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We will discuss:

- The Welsh view of value-based healthcare?
- How do we generate value?
- How can we collect and use patient-reported outcomes?
- A few thoughts about HTA
• Towards truly shared decisions
• Promoting equity
• Avoiding harm, including through over-diagnosis/treatment
• Tackling unwarranted variation
VALUE = OUTCOMES / COSTS

✓ Total costs of care over the care cycle, and
✓ Outcomes that matter for the patient’s condition over the care cycle.

‘Have we allocated resources to different groups equitably and in a way that maximises value for the whole population?’

Sir Muir Gray

• Between programmes
• Between systems in each programme
• Between interventions within each system
How do we generate value across a system of care?

**Patient factors**
- Raise health literacy
- Support healthy behaviours
- Support shared understanding of medicine-towards the best choices

**Healthcare factors**
- Decrease unwarranted variation
- Optimum positioning of drugs and devices
- Ideal population to real population
- Generalised care to personalised care
- Focus on meeting true need
- Resource allocation
Improving outcomes, improving population value in heart failure

Prevention

Early accurate diagnosis

Optimising intervention

Supportive treatment

End of life care

Cardiovascular risk factors

Symptom recognition

Pro BNP testing

Echocardiography

Medicines titration and monitoring

Community nurse specialist support

Devices

Digitally enabled remote review

Palliative care

Parenteral diuretics

Anticipatory care planning

Preferred place of care
Evidence-based medicine – has it succeeded?

• ‘Evidence-based practice is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient. It means integrating individual clinical expertise with the best available external clinical evidence from systematic research.’

• ‘The patient brings to the encounter his or her own personal preferences and unique concerns, expectations, and values.’

David Sackett
Reallocating resource for Value across a programme of care (COPD)
The consequences of not knowing

Real world clinical effectiveness unknown

Multi-morbidity effects

Patient preference and context

Clinical variation

Incomplete info/advice for people to make decisions

No way of objectively knowing how people are getting on at home

Voltaire (1694-1778)

‘Doctors pour drugs of which they know little, to cure diseases of which they know less, into patients of whom they know nothing’
COLLECTING PATIENT-REPORTED OUTCOMES – KEY LESSONS

- Enhancing electronic communication with patients facilitates data capture
  - It also enables other tasks to be completed by the patient/clinician
  - This allows large scale semi-automated collection of patient-reported outcomes

- Data visualisation and accessibility for patients and clinicians are key
Functions of patient-facing applications:

- Appointment text reminders
- Ability to book and cancel appointments
- Collection and display of patient-report outcome and experience questionnaires
- Allowing access to and sharing of parts of the medical record
- Access to test results, etc
- Access to clinical advice
- Monitoring of clinical parameters through wearables
- Management of chronic disease eg diabetes
- Access to self-management resources
Changing behaviour – everybody’s business
USING PATIENT-REPORTED OUTCOMES – KEY LESSONS

‘An outcome is a milestone, endpoint or consequence which matters to a person’

**Chronic disease**
- Symptom tracker e.g. KCCQ
- Shared decision making
- Triggers for key conversations

**Episodic care**

**Individual**
- Improving through comparing
- Identifying unmet need
- Flexible approach to case load
- Identifying unwarranted variation
- Real world information

**Aggregated +/- adjusted Linked**
The Patient Health Questionnaire-2 (PHQ-2)

The PHQ-2 inquires about frequency of depressed mood and anhedonia over the past 2 weeks.

Cardiomyopathy Questionnaire (KCCQ-12)

The KCCQ-12 inquires about how heart failure affects the patient's life.

