ORIGINAL RESEARCH

A quality framework for health services developed through an inclusive approach

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ABSTRACT

Objective: This study set out to explore and define the concept of "quality" from the perspective of health service managers and health professionals in Ireland, and to develop a theory to inform the development of a quality framework for the Irish health system.

Methods: Design: The study design was based on Strauss and Corbin's (1990) grounded theory approach. This provided a method of social inquiry with the purpose of developing a theory through a systematic and rigorous approach to examine and advance emerging concepts. Setting and participants: Fifty health service managers and professionals employed by the Health Service Executive (HSE) in Ireland participated in this study. Interventions: In-depth interviews were used to explore with participants their experiences of quality in Irish health services, definitions of quality and the elements necessary for a quality framework. Main outcomes: This study produced a substantive theory that identified the need for a holistic approach to quality across three domains (the patient, workforce and organisation).

Results: The quality framework comprises an integrated set of domains, values, approaches, processes and enablers. Across the domains, the approaches and processes provide the mechanisms to achieve quality. These are supported by values (that promote quality) and a set of enablers (which underpin the elements, providing the platform for change).

Conclusions: The emergent theory provides the basis for a quality framework for health services for Ireland in the 21st Century. Unlike most extant quality frameworks, the framework was derived empirically through an inclusive approach with key care providers, supporting the relevance and potential utility of the framework.

Key Words: Quality, Framework, Total quality improvement, Health services, Ireland

1. INTRODUCTION

Environments in which health systems operate have changed rapidly, exerting many pressures on systems worldwide.[1] The issue of defining quality in the provision of health services is central to improving overall organisational effectiveness[2] given the complex, multi-dimensional nature of the system, which incorporates different activities, views and stakeholders. Differing conceptualisations of quality can result in some elements of a system being prioritised over others, which in turn have implications for organisations overall. Total quality improvement means optimising the whole system, so that all areas operate to their potential.[3] This requires promoting and embedding within the organisation a shared understanding of what quality means

and a vision of how it can be achieved and supported by appropriate structures within the organisation.[4]

Different perspectives on health service quality exist in the literature, along with numerous definitions and descriptions of the concept. Some authors suggest quality ought to adopt a scientific dimension, specifically measurement, standard setting and improvement.[5] Others consider quality to be the degree of excellence intended and the control of variables in achieving that excellence to meet customer need.[6] The World Health Organisation (WHO) defines a quality health system as one that organises resources in the most effective way to meet the health needs of those most in need of care, safely and without waste.[7] Once quality is defined, it is important to rationalise and operationalise the concept.[8] Table 1 outlines a summary of the quality theories identified in the literature.

Table 1. Summary of theories about quality

Author	Concept	Focus	Factors
Shewhart (1939)	Adapting processes to create profitable situations	The Shewhart Cycle Plan, Do, Study and Act	Constant evaluation Enhance learning Quality improvement
Crosby (1979)	Conformance to requirements	Consistently reproduce 14 steps to improvement	Quality is free Zero defects Quality is a continuous process
Donadedian (1988)	Structure, process, outcome	Focuses on the systemisation of knowledge in an organisation	Variables such as facilities, equipment, human resources and leadership are components in achieving quality
Deming (1982)	Introduced Statistical Process	Systems improvement	Management has responsibility
Iskikawa (1985)	Development of Fishbone Cause and Effect Developed seven basics tools for quality	Involvement of top management involvement People to be happy Organisational wide quality control	Search for causal factors systematically - represents analysis of the real cause behind problem Planning cycle for process improvement
Juran (1951)	Fitness for use Output / Product	Able to count on service or product	Managerial breakthrough sequence List of steps to produce quality
Taguchi (1993) (1999)	Robust design in the manufacturing process, rather than attempt to control the variances	Three stages: System design Parameter design Tolerance design	Robust design, resistant to variation, not quality through inspection
Berwick (1989)	Access, knowledge and the interaction between these two	Patient centeredness	Transparency and accountability
Shortell (1973)	Managers play a role. Identify high level priorities	Integrated health system that minimises fragmentation	Accountability Alignment of systems, teams and structures

