



Department
of Health



Pan American
Health
Organization



World Health
Organization

REGIONAL OFFICE FOR THE
Americas

Principles of health workforce demand modelling

Dr. Andrew Woodward, Head of Model Development, Workforce Analysis
E: andrew.woodward1@dh.gsi.gov.uk M: +44(0) 78 3305 8897

Definition of workforce demand

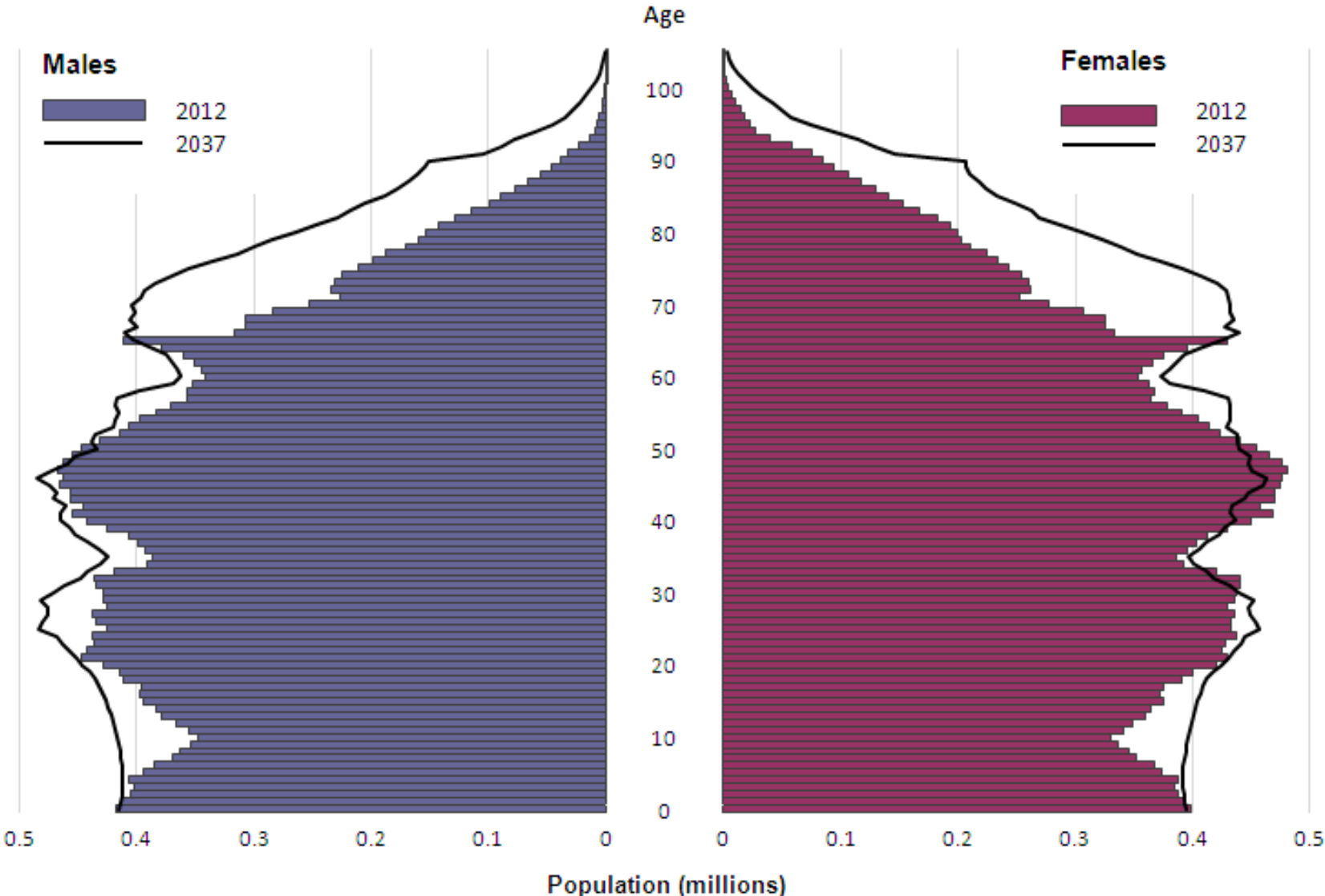
There is not 'one' definition, it is context specific.

