Applying scenario methods to health and social care workforce planning

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What we used to do...

Do we trust this?

Trained hospital doctors (K)

Year

Supply

Demand

2014

2040

Do we trust this?
What if the future is not what we expect?

- System
- Problem
- Events
- Mega trends

Failure
Robust workforce planning

Shape your future

Stress test interventions

Understand the system

Define the enquiry

Scan for change

Scan the horizon

Imagine challenging futures

High degree of stakeholder involvement in all stages
Horizon scanning

Contextual analysis
- Issues
- Factors
- Events

Ideas about the future
- Probability
- Impact
- Workforce Stakeholder

Systemic analysis
Scenario generation

Influencing factors

Key factors

Consistency check

Narrative scenarios

Delphi to quantify

CENTRE FOR WORKFORCE INTELLIGENCE
Modeling and simulation
Pharmacy: how uncertain is the future?
Policy options

One-off supply reduction

- A: -20%
- B: -35%
- C: -50%

Phased supply reduction then balancing increase

- D: -5%
- E: -10%
- F: -15%
- +3%

5 Years 10 Years
Pharmacy example
Policy analysis

Policy options:
A
B
C
D
E
F

Today

Future
1
2
3
4

Policy outcomes
A new challenge: Horizon 2035

What skills and competences do we have?

What might we need in future?
What had we modelled in 2013?

- Health
- Public health
- Social care

2% Workforces modelled to date

98% Workforces not yet modelled
What about the rest of the system?

Health
Public health
Social care

2% Workforces modelled to date

- Other health and support (10%)
- Paid adult care and support (21%)
- Volunteer adult care and support (24%)
- Unpaid adult care and support (43%)
Some embarrassing problems...  
...mostly resolved!

1. Too many Delphi questions!
2. Only four scenarios?
3. We don’t know what skills are needed to meet future demand.
Solution 1: SHELフ

Sheffield Elicitation protocol

Monte Carlo simulation
Solution 1: Expert elicitation framework

- **Intensity of effort**
  - Traditional Delphi
  - EFSA Delphi
  - SHELFW

- **Number of parameters**
  - Traditional Delphi
  - EFSA Delphi
  - SHELFW
Solution 2: GBN method
Solution 2: CIB Analysis

<table>
<thead>
<tr>
<th>Population</th>
<th>GDP growth</th>
<th>Energy usage</th>
<th>Carbon emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>B</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>C</td>
<td></td>
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</tbody>
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- Population and GDP growth are high in one scenario and low in the other.
- Energy usage and carbon emissions show a similar pattern with high in one and low in the other.
Solution 3: Skills framework

- Competences
  - Skills
    - Wellbeing
    - Leadership
    - Facilitation
  - Knowledge
  - Personal

- Types of skill
  - Quantitative skills
  - Qualitative skills

- Level of skill
  - Quantitative skills
  - Qualitative skills
What skills do you have today?

**Workforce groups**

- Adult social care
- Nurses
- Dentists
- Medical generalists
- Medical specialists
- Volunteer care and support
- Other workforce groups

**Skill types**

- Prevent
- Enable
- Assess
- Plan
- Treat
- Rehabilitate
- Relieve
- Link
What drives the demand for skills?

- Learning disabilities
- Oral health
- Singular demand for service
- Maternal and perinatal
- Infectious disease
- Mental long-term conditions
- Physical long-term conditions
How do our skills meet demand?
How do our skills meet demand?

**Workforce groups**
- Unpaid adult social care workforce
- Nurses
- Dentists
- Medical generalists
- Medical specialists
- Volunteer care and support workforce
- Other workforce groups

**Skill types**
- Prevent
- Enable
- Assess
- Plan
- Treat
- Rehabilitate
- Relieve
- Link

**Levels**
- 5

**Demand driver lens**

**Population**
- Learning disabilities
- Oral health
- Singular demand for service
- Maternal and perinatal
- Infectious disease
- Mental long-term conditions
- Physical long-term conditions
Different futures
Six narrative and quantified scenarios
How does skills demand change?

Reference future

9.3 billion hours
FTE: 5,735,000

12.7 billion hours
FTE: 7,772,000

Change:
Hours: 3.3Bn
FTE: 2,037,000 +36%
How does skills demand change?

Monte Carlo simulation
Change in demand

Demand (B)
- LTC Physical health: 0.4
- LTC Mental health: 0.7
- Learning disabilities: 2.1

Skill level (B)
- L3: 0.3
- L2: 0.6
- L1: 2.3
Next steps

1. Multi-scale scenarios and reuse.
2. Probability of scenarios?
3. Presenting findings to policy makers.
More information

Horizon 2035
Future demand for skills: Initial results

http://www.cfwi.org.uk/publications/horizon-2035-future-demand-for-skills-initial-results
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