Similar to many health systems, the Irish health system faces a number of challenges such as the complexity of organisational structures, dealing with new and emerging strategic and operational issues, rapid change, and limited financial resources.[9] It has been subject to a number of reforms in recent decades, many emanating from a national health strategy published in 1994.[10] Amidst the waves of radical reform is the explicit commitment to deliver quality health services,[5, 8, 10] including the establishment of the Health Information and Quality Authority (HIQA) in 2007, which aimed to strengthen governance and accountability across the health system by setting and monitoring standards.[11] There is scope for improvement in every organisation.[12] To achieve this, systematic and self-conscious management is needed for improvements to occur in the quality of health services.[13] The responsibility for developing a working environment capable of supporting quality lies with the organisation itself and in turn with the personnel within it.[14] It is important to address the factors that impact on an organisation's ability to deliver quality services.[15] Where clear strategic direction exists, employees are motivated to perform at higher levels, enhancing the performance of the organisa-

tion overall.[16, 17] Such strategic direction can be provided through the development of an explicit framework for quality, that promotes the vertical and horizontal alignment required for policy development and system changes.[18] A structure has been called for to provide a strategic, unified approach to support quality in the Irish health system.[19] This study set out to address this deficit by developing a theory about quality that could inform the development of a quality framework. The research approach was deliberately inclusive, to ensure the relevance and fit of the emerging framework to the requirements of the Irish health system.

2. METHOD

A grounded theory design, based on Strauss and Corbin's approach[20] was used to construct a theory to inform the development of a quality framework. The approach aimed to examine the concept of quality from the perspective of those involved in health service delivery and management and to use this data to construct a theory that represents participants' views and experiences. Ethical approval for the study was obtained from the University College Dublin Ethics Committee, Dublin, Ireland (Ref No: LS–09–42).

2.1 Sample

Purposive sampling was initially used to select participants who could contribute to the topic under exploration on the basis of their role within the Irish health system, and their knowledge, experience, or particular perspectives on quality. Professionals and managers were sought from a range of disciplines at a variety of levels of seniority. As the theory began to develop, theoretical sampling occurred whereby informants were identified who could build on and add to the emerging theory.[21] Sampling continued until a broad range of perspectives on quality was examined - maximising sample variation, and no new data were identified - indicating that data saturation was achieved. This resulted in a sample of 50 participants. Participants were provided with detailed written information and were asked to provide written consent before being interviewed.

2.2 Data collection

Data were collected through in-depth semi-structured interviews, providing the flexibility to follow up emerging ideas and to seek further clarification around understandings and experiences of quality.[22] A topic guide was constructed to assist in prompting and probing for information. Some questions initially explored included:

- What do you consider constitutes quality healthcare?
- How would you define quality?
- Can you recall an incident in which you feel a quality service was provided?

- Can you recall an incident where you could not provide a quality service?
- What would assist in the delivery of a quality healthcare service?
- What processes could be developed to support quality?
- If you could change any aspect of your role in relation to delivering quality, what would it be?
- What are the essential elements required to develop a Quality framework?

The focus of questions evolved over the course of the study to incorporate new themes as they emerged from data analysis. Interviews were transcribed verbatim and coding commenced immediately afterwards.

2.3 Data analysis

An essential element of grounded theory is that data collection and data analysis occur simultaneously. The constant comparative method[20] involved constantly comparing each piece of data being collected with existing data to generate meaning. As the theory emerged, it informed subsequent data collection. The aim of data analysis was to discover core concepts to provide a foundation for theory generation. The process began with open coding of each transcript separately to identify themes contained within the data. Next, codes were compared and similar codes were clustered to begin to form a category (axial coding). By comparing similar and deviant incidents within categories, the basic properties and dimensions of the categories began to emerge. Further comparisons and analysis of categories and their interrelationships led to the emergence of theoretical constructs, while hypotheses that emerged were tested to verify various categories and constructs. Interrelated and multifaceted connections and relationships were identified and validated during analysis in terms of causal conditions, context, intervening conditions, actions, interactions, strategies and consequences (selective coding).

Field notes and memos were maintained throughout the analysis process. The software package Nvivo (V9)[23] was used to organise, sort, retrieve and compare data during open, axial and selective coding. A template was designed to summarise the key findings at different levels of coding in each category. Data collection continued until no new information/themes were identified, indicating that theoretical saturation had been achieved.[24]

3. RESULTS

Participants were from a range of backgrounds, work experiences and years of service (see Table 2).

