Implementation of outcomes-driven and value-based mental health care in the UK

ABSTRACT

Health-care companies around the world face an unprecedented challenge of rising health-care costs, increasing life expectancy and escalating demand. Although national health-care budgets have increased (as a percentage of gross domestic product) health care continues to impart significant upward pressure on national expenditure, particularly in the UK (Licchetta and Stelmach, 2016). Additionally a substantial funding gap will continue to grow (Gainsbury, 2016). In response to this challenge a 'value' based strategy has gained momentum over the last two decades. Several pioneers of this approach (Sir Muir Gray at Oxford University, Professor Michael Porter at Harvard University and Professor Elizabeth Teisberg at Dell Medical School) emphasize the importance of organizations focusing on 'value'. Porter and Teisberg (2006) highlight the 'value equation' as obtaining the very best patient outcomes for each unit of currency spent. Gray expands on this model, describing three types of value: allocative, technical and personal (Gray, 2011). Although some global health-care organizations have embraced the value-based agenda to transform acute care facilities, mental health providers have been slow to consider the benefits of this approach. This article gives a broad overview of implementing a value-based model in mental health care, the significant development resources needed, organizational issues, and finally concludes with the benefits and a vision of value-based mental health care for the future.

The dominant health-care commissioning model in the UK is a payment system based on bed usage and block contracts. This means that most provider organizations are paid by the purchaser, predominantly the NHS, dependent on the numbers of patients admitted, irrespective of the clinical outcomes. More recently, some payment has been withheld by the purchaser to incentivize specific clinical developments through commissioning for quality and innovation. Although this is often a small fraction of the overall payment, it could be argued that this has had a nugatory effect on overall quality. In response to this impasse the NHS has begun to discuss outcomes-based payments (capitated outcomes-based incentivized care) but this is still in a relatively early phase (Hicks, 2017). Moreover, NHS England has indicated that they would like to pilot a 'payment by results' system within mental health using a range of outcome measures; however, this is currently in consultation (NHS England, 2016).

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Components of a health-care system

Avedis Donabedian, a pioneer of health-care systems research, indicated in his early work that any health-care system constitutes three main components: process, structure and outcomes. Donabedian (1966) concluded in his comprehensive exposition that 'outcomes, by and large, remain the ultimate validators of the effectiveness and quality of medical care'. Despite an historical appreciation of outcomes being of critical importance by forerunners such as Ernest Codman (Neuhauser, 2002) and Florence Nightingale (Neuhauser, 2003), an over-reliance on 'process' and corollary 'process measures' led to a global multi-agency neglect of clinical outcomes as the main driver for quality improvement as advocated by Nightingale, Codman and Donabedian.

The current value agenda attempts to address this historical imbalance by clearly setting 'outcomes' as the most important driver for care improvement. The vital shift is moving from a focus on inputs to an emphasis on outputs, and value rather than volume. This agenda furthermore mandates that organizations should understand that clinical outcomes reflect the most important clinical results patients expect, which can often represent improvements in their capability, functional ability and quality of life after the medical intervention. In a value-based system meaningful patient-defined outcomes are given absolute priority (Porter, 2010). This core understanding of the importance of meaningful outcomes was the patient-centred bedrock upon which the transformation programme was launched at St Andrew's Healthcare.

The St Andrew's method: 'co-production' and global collaboration

In 2015, St Andrew's established its vision to transform lives by delivering world-class mental health care; a bold ambition that needed meaningful definition. The move to value-based health care was borne out of an exploration of the global health landscape and work at St Andrew's, with patients, to define what 'world class' means to them. The team at St Andrew's interrogated new thinking,

checked alignment with patients' desired outcomes and other internal drivers and found that value-based health care married both factors, proposing a holistic outcomes-centred approach that considered the entire health-care system.

