QUEST

Quality Evaluation Strategy Tool:

An essential guide for using quality indicators in occupational therapy

WFOT
World Federation of Occupational Therapists

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EXECUTIVE SUMMARY

The Quality Evaluation Strategy Tool was developed by the World Federation of Occupational Therapists to provide a systematic approach to using data to demonstrate the value of occupational therapy. The evaluation strategy tool describes:

- the Quality Indicators (QI) Framework as a conceptual model for development of a core set of quality indicators for occupational therapy; and
- the Quality Evaluation Process for defining specific, measurable, agreed upon, relevant and timely (SMART) quality indicators for a specific occupational therapy practice or service.

QI Framework

The QI Framework describes core indicators for measuring quality in services provided by all occupational therapists, regardless of geographic location, practice settings and populations served. The indicators are relevant from a population, organisation, team and/or individual perspective regarding the quality or type of services provided.

The QI Framework (Table One) is outlined using a matrix model design, with quality dimensions described along the vertical axis and quality perspectives defined on the horizontal plane. Using this model, the QI Framework identifies what general dimensions of quality of occupational therapy service require measurement, as well defines different perspectives for how quality is measured (Arah, Klazinga, Delnoij, Ten Asbroek & Custers, 2003; Arah, Westert, Hurst & Klazinga, 2006).

Seven quality dimensions identified in the research literature most relevant to occupational therapy services are included in the QI Framework. The dimensions include accessibility, appropriateness, effectiveness, efficiency, person-centredness, safety and sustainability. Consistent with the Donabedian model of health quality (1966), the QI Framework measures quality from the perspective of structure, process or outcome.

- Structure indicators assess environmental factors and resources required to deliver quality occupational therapy services.
- Process indicators evaluate how occupational therapy is delivered to ensure quality service.
- Outcome indicators measure changes occurring as result of occupational therapy intervention.

Table One: **The WFOT QI Framework**

		CORE INDICATORS		
		Quality Perspectives		
		STRUCTURE	PROCESS	OUTCOME
Quality Dimensions	**APPROPRIATENESS:** Right service, person, place, time	Availability of competent occupational therapists.		
	SUSTAINABILITY: Access to resources without compromising future availability	Long term supply of resources.		
	ACCESSIBILITY: Ease in obtaining services		Ability to access service.	
	EFFICIENCY: Use of resources for maximum results		Optimal use of resources.	
	EFFECTIVENESS: Evidence-informed services for those who benefit			Success in attaining occupational therapy goals.
	PERSON-CENTREDNESS: Experiences of receiving service			Satisfaction throughout service delivery.
	SAFETY: Reduction of risk and avoidance of harm			Incidents resulting in harm.

Core indicators outlined in the QI Framework for measuring structural perspectives of quality relate to the dimensions of appropriateness and sustainability. The indicators measure whether required inputs such as competent occupational therapy practitioners are available to provide the right service to the right people, at the right place and the right time. Structural indicators also evaluate whether other types of physical, financial, technical and social resources necessary to provide quality occupational therapy services are continuously available in an economic, socially and environmentally sustainable manner.

Process indicators included in the QI Framework relate to the dimensions of accessibility and efficiency. The indicators assess the ability of intended users to access occupational therapy, as well as whether the services are delivered in a way that meets productivity expectations of stakeholders such as funders and policy-makers for the use of occupational therapy resources.

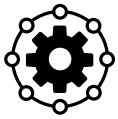
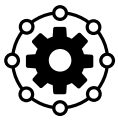
The QI Framework measures outcomes of occupational therapy intervention in respect to the quality dimensions of effectiveness, person-centredness and safety. Indicators evaluate the degree to which goals of service provision are met, as well as whether services are satisfactory to users and conform to safety expectations.

Quality Evaluation Process

A two step Quality Evaluation Process uses the core indicators of the QI Framework to define SMART quality indicators for a specific occupational therapy service. Each of the dimensions described in the QI Framework is examined in the first step of the Quality Evaluation Process to define expectations relating to the services provided by the occupational therapy practice. In the second step of the Quality Evaluation Process, core quality indicators are explicitly defined to measure performance in relation to the identified quality expectations. Data collection and reporting specifications are outlined to ensure the indicators are specific, measurable, agreed upon, relevant and timely (SMART). This systematic process ensures consideration of elements of quality most relevant to an occupational therapy service for defining and monitoring SMART quality indicators.