3.1 Defining quality

Interviews began by exploring participants' understandings of quality. Several participants found it difficult to define quality as a concept and different ideas were identified in the data, suggesting the lack of a coherent vision for quality amongst participants.

> I'm not sure how I would define quality. (P47)

> Quality is an area that people don't understand in the health service. (P11)

Quality was depicted as a complex, multi-dimensional and relational concept, incorporating a number of essential components working together towards the achievement of the best possible outcomes.

> Quality within the health services has probably a couple of remits…the patient, the staff and the organisation. (P27)

> I think quality encapsulates a whole range of issues…in terms of the way we organise our services…co-ordinate efforts…rationalising approaches. (P15)

> A quality service is delivering competent, safe, efficient, cost-effective services that achieve its objectives. (P8)

> …the best possible result for each outcome…for every situation. (P44)

Common themes identified within the data were progressively distilled to produce an overarching definition of quality in the health service context: The pursuit of the best possible outcomes within available resources.

Participants supported the need for an overarching framework for the health system that would provide a clear vision and a unity of purpose for all involved in the pursuit and achievement of quality.

> An actual framework, you have to have your vision and what you want to achieve and it has to be deliverable. It would focus objectives for people, so they have some thing to work towards. (P3)
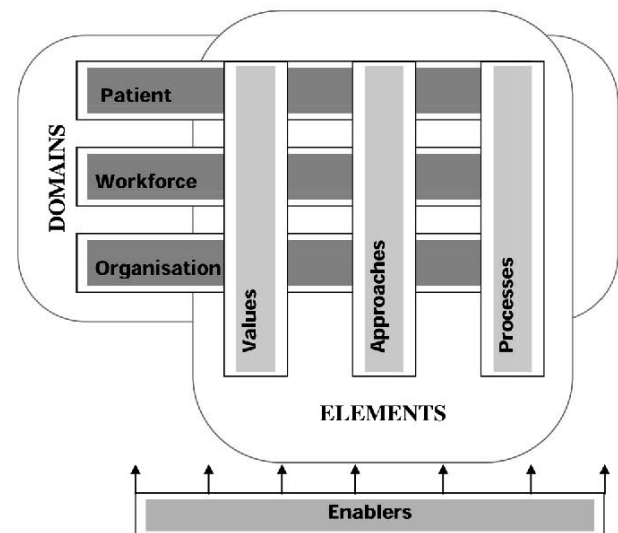
3.2 The substantive theory of quality for Irish health services

The substantive theory that emerged in this study identifies three key components for a quality framework: domains, elements and enablers (see Figure 1). The domains represent three separate but linked dimensions of quality: the patient,

the workforce and the organisation. These domains are supported by elements: approaches and processes, supported by values. These elements are the mechanisms to achieve quality. A set of enablers underpins these integrated elements, providing the platform for change and system improvements.

Table 2. Characteristics of participants

Characteristic	n	%
Pillar		
Management	33	(67)
Medical	12	(25)
Nursing	5	(8)
Gender		
Male	13	(27)
Female	37	(73)
Area of work within the health service		
Primary Community Continuous Care	10	(20)
Corporate	11	(22)
Population Health	15	(30)
Human Resources	3	(6)
Communications	2	(4)
Finance	4	(8)
National Hospitals Office	5	(10)
Years experience in the health service		
0-5 Years	3	(6)
5-10 Years	14	(28)
10-20 Years	16	(32)
20-30 Years	8	(16)
30-40 Years	9	(18)

Figure 1. The substantive theory of quality

3.3 Values

Five values support the organisation in delivering quality healthcare. In defining quality, participants referred to the need for health services that are focused on the patients'

needs.

> Quality health services...have to be patient-focused so that service delivered focuses on improving services. (P29)

Emphasis was placed on the importance of services being accessible and equitable for the patient.

> It is about the users and easy access, so that services are clearly understood by the users. (P23)

The importance of decisions being evidence-based emerged as essential to quality in the health service.

> I would define quality as a service that is evidence-based. (P30)

Participants also highlighted the importance of having a skilled and capable workforce and the continuous development of people capacity.