Patient reported swelling in morning:

- Stable: 66%
- Moderate: 5%
- Severe: 15%
- Blank: 14%

Patient reported sleeping sitting up:

- Stable: 62%
- Moderate: 17%
- Severe: 18%
- Blank: 18%

Prevalence of a significant trigger score for depression: 32.4%
Physical Limitation

Swelling

Fatigue

Shortness of breath

Sleep sitting up

Social Limitation

Living with HF

Enjoyment of life

Individual Level Radar Chart representing 3 heart failure patients that responded to the Cardiomyopathy Questionnaire (Kansas City KCCQ-12)

Radar Chart Notes

The radar chart represents 3 individual patients that have been randomly selected from the PROM data based on their responses to question 2: Occurrence of leg/feet swelling, and question 5: Occurrence of being forced to sleep sitting up. 3 patients have been randomly selected and assigned to the following categories:

Stable: recorded 5 for both questions
Moderate: recorded 3 for both questions
Severe: recorded 1 for both question.

It should be noted that a subsequent selection of patients may yield different results.

The Kansas City KCCQ-12 PROM questions have a varying number of available responses. To create the radar chart, we have had to standardise the number of responses for each question by grouping all answers into 5 groups.

The axis has been labeled 1 - 5 and represents question specific responses. In general, 1 is the most negative responses a HF patient could give and 5 is the most positive.

Please note that the Social Limitation and Physical Limitation categories illustrate the mean response from 3 questions in each category.
Cemented TKR Patients

Femoral brand

Boxplots of the gain in Oxford Knee Scores by Femoral Brand

Gain in Oxford Knee Score by Femoral Brand

Cedar
Medical Devices – improving outcomes, value and safety, reducing unwarranted variation

• **Novel products** – may be high value but there may be a paucity of data

• **Replacement products** – deemed to be better value eg lower cost, similar function.

• **Potential overuse (suboptimal positioning)** of a cost effective product which when used out of context is of lower value
Visualisation Best Practice

Following the design principles enables the development of clean, uncluttered report pages that are easy to use and understand. Key features are highlighted below:

- **NWIS and NHS themed PowerBI templates** available to enable the efficient deployment of consistent and professionally branded reports.
- **Pie or doughnut charts** can be effective where the number of categories displayed is low (e.g. 2-3).
- **Card and KPI visuals** clearly display key metrics and can be effective in the header bar.
- **Filters** allow users to interact with the report and explore subsets of the full dataset.
- **Data slicers** quickly enable users to alter the time period shown in the dashboard.
- **Add meaningful headers and, if needed, use text boxes to provide context.**
- **Limiting the number of charts on a page** can help to give the report a cleaner feel and aid understanding. Too much information on a page makes understanding the key messages more difficult.
- **Bar charts and histograms** clearly display data. Data labels can be added to allow axes to be removed, reducing clutter on the page.
- **Provide details of how users of the report(s) can access support or assistance if needed.**

NWIS and NHS themed PowerBI templates available to enable the efficient deployment of consistent and professionally branded reports.
The National Data Resource – NDR
A key Welsh Government priority

Statement of Intent

“A more joined-up approach is required, moving away from silos of data, and supporting a better flow of data that can be linked and made available as a ‘national data resource’ to support national and local uses”.

Welsh Government

A Healthier Wales: our Plan for Health and Social Care

We need to “establish a national data resource which allows large scale information to be shared securely and appropriately”

Welsh Government
The NDR and the National Digital Architecture

Analytics and BI

Self service
Reporting
Dashboards
AI

“MESSAGING FABRIC”
- Standards (SOAP, REST, HL7, FHIR etc)
- Transformation
- Process Orchestration

Monitoring and performance
Security

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NDR

National data store

Users (NADEX/ESR)
Patients (MPI)
Diagnostics (WRRS)
Documents (WCRS)
Primary Care Data (WGPR)
Images (WIAS)
Structured Clinical Data (WCDR)
Workflow Service
Terminology & Reference Data (WRDS)
Conclusion – the way forward?

• Tracking of condition-specific outcomes and global QOL post-adoption
• More work needed to enable us to calculate QALYs from condition-specific tools
• Consideration given to the total impact on the care pathway of the intervention and the feasibility of adoption in a local context
• Differences in approach between diagnostic and treatment devices
Thank you for listening