Model of care – what workforce is needed to deliver a specific model of care?

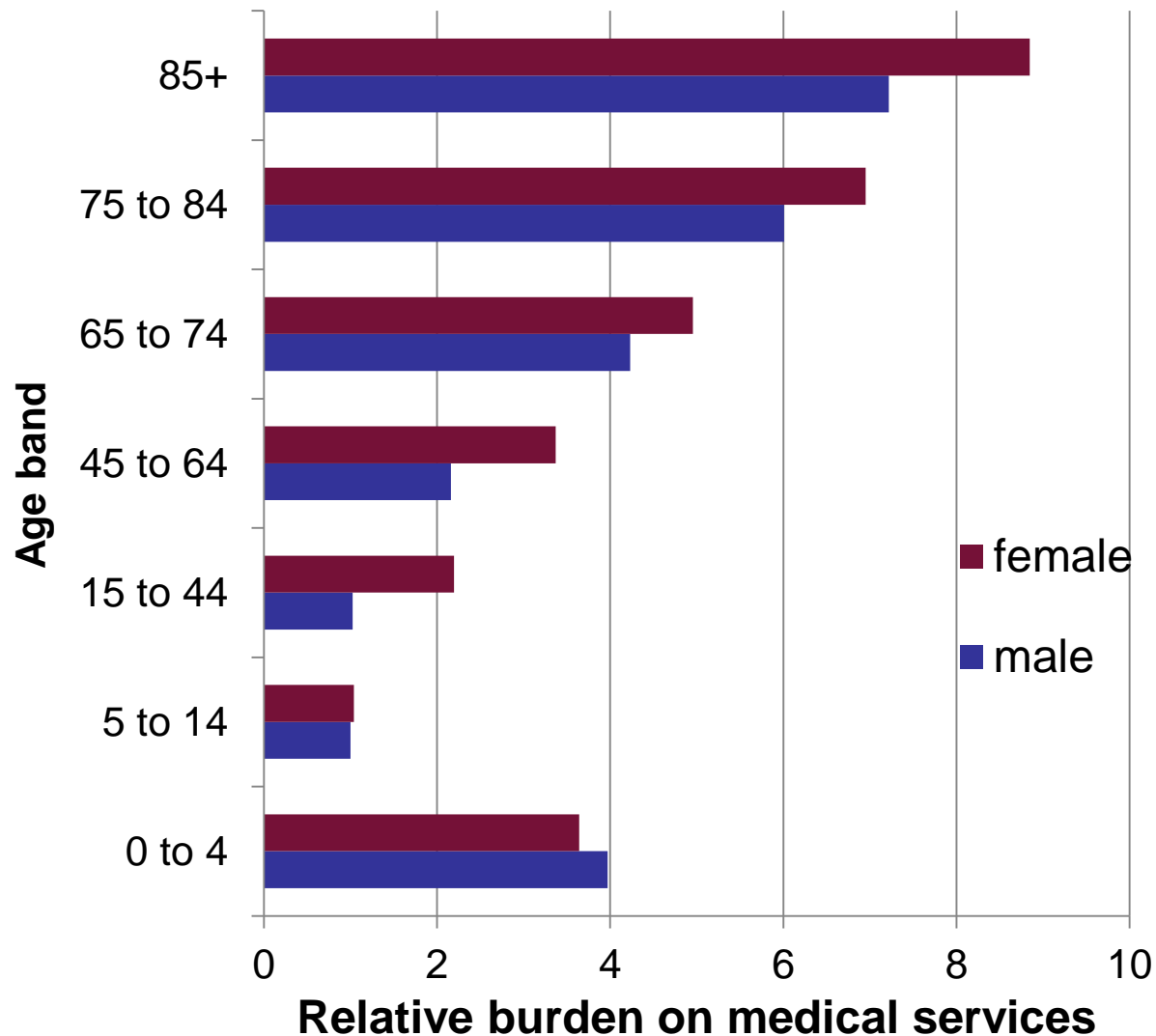
Financial envelope – what can you afford?

