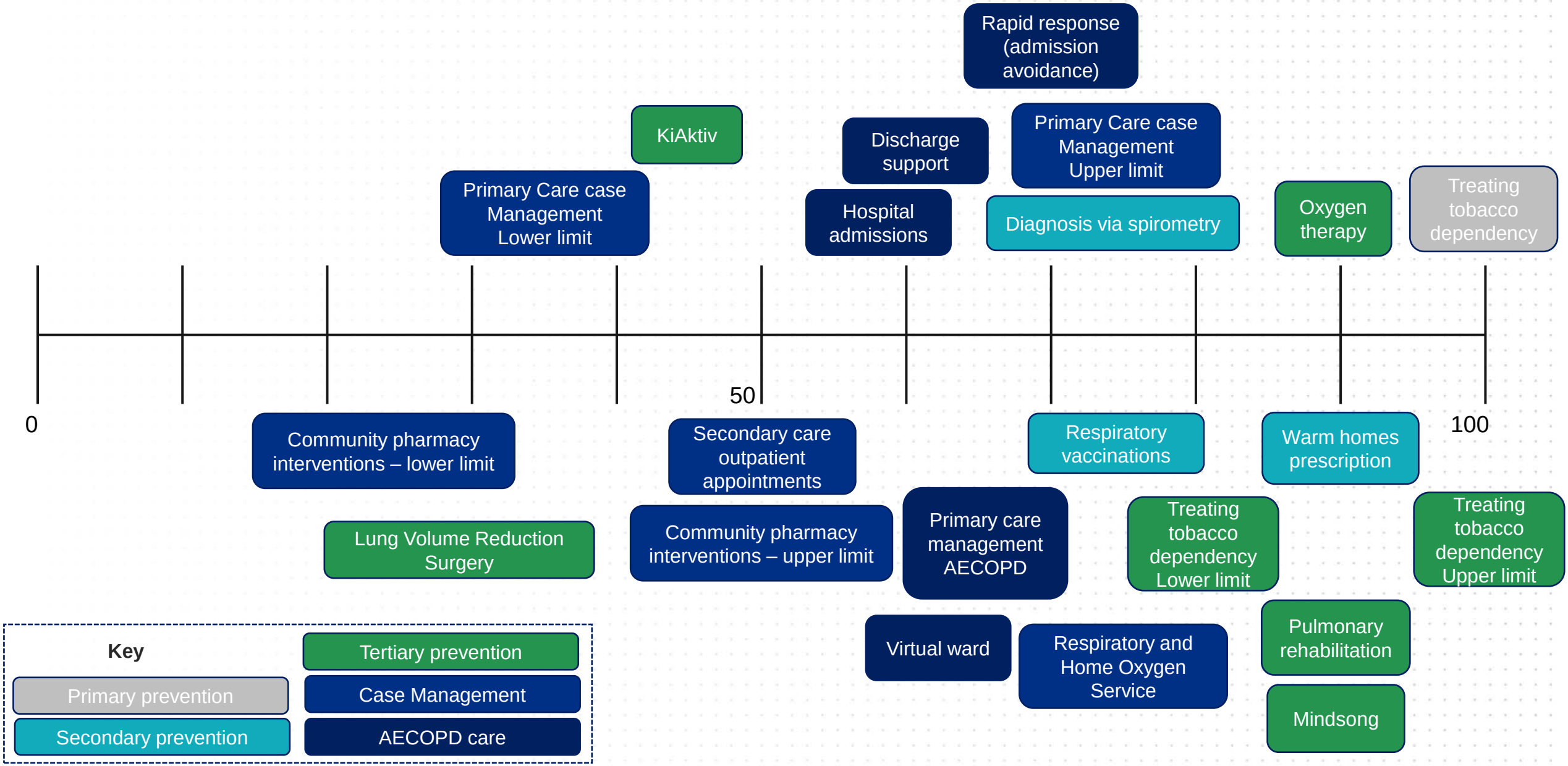
- Primary Care Management
- Community pharmacy interventions
- Secondary care outpatient appointments
- Respiratory and home oxygen assessment service