St Andrew's Healthcare is a charity founded in 1838 that has grown into a medium-sized mental health provider. Like most of the wider UK mental health sector, until recently St Andrew's concentrated predominantly on process measures. From the autumn of 2015 through to early 2016 a comprehensive scoping exercise was conducted to find the most effective way to transform St Andrew's and gain improved outcomes for patients. This seminal work focused on reviewing the very best international evidence in health-care system design. A fundamental and highly important step in this process was early guidance from Sir Muir Gray, an internationally renowned authority on value-based health care based at the University of Oxford (Gray, 2011). Recognizing the need for more meaningful outcomes and after extensive consultation, it was decided to 'co-produce' the clinical outcomes with patients, with a clear understanding that they may have different ideas about what they deem to be successful care. The aim was to produce and implement an 'outcomes framework' in line with other guidance from the UK Department of Health (NHS England and NHS Improvement, 2016a,b). The National Endowment for Science Technology and the Arts definition of 'co-production' (Boyle and Harris, 2009) was used, namely:

> **'Co-production means delivering public services in an equal and reciprocal relationship between professionals, people using services, their families and their neighbours. Where activities are co-produced in this way, both services and neighbourhoods become far more effective agents of change'.**

The transformation started in early 2016 when the organizational 'heads of profession' (e.g. health care, psychology, social work, occupational therapy, chaplaincy) met to discuss clinical outcomes and the charity's transformation process. This was a detailed piece of work taking many weeks of collaborative development; it acted as an important step to gaining the input of a broad range of clinicians and engaging them at an early stage in the change programme. The heads of profession produced putative areas of clinical importance focused around three main outcomes areas: mental health, physical health and 'personalisation' (quality of life and rights).

After these broad areas had been defined, 14 focus groups were held across the charity's four clinical sites, involving patients, clinicians and 'carers' (family members and friends of patients). This piece of work lasted 6 months (August 2016 until March 2017) and required considerable organization and coordination. Technical and logistical support was gained from a dedicated project manager, the in-house patient experience team and several clinician volunteers. A patient lead was also appointed to work in tandem with the organizational outcomes lead and a patient outcomes committee was established (with eight members) which provided invaluable direction and discussion. Overall, over 130 stakeholders across all sites of the charity were involved in the 14 focus groups.

Table 1. The 28 co-produced outcome priorities

Personalisation	■ I am working toward getting back to work
	■ I feel supported
	■ I feel safe
	■ I have a strong team
	■ I have family contact
	■ I have consistency
	■ I have good communication
	■ I have staff I can trust
	■ I had a smooth transition
	■ I have access to employment and/or vocational opportunities
	■ I have leave into the community
	■ I have more responsibility
	■ I am independent
	■ I am occupied in my time
Mental health	■ I know how to manage my emotions
	■ I have skills to help me when I am in distress
	■ I am not distressed
	■ I am happy
	■ I am confident
	■ I feel a sense of belonging (spirituality)
Physical health	■ I feel physically well
	■ I am a healthy weight
	■ My physical health is managed well
	■ My diabetes is managed effectively
	■ I am prescribed the least medication possible
	■ I sleep well and feel refreshed in the morning
	■ I exercise regularly
	■ I will live a normal lifespan

The content from each focus group was transcribed and analysed using a validated focus group research methodology (Krueger and Casey, 2009) to tease out important themes in the data. The data eventually revealed 28 co-produced patient outcome priorities (*Table 1*). A combined patient and clinician outcome committee signed off the outcome areas at the end of the consultation period in March 2017 and these were presented to the executive team, who gave their complete support and full commitment to the developing framework.

After the 28 outcome areas had been defined, outcome 'instruments' were selected to measure each. Every outcome instrument was selected because of its fidelity to the specific outcome area, validity and comparability to other organizations. The team was also guided by the

Table 2. Key attributes of an integrated practice unit
Organized around the patient's medical condition or set of closely related conditions
Involves a dedicated multidisciplinary team who devotes a significant amount of time to the condition
Providers involved are members of, or affiliated with, a common organizational unit
Takes responsibility for the full cycle of care for the condition encompassing outpatient, inpatient and rehabilitative care as well as supporting services (e.g. nutrition, social work, behavioural health)
Incorporates patient education, engagement and follow up as integral to care
Uses a single administrative and scheduling structure
Co-located in dedicated facilities
Care is led by a physician team captain and care manager who oversee each patient's care process
Measures outcomes, costs and processes for each patient using a common information platform
Providers function as a team, meeting formally and informally on a regular basis to discuss patients, processes and results
Accepts joint accountability for outcomes and costs
From Porter (2017)

Department of Health and developments in the wider UK mental health outcome community, particularly the quarterly UK Routine Clinical Outcome Measures group formed by Professor Alastair Macdonald at King's College London. Department of Health guidance indicated that to produce a 'balanced scorecard' approach a variety of tools were needed, including a patient-rated outcome measure, a clinician-rated outcome measure and a patient-rated experience measure (De Silva, 2013). Examples of instruments chosen are Health of the Nation Outcome Scales, Recovering Quality of Life and Clinical Global Impression scale. Selection of specific instruments was also guided by their ease of use and attempts to ensure the time burden on clinicians was minimal.