Skills and competencies – e.g. HS2035

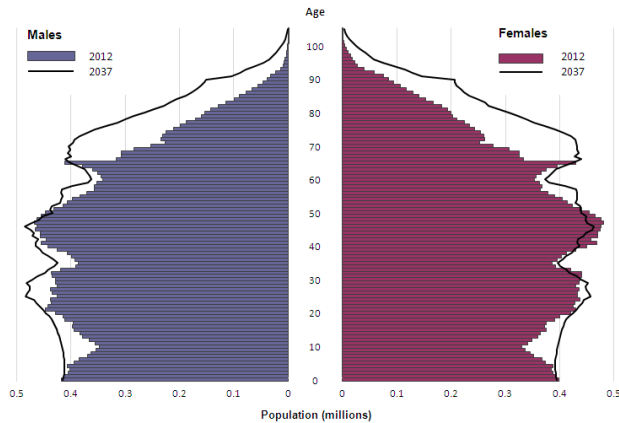
Population demographics



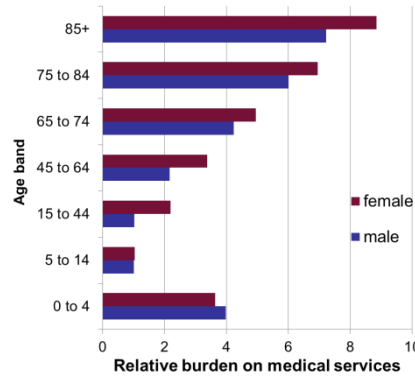
Activity by demographic group



Projecting burden on services