By following this process, QUEST provides a comprehensive evaluation that considers different perspectives and dimensions of quality, as illustrated by SMART indicators developed to measure the impact of introducing a new occupational therapy intervention (Table Two). The structure indicators measure the availability of staff trained to use the protocol, as well availability of local suppliers to provide equipment required for the occupational therapy intervention. SMART process indicators evaluate the number of clients each month meeting eligibility criteria that receive the occupational therapy intervention, as well as the average number of sessions required per client to deliver the intervention according to the treatment protocol. SMART outcome indicators evaluate the average functional gains made by clients, the number of clients that are satisfied to follow the protocol and the incidence of harm to clients or staff associated with use of the intervention.

Table Two: SMART indicators to evaluate the impact of introducing a new occupational therapy intervention

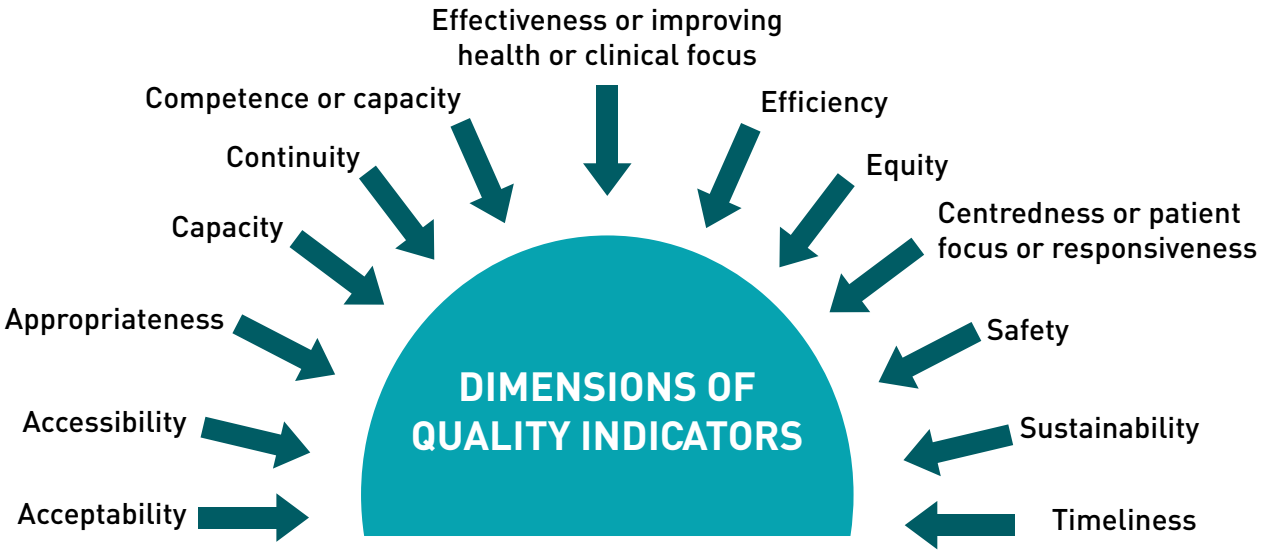
QUALITY DIMENSION	CORE QUALITY INDICATORS	SMART QUALITY INDICATORS	QUALITY PERSPECTIVE
APPROPRIATENESS	Availability of competent occupational therapists.	Percentage of occupational therapists trained in the protocol for the new intervention	 Structure
SUSTAINABILITY	Long term supply of resources.	Number of local dealers that provide equipment and supplies needed for the new intervention	 Structure
ACCESSIBILITY	Ability to access service.	Number of clients each month meeting eligibility criteria for the protocol that receive the new intervention	 Process
EFFICIENCY	Optimal use of resources.	Average number of occupational therapy sessions for each client receiving the new intervention according to protocol	 Process
EFFECTIVENESS	Success in attaining occupational therapy goals.	Average functional gains made by clients using the new intervention protocol as measured through standardised testing	 Outcome
PERSON-CENTREDNESS	Satisfaction throughout service delivery.	Percentage of clients that follow the intervention protocol	 Outcome
SAFETY	Incidents resulting in harm.	Incidence of client or staff harm associated with use of the new intervention protocol	 Outcome