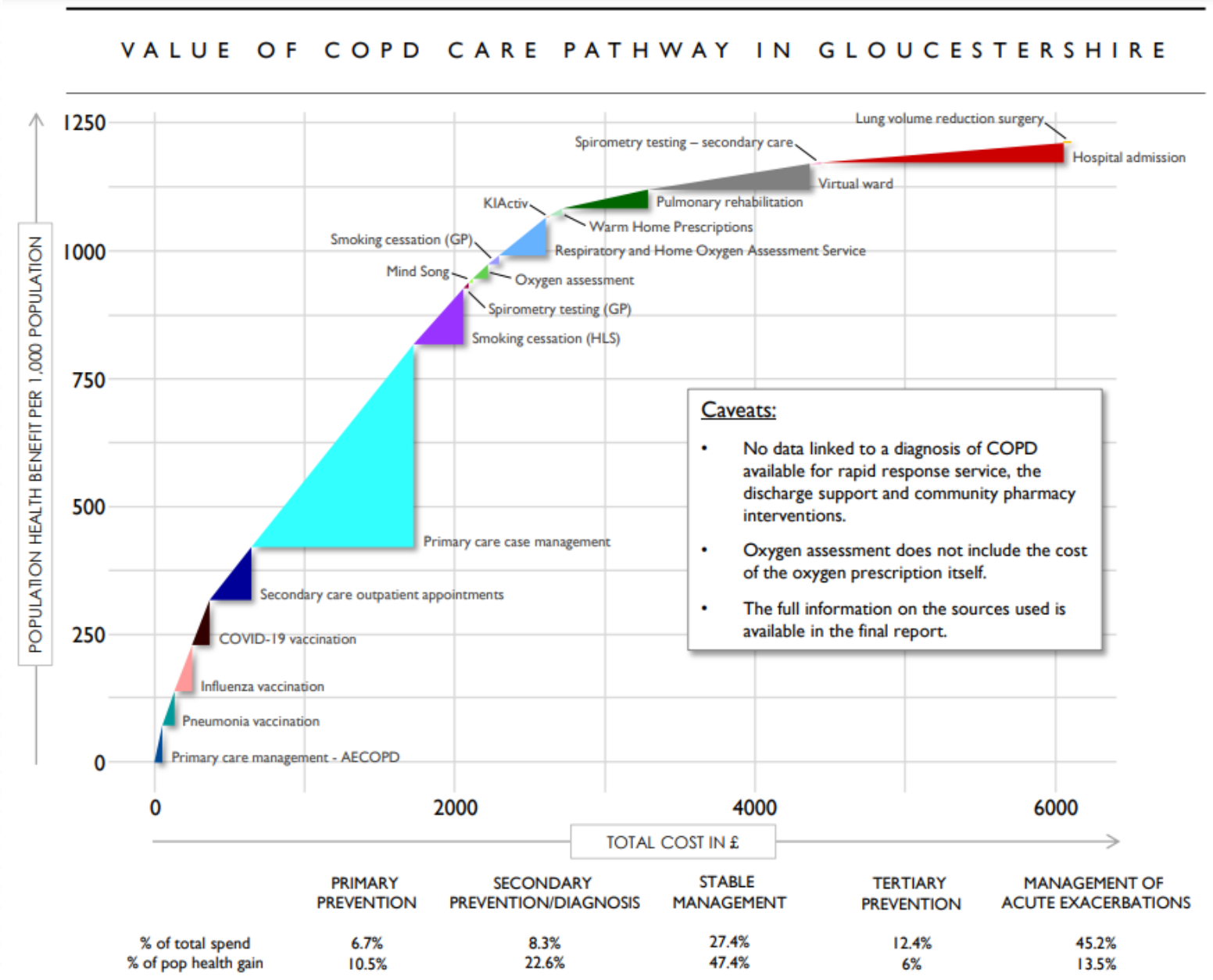
## Tertiary Prevention

- Pulmonary rehabilitation
- KiActiv
- Breath in Sing out
- Oxygen therapy
- Lung Volume Reduction Surgery
- Treating tobacco dependency

## Treating Acute Exacerbation

- Hospital admissions
- Primary care management
- Discharge support
- Virtual Ward
- Rapid response (admissions avoidance)


Rapid response (admission avoidance)
KiAktiv
Discharge support
Primary Care case Management Upper limit
Primary Care case Management Lower limit
Hospital admissions
Diagnosis via spirometry
Oxygen therapy
Treating tobacco dependency
0
50
100
Community pharmacy interventions – lower limit
Secondary care outpatient appointments
Respiratory vaccinations
Warm homes prescription
Lung Volume Reduction Surgery
Community pharmacy interventions – upper limit
Primary care management AECOPD
Treating tobacco dependency Lower limit
Treating tobacco dependency Upper limit
Virtual ward
Respiratory and Home Oxygen Service
Pulmonary rehabilitation
Mindsong
Key
Tertiary prevention
Primary prevention
Case Management
Secondary prevention
AECOPD care




| | PRIMARY PREVENTION | SECONDARY PREVENTION/DIAGNOSIS | STABLE MANAGEMENT | TERTIARY PREVENTION | MANAGEMENT OF ACUTE EXACERBATIONS |
|---|---|---|---|---|---|
| % of total spend | 6.7% | 8.3% | 27.4% | 12.4% | 45.2% |
| % of pop health gain | 10.5% | 22.6% | 47.4% | 6% | 13.5% |

This shows the value-for-money triangles of the current COPD pathway.

The aim of identifying initiatives is to alter individual interventions to ultimately shift the pathway:

↑ **Upward** Increasing population health benefit

← **Left** Reducing costs (where appropriate)

# The pathway improvements identified in each priority area

Interventions and initiatives within the four key areas were identified to be taken forward for modelling:

**More proactive and earlier interventions in primary care**

- Psychological support for patients
- Multi-professional team (MPT) management of patients
- Increase uptake of pneumonia vaccinations
- Proactive case finding

**Creation of a tobacco prevention and treatment alliance**

- Increasing uptake of smoking cessation services
- Vaping as a harm reduction pilot
- Very brief advice for tobacco dependency

**Enhancing the role of social prescribing and awareness of services**

- Avoiding fuel poverty
- Improving pulmonary rehabilitation services
- Improving uptake to Mindsong and KiActiv

**Managing acute exacerbations more efficiently**

- More effective use of the virtual ward
- Acute assessment hubs for emergency attendance avoidance

# The Experience

- Well structured programme supported by the Health Economics Unit (HEU).
- Engaged a lot of key stakeholders who could input into process. This has been key to get buy-in into the recommendations on the pathway.
- Upskilled our understanding and knowledge on health economics.
- Moved our system thinking towards a value-based health care (VBHC) approach i.e. improving outcomes that matter to users of services at the lowest possible cost.
- Given Gloucestershire a framework to use and adapt for other pathways.

# Lessons we've learnt

## The absence of data isn't a barrier

A decision framework that can incorporate the entire disease pathway from prevention to end of life care

## A structured and transparent process for evidence based decision making

Decision conferencing allows for consensus and collective decision making

## Patient input is vital

Decisions are influenced by those in the room

Get buy-in and engage with stakeholders early

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# Discussion and questions

Sharing lessons we've learnt and questions from you!