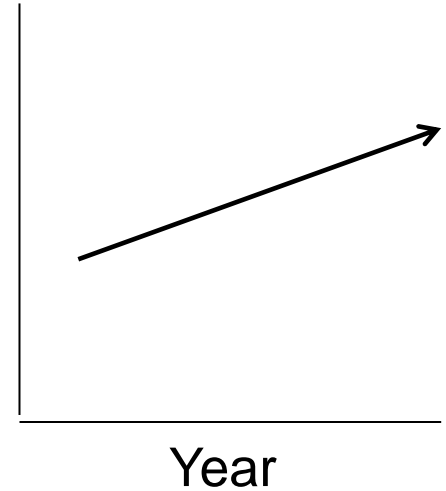


X



=

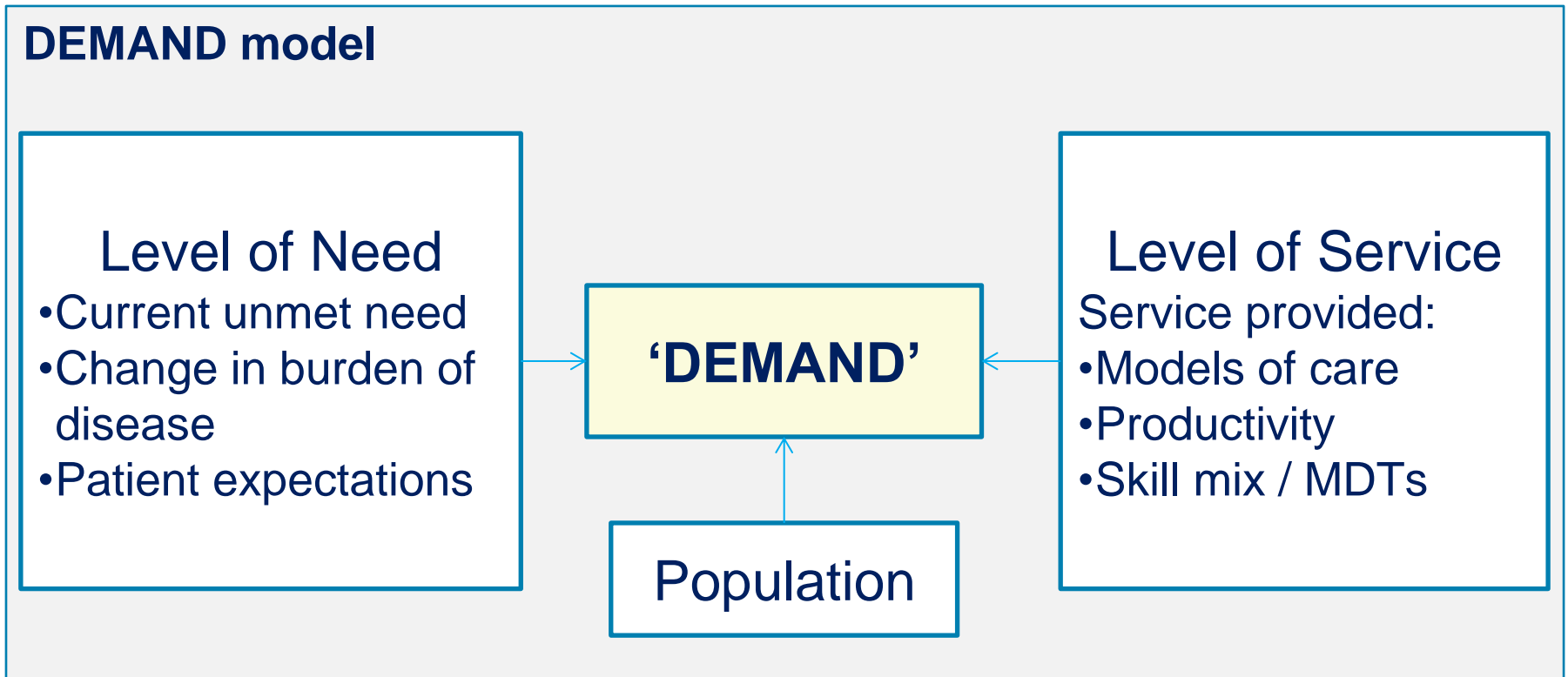
Demand



A crude estimate of demand

Projects for 'more of the same'

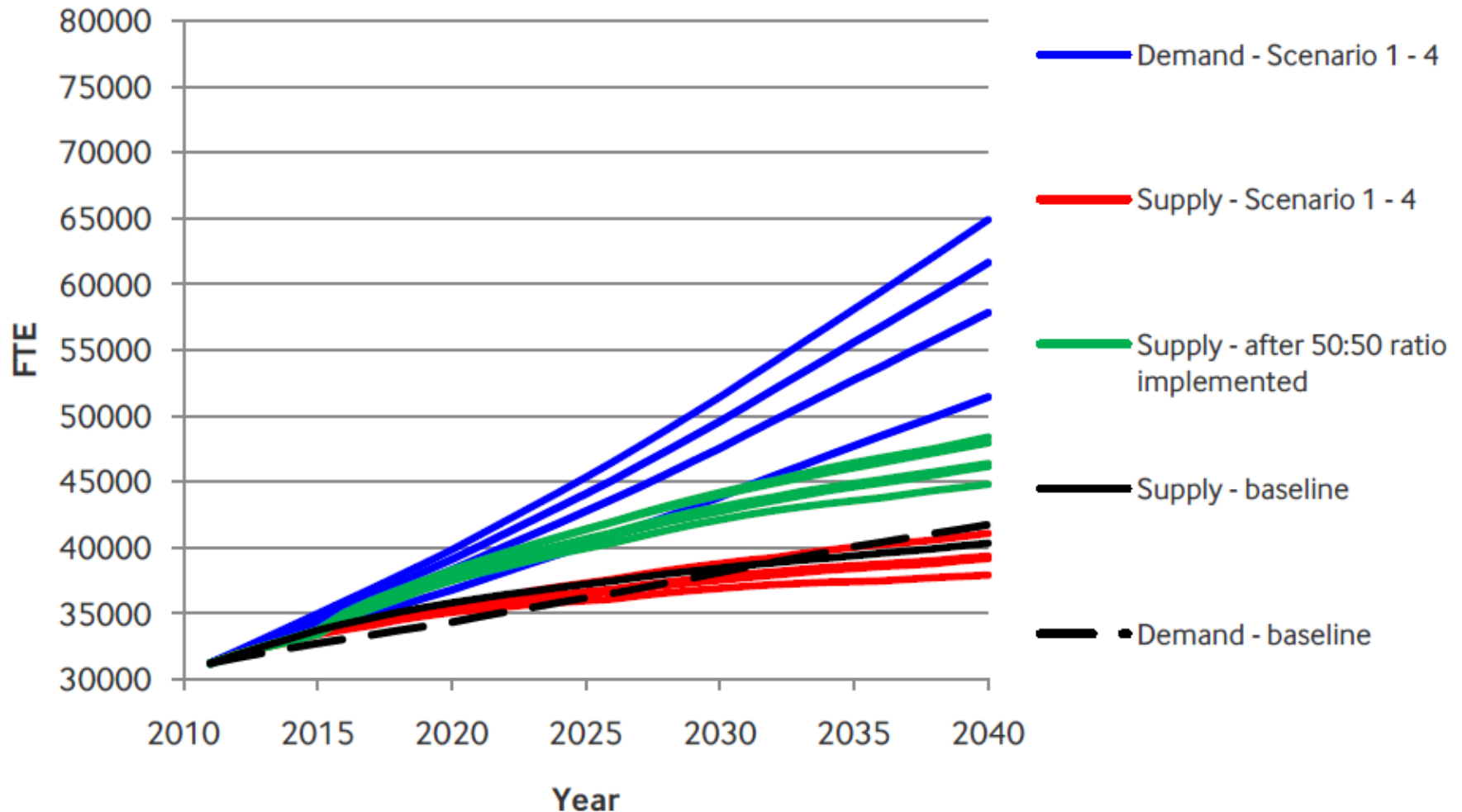
Levels of service, need, and productivity