The St Andrew's outcomes development phase involved extensive liaison and consultation with other organizations both within the UK and internationally, including the International Consortium for Healthcare Outcomes and Measurement, Te Pou (New Zealand), Vanguard Consulting, South London and Maudsley NHS Foundation Trust, Berkshire NHS Foundation Trust and University of Oxford. As part of ongoing efforts to build organizational expertise and skill, three clinicians from St Andrew's attended, following a competitive selection process, the annual 'value-based healthcare intensive seminar' at Harvard University with Professor Michael Porter and colleagues. This proved to be an exceptional opportunity to learn of the latest global developments in value-based health care and to establish ongoing connections with other pioneering organizations. More recently, the team was also influenced by the work of Professors Elizabeth Teisberg and Scott Wallace at Dell Medical School's Value Institute for Health and Care, with their evolving conceptualization of outcomes into the broad areas of 'capability, comfort and calm' (Wallace and Teisberg, 2015; Liu et al, 2017).

Integrated practice units

These engagements highlighted a natural progression in the delivery of outcomes-driven, value-based patient care. After much deliberation and consultation, integrated practice units were chosen as the vehicles through which these outcomes were to be delivered. *Table 2* describes the principles and characteristics of an integrated practice unit.

For St Andrew's, it was crucial that although the move to integrated practice units required organizational restructure of care delivery units, the focus remained on defining, measuring and improving outcomes. To that end, the project was broken into phases. The considerable scale of moving the existing service structure into several integrated practice units was addressed through a transformation programme divided into overlapping stages, including a design phase and an implementation phase.

An integrated practice unit project group was established, tasked with the setting up of 'early implementer' integrated practice units and to develop a design guide, which would be used to support the transformation of the existing pathway structure into 15 integrated practice units.

The design phase involved the setting up of a design authority consisting of senior multidisciplinary and multi-professional clinicians from across the charity. The design authority was tasked with ensuring that evolution of the integrated practice unit held true to the principles underpinning value-based health care, while not impairing the effective delivery of 'business as usual' services.

Three early implementer integrated practice units were identified:

1. A psychiatric intensive care unit integrated practice unit
2. A dialectical behaviour therapy integrated practice unit for the treatment of emotionally unstable personality disorder
3. A dementia integrated practice unit.

Each of these was chosen to test out the viability of the integrated practice unit hypothesis in a different set of conditions. For example, the psychiatric intensive care unit aimed to manage patients requiring acute stabilization and rapid treatment and discharge cycles averaging 28 days or less, the dialectical behaviour therapy integrated practice unit aimed at a treatment programme lasting from 12–18 months on average and the dementia integrated practice unit aimed to care for patients with a significant physical health requirement.

Each integrated practice unit was mapped onto a maturity model of several months' duration. Over this time, the integrated practice unit would move sequentially through a series of stages that progressed different domains, including structure, integrating outcomes, refining treatment protocols, eliminating inefficiencies and refocusing care. Progress from one stage to the next

was ratified by the design authority's satisfaction in robust implementation. The responsibility and accountability for the overall delivery of each integrated practice unit's clinical outcomes would be held by a clinical lead and an operational lead, with each integrated practice unit gradually becoming more autonomous as it demonstrated greater independence and self-reliance in delivering the operational and clinical aspects of care.

Change coordinators were appointed to each integrated practice unit to drive forward the transformation, using the principles of value-based health care to question every process and eliminate inefficiencies. Numerous workshops were conducted within each integrated practice unit to look at processes and to harness ideas. An improvement log was created and shared within and across integrated practice units to allow areas of success to be quickly replicated in other areas. The design authority ensured that major design decisions were scrutinized, discussed and tested from clinical and operational coherence and practicality. The final fifteen integrated practice units are outlined in *Table 3*.

