We have had 2 healthcare revolutions, with amazing impact

The First was the public health revolution

The Second has been the technological revolution supported by 50 years of increased investment & 20 years of evidence based medicine, quality and safety improvement eg

- Antibiotics
- MRI & CT
- Coronary artery bypass graft surgery
- Hip & knee replacement
- Chemotherapy
- Radiotherapy
- Randomised controlled trials
- Systematic reviews
after 50 years of progress all societies still face three massive problems. The first is unwarranted variation in healthcare ie ”Variation in utilization of health care services that cannot be explained by variation in patient need or patient preferences.” Jack Wennberg Variation reveals the other two problems
The first is **Underuse** of high value interventions which results in
1. Preventable disability and death eg if we managed atrial fibrillation optimally there would be 5,000 fewer strokes and 10% reduction in vascular dementia, and
2. inequity
The first is overuse which
1. always wastes resources and
2. can cause harm
Hip replacement in most deprived populations compared with least derived populations

31

Knee replacement in most deprived populations compared with least derived populations

33

Provision less than expected

THERE IS ALSO TRIPLE WHAMMY HEALTHCARE!
OVERUSE + UNDERUSE + UNWARRANTED VARIATION
NHS or nHS?

- Is the service for people with psoriasis in Manchester of higher value than the service in Liverpool or Birmingham?
- How many musculoskeletal services are there for people in and how many should there be?
- Who is responsible for publishing the Annual Report on care for people with kidney disease in Kent?
- How many people are there with kidney disease in Somerset, is the rate difference from that in Leicestershire?
- How many people are there with kidney disease in South East London
In the next decade need and demand will increase by at least 20% so what can we do?

Well, we need to continue to
1. Prevent disease, disability, dementia and frailty to reduce need
2. Improve outcome by provide only effective, evidence based interventions
3. Improve outcome by increasing quality and safety of process
4. Increase productivity by reducing cost

These measures reduce need and improve efficiency

BUT we also need to increase value
The Aim is **triple value**

- Allocative value, determined by how well the assets are distributed to different sub groups in the population
  - Between programme
  - Between system
  - Within system
- Technical or utilisation value determined by how well resources are used for outcomes for all the people in need in the population
- Personalised value, determined by how well the outcome relates to the values of each individual

Waste is anything that does not add value and as the Academy’s report emphasises we need to develop a ‘culture of stewardship’ to ensure the NHS will be with us in 2025 and 2035
Productivity Outputs/Costs

For example, average duration of stay for knee replacement

Value based Healthcare
FOR EXAMPLE, % OF PATIENTS WHO HAVE A KNEE REPLACEMENT AND REPORT THAT THE OUTCOME IS GOOD OR VERY GOOD.
Technical Value
Are the right patients being seen or is there either
1. harm from over diagnosis or
2. inequity from underuse

Efficiency
Outcomes/costs

Productivity
Outputs/Costs

Value based Healthcare
THE Better Value Healthcare METHOD OF INCREASING VALUE FOR POPULATIONS AND INDIVIDUALS IS BY

- Ensuring that every individual receives high personal value by providing people with full information about the risks and benefits of the intervention being offered
- Shifting resource from budgets where there is evidence of overuse or lower value to budgets for populations in which there is evidence of underuse and inequity
- Develop population based systems that
  - Address the needs of all the people in need, with the specialist service seeing those who would benefit most
  - Implement high value innovation funded by reduced spending on lower value intervention
  - Increase rates of higher value intervention funded by reduced spending on lower value intervention eg shift resources from treatment to prevention
The value this patient places on benefits & harms of the options and on risk taking

Evidence, Derived from the study of groups of patients

The clinical condition of this patient; other diagnoses, risk factors including genomic information and in particular their problem, what bothers them psychologically & socially

Patient Report of the impact of the decision on problem that was bothering them most

NO ONE SHOULD HAVE AN INTERVENTION WITH SIGNIFICANT RISK WITHOUT
1. ASCERTAINMENT OF WHAT IS BOTHERING THEM
2. USE OF A PATIENT DECISION AID
We are now in the third healthcare revolution

The First

The Second
- Antibiotics
- MRI
- CT
- Ultrasound
- Stents
- Hip and knee replacement
- Chemotherapy
- Radiotherapy
- RCTs
- Systematic reviews

the Third

Citizens
Knowledge
Smart Phone
2. Shifting resource from budgets where there is evidence from unwarranted variation of overuse or lower value to budgets for populations in which there is evidence of underuse and inequity
ANNUAL SPEND PER MILLION

www.NHS England.progammebudgeting
2. We are working to develop programme budgets determined by characteristic such as being elderly with frailty.