Reliant on pre-determined models of care

Outcome: family doctor (GP) projection

GP supply and demand (FTE)



skills and competencies

Horizon 2035 challenge:

What skill and competences will be needed in twenty years time across the whole health and care system?

What are the implications for policy making?

We don't care how you do it!

Our process

What skills do we have today?

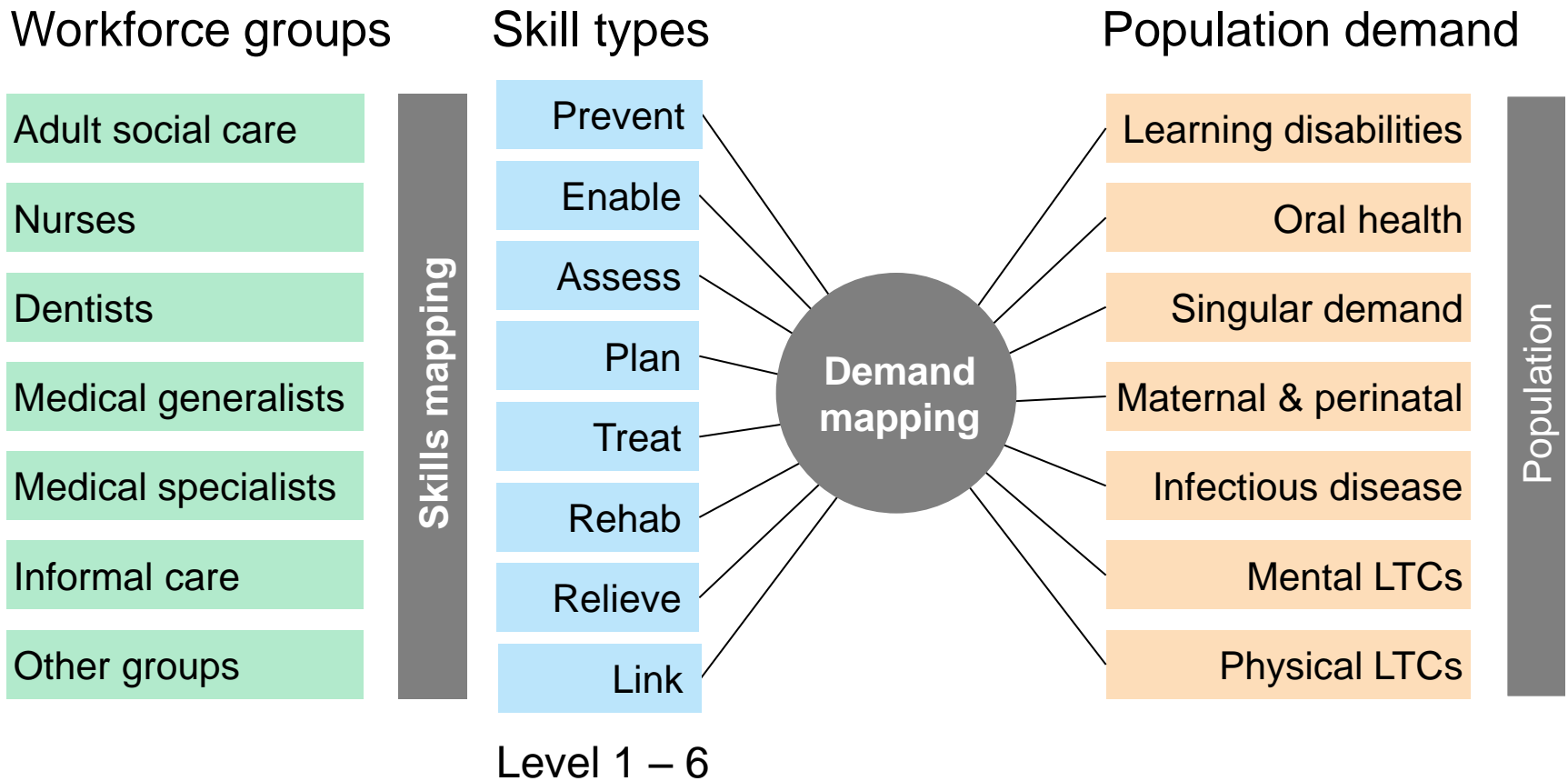
What drives the demand for skills?

How does the workforce currently meet this?

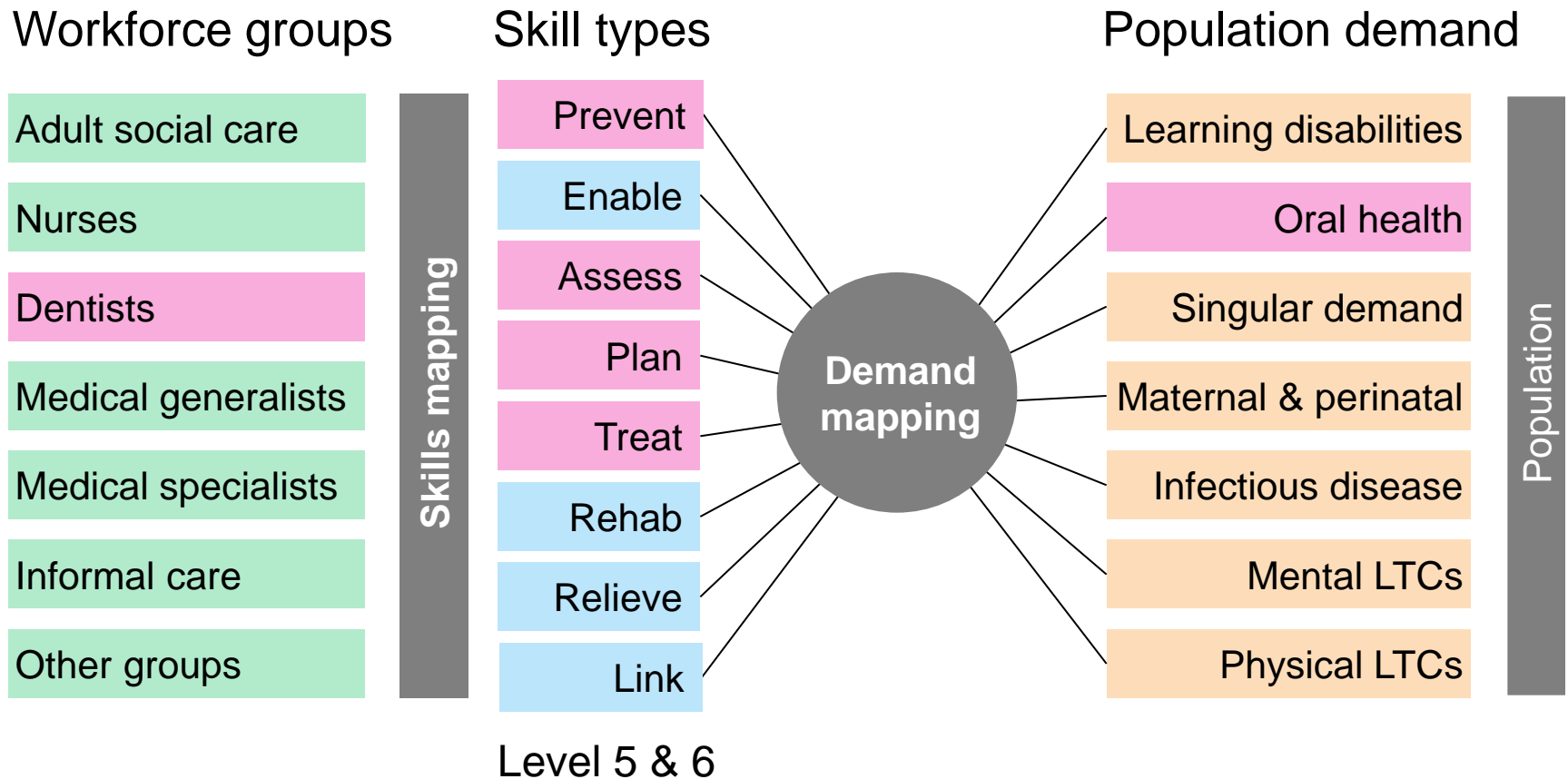
How might demand change in future?