Table 3. Integrated practice units in St Andrew's

Psychiatric intensive care unit (Northampton)
Women's dialectical behavioural therapy
Dementia and Huntington's disease care
Mental health and autistic spectrum disorder: secure care (Birmingham)
Women's mental health: medium secure
Mental illness and personality disorder (Essex)
Learning disabilities and autistic spectrum disorder: secure care (Nottingham)
Men's mental health: low secure and locked (Northampton)
Men's mental health: medium secure (Northampton)
Women's mental health: low secure and locked
Brain injury: rehabilitation and care
Learning disabilities: secure care (Northampton)
Autistic spectrum disorder: secure care (Northampton)
Child and adolescent mental health
Child and adolescent mental health – developmental disorders

Challenges

A transformation of this scale has not been without its challenges. Some of these are discussed below as well as some of the actions undertaken to mitigate against them.

Culture change

This was, and is, perhaps the most significant challenge for any organization and this was no different. Convincing individuals to embark on a new model of care has required all clinicians to look at their own practice, as well as ways to improve care delivery in order to focus more on what patients need and want. A detailed communication plan was necessary to support all staff and ensure they were aware of the changes that were going to be implemented and the reasons for the changes. Workshops were undertaken at all levels from the board of directors through to all clinical staff to ensure that as many people as possible understood the purpose of the transformation programme and the importance of outcomes and value-based care. A series of events, 'town hall meetings', continuing professional development programmes, group discussions and individual discussions were held over a period of months before any actual change was effected. The medium to long-term plan is to create an organization that combines strong autonomy and cooperation between staff (Larsson and Tollman, 2017).

Developing integrated practice units in a heterogeneous population

Another significant challenge was developing a set of integrated practice units in the existing configuration of wards and services given the wide variety of patients who were being managed and, in particular, levels of comorbidity. In broad terms, there were overlaps between the clusters of mental illness, personality disorder, patients with forensic and criminogenic needs, patients with physical health needs, patients with progressive neuropsychiatric conditions and static neurocognitive impairment, patients with neurodevelopmental disorders, older adults, and adolescents with mental health difficulties.

Dividing the population into logically treatable integrated practice unit segments was a logistical challenge which was resolved by grouping patients; first by gender, then by similar needs and primary diagnosis, and finally by other needs (for example forensic needs) until this produced a set of integrated practice units upon which there was general agreement. The integrated practice units varied in size but achieved the aim of co-location. Again this process involved a huge amount of consultation and discussion with configuration of integrated practice units changing several times before being finalized. This approach, and the involvement of many individuals at all levels of the charity, resulted in a transparency of process and honest feedback which helped decision making and avoided group think.

Operational coherence *vs* clinical coherence

There was a healthy tension between clinicians and operational managers during the design process. This allowed decisions to be made on the basis of clinical need and best practice, as well as within the bounds of operational feasibility given the resources available and how they could realistically be allocated. At each stage of design, the design authority helped to resolve areas of particular complexity, and ensured that the work stayed close to the core principles of value-based care and gave full consideration to how outcomes would be affected by the decisions made.

> The outcomes framework defined at St Andrew's will be refined over time, allowing new metrics with greater validity and sensitivity to replace older, less useful ones.

Data analysis

Of central importance in any value-based health care system is the timely feedback of data (analysed outcomes) to clinical teams to allow them to reflect on this information and make changes to improve their care provision. This learning feedback loop is fundamental to the value-based agenda and to improving overall quality. The manner in which the analysed data are fed back to teams is critical.

Development of value-based health care depends heavily on a robust IT infrastructure within the charity and the ability to build in outcomes measurement instruments that allow required data to be collected, analysed and displayed. Significant IT input is required to enable this transformation, along with education of staff around the new system. Most providers using this system have adopted a 'clinical dashboard' to track various metrics (generally a mixture of clinical outcomes and process measures) to inform clinical and management team care decisions. Value is improved by increasing the numerator (outcomes) of the 'value equation'. At St Andrew's, these fundamentals have been drawn on to develop a clinical dashboard which will be used in each integrated practice unit.

Financial mapping

As mentioned at the start of this article, the provision of health care internationally is facing an unprecedented financial challenge which means that each unit of currency spent needs to provide the greatest possible value. Therefore, value-based health-care organizations need to engage clinicians in financial decisions and ensure managers fully understand the prioritisation of clinical outcomes.

The work of Professor Robert Kaplan at Harvard University has pioneered a detailed financial mapping of the whole 'care cycle' in order to clearly elucidate value, the numerator being clinical and patient-reported outcomes and the denominator being the cost of the whole care cycle to deliver those outcomes. Professor Kaplan has termed this method 'time-driven activity-based costing' (Kaplan and Porter, 2011; Kaplan et al, 2014). This method of activity-based costing will prove to be challenging (but not insurmountable) in mental health where most conditions are chronic and therapeutic input is often difficult to clearly demarcate, with multiple clinicians providing holistic care throughout the entire care cycle. However, chronic conditions can be quantified on an annual basis, for example, to understand what it costs to deliver a suite of mental health services on a per annum basis that lead to the best outcomes.