> You need people on the ground who know how to manage, who know how to be clinicians and to get that balance. (P16)

Lastly, effective resource management was identified as a key component to the delivery of effective and efficient services.

> A quality health service is one that is efficient and by that I mean that money and peoples time are used properly to get the best outcomes for patients and the health service. (P49)

These values were considered the basis for continuous quality improvement and change within the health system.

3.4 Approaches
Three approaches were identified to support the achievement of quality: risk management, planning and corporate governance. These reflect activities that were considered necessary to support quality outcomes.

> The quality of care provided in hospitals and communities evolves around and is based on patient safety. (P3)

The approaches were envisioned as planned, systematic mechanisms to guide system choices and support organisational change.

> Good planning is very important. There is a lot more awareness in relation to quality, value for money and better outputs. (P5)

The health service needs a governance structure so that there is a clear set of rules which have to be abided by. I think that it supports professionalism and lets people know what is expected from them. (P50)

Emphasis was placed on approaches being an integral part of everyday health service business.

3.5 Processes
Four processes were identified: consultation, education and training, standard setting and audit. These were reflected in a systematic series of actions and steps that lead to achieving quality outputs.

> Quality...can be achieved by having proper processes in place on where we want to get to and how we propose to get there. (P42)

Processes were considered to be supportive of quality improvements and necessary to achieve organisational reform. It was suggested that processes are reliant on organisational ability.

> It is important to look at and audit the quality improvements that we put in place, to see if we were reaching the targets or not. (P28)

Processes were described as assisting and co-ordinating the redesign of organisational workflows to achieve set standards and quality outputs.

> The interaction between clients and the health care providers at every level is hugely enhanced if there is an exchange of information. (P23)

3.6 Enablers
Four enablers were identified to support the different components of the framework. These included: clear structures, information management, communication and change management.

> A good quality health service includes a good clear vision and mission...good clear work practices...If there is clear structures, everyone is clear, good communications exists...things would be unified and more effective...this would be very beneficial. (P4)

The enablers were considered to reflect the means and mechanisms to support the achievement of quality. Information management was considered vital to the development of health services in achieving quality.

Quality systems, access to information systems to support knowledge management and communication. . . supports sharing information. (P27)

Communication was described as necessary to promote knowledge and information sharing whilst supporting effective change management.

You can have quality around integration, quality issues around the treatment provided and what the outcomes are. . . Ultimately, you need the ability to change to achieve pre-determine targets. (P18)

3.7 The quality framework

The detail in the substantive theory was used to inform and create a visual diagram to conceptualise a quality framework for the Irish health system. The construct attempted to depict the inter-connections and overlap required to support quality. The framework was further developed by deconstructing the components (categories) into clear, manageable parts (dimensions and properties). This aimed to support understanding of the framework and adds an aspect not documented in the literature previously. It has the ability to act as a guide in operationalising the framework. Figure 2 outlines the composition of the quality framework developed in this research.
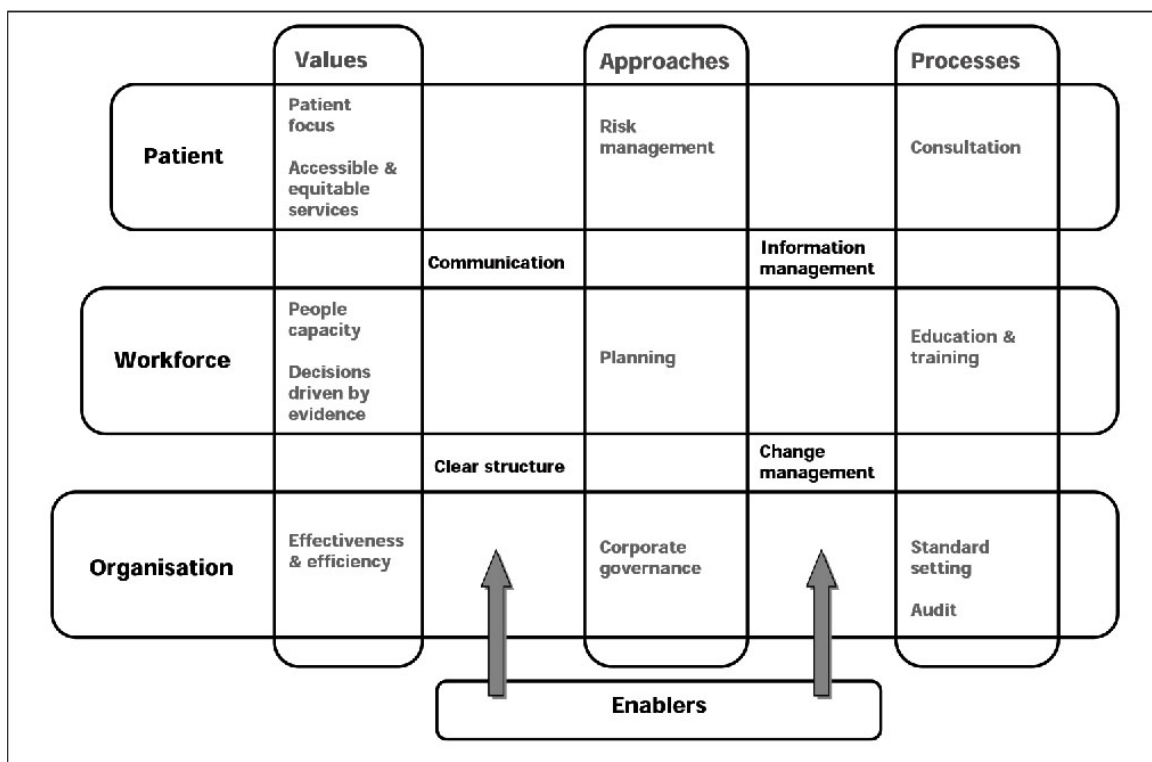
Figure 2. A quality framework for the Irish health service