What does this mean for skills?

Skills and demand framework



Example: Dentists



EXERCISE

Knowledge and uncertainty

Need to know about one or more quantities

You are experts with the best knowledge available to us

Nobody knows the true values

But you are less uncertain than others

Be honest about your knowledge

Elicitation method will capture your uncertainty

Doing it well

It is easy to make poor probability judgements

Major area of study in psychology, economics, statistics

Many sources of error and bias

- **confirmation bias** – supporting one's beliefs
- **anchoring** – thinking about the most recent information
- **bias blind spot** – I am less biased than you!

Formal process is needed that minimises bias

What is an informed observer?

Impartial, independent and unbiased

Listens to the evidence and discussions

Comes to an informed conclusion

Difficult concept – you need to answer from this viewpoint, even though you may not completely agree

Credible range

You would be surprised if the true value lay outside the range

You would be **surprised** if the true value was below the lower bound or above the upper bound, but not **amazed**

When discussing this range, think about different possibilities. What would it take for the figure to be below the lower bound? Or above the upper? Would that be a surprise? Would it be incredible?

We are looking for bounds that could be breached in a number of futures, but where the bulk of expectation is still within the range

Median

This is the value such that the statements ‘X lies above the median’ and ‘X lies below the median’ are equally likely

If you had to place a bet, which side would you jump? If you would prefer to bet on the true value being below the midpoint, then choose a median below it (and conversely)

You have the median if there is no difference if you were asked to bet on the answer being above or below your value

For most quantities we would expect the answer to be below the midpoint

Winter Olympics

The uncertain quantity X is the number of gold medals won by Finland in the Winter Olympics to date

What is the credible range such that you would be surprised (but not amazed) if the true answer were outside?

Available evidence

Finland is a small country with a population of 5.5m, and cold so might be quite good at Winter sports!

The USA has won 96 gold medals and Great Britain 22 medals

Elicitation at tables

Choose an option to elicit for your scenario:

Option 1

By 2040, what will be the % change in number of informal care givers in PAHO region?

Option 2

By 2040, what will be the % change in prevalence of NCDs?