Becoming a learning organization

The outcomes framework defined at St Andrew's will be refined over time, allowing new metrics with greater validity and sensitivity to replace older, less useful ones. Although outcomes are fundamental, it is important to understand that they have a wider significance as drivers to allow health-care providers to catalyse a broader 'learning organization'. In a learning system, teams are encouraged to develop curiosity about quality improvement and to provide a well-embedded and continual focus on improving standards and results for patients.

Data for everyone

St Andrew's has a vision to share clinical outcomes transparently across the entire charity. Individual patient outcomes will be presented to patients in the form of a report, or they will gain easy access to their own individual outcomes through an IT link. It is also hoped that NHS commissioners can be provided with contemporaneous information about their patients, in order to support fully informed, proactive commissioning decisions around patient step down in services, discharge and eventually reimbursement. It is also planned that outcome metrics will be shared with prospective discharge teams and placements to aid transitions.

The ongoing routine collection of clinical outcomes, process measures, financial information and human resources information will also present the charity with an invaluable opportunity to develop a comprehensive data archive. The aim is to establish a clinical registry to structure and analyse the burgeoning data pool. This will lead to significant and novel opportunities to improve organizational quality. Providers and charitable health-care organizations who have harnessed large data registries, such as the Cystic Fibrosis Foundation in the USA, have already started to benefit from the enormous insights and quality improve opportunities this can deliver (Schechter et al, 2014). It is also envisioned that with the formation of a data warehouse and growing registry St Andrew's will eventually develop predictive analytic capabilities which will support clinicians in providing effective care and risk assessment (Raghupathi and Raghupathi, 2014). However, this will require substantial resource, and challenges such as the maintenance of data quality (data cleansing) and IT interoperability will need to be addressed, although evolving 'block chain' technology may surmount these problems (Deloitte, 2016).

Global clinical information networks

With the growing adoption of value-based health care and organizational networks (for example International Consortium for Healthcare Outcomes and Measurement) around clinical outcomes, outcomes will themselves begin to form a global clinical information system. The enormous number of scientific articles published makes it almost impossible to realistically remain up to date with the global scientific literature; in 2016 approximately 900 000 articles

were indexed on Medline, which equates to about 2500 per day (Elliott, 2017). Outcomes, however, allow meaningful and actionable clinical information to be distributed quickly and widely. Improvements in quality indicated by improvements in outcomes (and therefore value) in one part of the world will quickly be recognized in other geographical areas and lead to rapid improvements. This outcomes system is akin to the 'pricing system' described by the economist Friedrich Hayek, whereby knowledge is decentralised and dispersed among many people. Using Hayek's model 'prices', or in the case of value-based health care outcomes, can act to coordinate the separate actions of different people (Hayek, 1945). It remains to be seen how prolific and comprehensive the system will become, but such a system has immense disruptive potential to the prevailing hegemony. To ensure the system works well in mental health there will have to be some agreement on what measures are to be used and an ability to compare outcomes.

Comparison with other early implementers

A small number of mental health providers have started the journey towards value-based health care. Notable examples are the Schön Clinic in Germany (eating disorders), Sahlgrenska University Hospital based in Gothenburg, Sweden (bipolar disorder), and Oxford NHS Foundation Trust (outcomes framework with linked reimbursement). However, no mental health provider has to date transformed its entire organization around value-based health care. St Andrew's is, therefore, in the unique position of being the first mental health provider in the world to fully transform its entire organizational system to comply with value-based health care as defined by the methodology of Porter and Teisberg. The team look forward to the multiple benefits the value-based approach will provide patients and developing international thought leadership in this exciting area. **BJHM**

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KEY POINTS

- Value-based health care has the potential to drastically improve mental health care and patient outcomes.
- Any outcomes 'framework' should clearly define the most meaningful outcomes for patients.
- 'Co-production' should be the cornerstone of building a truly patient-centred organization.
- Any transformation to a value-based organization is fundamentally a transformation of the culture.
- The combination of patient-centred approaches and the systematic use of data for care improvements is the future of mental health care.

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