Many people have more than one problem; they have complex needs. GPs are skilled in managing complexity but when one of the problems becomes complicated the Generalist needs Specialist help.
<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>RATIO OF THE LOWEST TO THE HIGHEST RATE AFTER THE 5 HIGHEST AND THE 5 LOWEST HAD BEEN EXCLUDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVAR PROCEDURES FOR AAA/100,000</td>
<td>4.3</td>
</tr>
<tr>
<td>DEXA SCANS /1000</td>
<td>6</td>
</tr>
<tr>
<td>FREE THYROID HORMONE TESTS/1000 ORDERED BY GP</td>
<td>16</td>
</tr>
<tr>
<td>PSA TESTS /1000</td>
<td>4.7</td>
</tr>
<tr>
<td>% OF DEATHS IN HOSPITAL</td>
<td>1.73</td>
</tr>
<tr>
<td>CRUCIATE LIGAMENT RECONSTRUCTION</td>
<td>50</td>
</tr>
<tr>
<td>FOLATE TESTING</td>
<td>14</td>
</tr>
<tr>
<td>RHEUMATOID FACTOR TESTING</td>
<td>107</td>
</tr>
</tbody>
</table>
Within Programme, Between System Marginal analysis is a clinician responsibility
Population healthcare systems focus primarily on populations defined by a common need which may be a symptom such as breathlessness, a condition such as arthritis or a common characteristic such as frailty in old age, not on institutions, or specialties or technologies. Its aim is to maximise value for those populations and the individuals within them.
3. Develop population based systems that meet the needs of all the people affected by ensuring that those people in the population who will derive most from a service are in receipt of that service if necessary by reducing the number of people seen by that service directly.

- All people with the condition
- People receiving the specialist service
- People who would benefit most from the specialist service

This requires clinicians including specialists to become population focused as well as delivering high quality care to referred patients and the surgical services initiative which is part of the Efficiency programme will develop this approach.
Population based systems that implement high value innovation funded by reduced spending on lower value intervention in the same programme budget.
Population based systems that optimise resource use for each population

- Asthma
- COPD (Chronic Obstructive Pulmonary Disease)
- Apnoea
- Cancers
- Respiratory
- Gastro-intestinal

- Triple Drug Therapy
- Stop Smoking
- Imaging
- O₂
- Rehabilitation
POPULATIONS DEFINED BY NEED eg People with:

- Mental health problems
- Type 1 diabetes
- Multiple morbidity
- Back pain

TYPES OF CARE:

- Super specialist
- Specialist
- Generalist
- Informal care
- Self care

BUREAUCRACIES:

- CCG
- GPs
- Spec
- NHSE
- STP
- PHE
- Trust
- LA
- Com
The Healthcare Archipelago

- General Practice
- Mental Health
- Private Physiotherapy
- Osteopathy
- Chiropractic
- Hospital Services
### CHOOSING CRITERIA & SETTING STANDARDS

#### Newborn Screening for Sickle Cell Disorders Programme Standards

<table>
<thead>
<tr>
<th>NEWBORN PROGRAMME OBJECTIVES:</th>
<th>CRITERIA</th>
<th>STANDARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programme Outcome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Best possible survival for infants detected with a sickle cell disorder by the screening programme</td>
<td>Mortality rates expressed in person years</td>
<td>Mortality rate from sickle cell disease and its complications in children under five of less than four per 1000 person years of life (two deaths per 100 affected children)</td>
</tr>
<tr>
<td>Programme Outcome</td>
<td></td>
<td>Achievable (Developmental)</td>
</tr>
<tr>
<td>Accurate detection of all infants born with major clinically significant haemoglobin disorders*</td>
<td>Sensitivity of the screening process (offer, test and repeat test)</td>
<td>99% detection for Hb-SS 98% detection for Hb-SC 95% detection for other variants</td>
</tr>
</tbody>
</table>

This is an example of a national service set up as a system
1. INTRODUCE NEW LANGUAGE

Ban old language

PrimarySecondaryAcuteCommunityManagerOutpatientHubandSpoke

Introduce new language

A **SYSTEM** is a set of activities with a common set of objectives and outcomes; and an annual report. Systems can focus on symptoms, conditions or subgroups of the population (delivered as a service the configuration of which may vary from one population to another).

A **NETWORK** is a set of individuals and organisations that deliver the system’s objectives (a team is a set of individuals or departments within one organisation).

A **PATHWAY** is the route patients usually follow through the network.

A **PROGRAMME** is a set of systems with a common knowledge base and a common budget.
Introduce new language eg MUDA
2. TRAINING - We need a new set of skills and tools

what is the relationship between value and efficiency?
What is the relationship between value and quality?
what is meant by the optimal use of resources?
How would you assess the culture of an organisation?
What is a system and what is a network?
What is the relationship between a system and a service?
Work like an ant colony; Neither markets nor bureaucracies can solve the challenges of complexity