4. DISCUSSION

Unlike most extant quality frameworks, the theory in this research was derived through an inclusive approach with key care providers. As such the theory is likely to be relevant to those involved in planning and delivering health care in Ireland and those initiating and managing change in the Irish health system.

Organisations are described as social systems comprising a set of components,[25] that involve a series of connected functions and activities to achieve outcomes[26] that work together[27] and influence each other.[28] A system's perfor-

mance depends on how well the parts fit together, not how well they perform individually.[29, 30] The emergent theory in this study supports this finding, as the theory implies that the collaborative integration of the components and the interaction between them is the best means to achieve the best outcome in terms of quality. It also provides a basis for change when we consider healthcare organisations to be complex adaptive systems[31, 32] where rather than imposing prescriptive rules, change is best achieved by identifying and working with the values and behaviours that people are drawn towards and the use of minimum specifications or principles for action through which change in a specified

direction is encouraged.

The framework, as a single blueprint for change promotes a shared understanding of quality and how it can be achieved, for the entire organisation.[33, 34] Understanding quality in health services is difficult, which impinges on the ability to support it.[35] The framework in this study provides a holistic approach and includes a range of multi-dimensional, interrelated components, whereas a framework that is unduly narrow and clinically focused may overlook other key organisational areas. The increasing recognition of using a broader framework is noted in the literature.[36, 37]

A framework enables the breakdown and integration of multiple facets with each corresponding to a health system function[38] *e.g.*, planning activities in a health service. These facets become the structures on which progresses are built.[39] When developing a quality framework, it is important to build on the knowledge and systems already in place.[40] The function of the framework in this study is to promote the achievement of the highest standards, delivering evidence-based services, setting clear targets, monitoring, measuring against performance, undertaking audits and encouraging engagement in governance activities to achieve accountability in the organisation. Policy makers and managers need to work through decision-making processes and consciously determine areas for reform and improvement that are evidence-based. Issues such as accessibility and equity are dimensions that are system-dependent and cannot be improved without reforming the broader health service system.[41] This study captured the intrinsically linked, interdependent components that collectively and systematically support the achievement of organisational improvements. The framework in this study is a holistic, integrated illustration of what quality means and how it can be represented in a health service.

5. CONCLUSION

The theory of quality in this study builds on what is already known and provides new insights to the understandings of quality across the heath system. The theory represents a comprehensive and holistic view of quality, identifying key components and dimensions of quality and the linkages between them. Together they provide the basis for a quality framework that can be used to guide and support change across the Irish health system towards the achievement of the best outcomes within available resources.

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CONFLICTS OF INTEREST DISCLOSURE

The authors declare that there is no conflict of interest statement.

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