CHAPTER ONE:
QUALITY INDICATORS AND OCCUPATIONAL THERAPY

Quality indicators are measurement tools, screens or flags that are used as guides to document, monitor, evaluate and improve the quality of occupational therapy service (Mainz, 2003). Occupational therapists are increasingly expected, as part of their professional obligations, to implement and monitor indicators of occupational therapy service to improve quality performance (Leland, Crum, Phipps, Roberts, & Gage, 2015; Roberts & Robinson, 2014; Sandhu, Furniss, & Metzler, 2018; Swedish Association of Occupational Therapists, 2011). Goals of using indicators to increase the quality of occupational therapy service include improving population health outcomes, enhancing satisfaction with service and optimising the efficient use of resources (Berwick, Nolan & Whittington, 2008).

Implementation and monitoring of quality indicators provides evidence and accountability of how occupational therapy services contribute to population health and advance the priorities of the health systems in which the profession operates (Leland et al., 2015). Effective evidence-informed decision-making in occupational therapy is dependent upon critical thinking and problem solving, awareness of end-user needs and priorities, as well as consideration of data gathered through objective measurement (Kröger, Tourigny, Morin, Côté, Kergoat, Lebel, Robichaud, Imbeault, Proulx, & Benounissa, 2007). Opportunity exists for advancing the profession by using quality measurement to demonstrate how occupational therapy contributes to desired population outcomes within our changing environment. Conversely, if efforts are not taken to demonstrate value, occupational therapy is at risk of becoming marginalized (Leland et al., 2015; Olin, Kutash, Pollock, Burns, Kuppinger, Craig, Purdy, Armusewicz, Wisdom, & Hoagwood, 2014; Sandhu, Furniss, & Metzler, 2018).

Figure One: Dimensions of health quality indicators

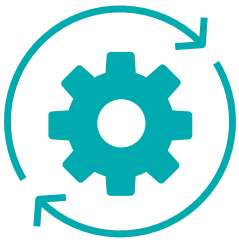


Historical use of health indicators

The research literature has discussed use of quality indicators for over 50 years to evaluate many elements of health and health systems, including health status, determinants of health, health system performance and health system design (Arah et al., 2006). The most commonly used indicators are measures of performance, with indicators of quality considered to be the most vital (Arah et al., 2006). Evaluation of quality as part of health system performance involves a move from solely measuring volume-based, financial outcomes to an examination of value that is characterized by evidence-informed interventions and client-centered outcomes and satisfaction (Leland et al., 2015). A range of definable and measurable aspects of health services (Figure One) have been identified in the literature that may be measured by quality indicators (Kelley and Hurst, 2006; Donabedian, 2003). Donabedian's (2003) model of quality in health care (Figure Two) is commonly used as a means of broadly categorising how such indicators measure quality in terms of structure, process and outcome (Campbell, Braspenning, Hutchinson, Marshall, 2003; Kelley and Hurst, 2006; Moore et al., 2015).

The broad range of practice areas and contexts of occupational therapists and the complexities of research to effectively demonstrate quality have served as challenges to the use of indicators in occupational therapy. The body of knowledge reported in this area remains limited, despite the growing importance of measuring quality for demonstrating value and accountability.

Figure Two: Model of Quality in Health Care (Donabedian, 2003)

ASSESSMENT OF QUALITY IN HEALTH CARE		
STRUCTURE	**PROCESS**	**OUTCOME**
		
Staff Equipment Supplies	Evaluation Treatment Consultation	Morbidity Mortality Satisfaction

Development of QUEST

QUEST was developed by the World Federation of Occupational Therapists (WFOT) to advance quality and accountability in occupational therapy by providing an evaluation strategy for measuring quality in an interdisciplinary practice context. QUEST uses a structured approach to define useful and relevant measures of quality to promote continuous improvement.

QUEST was developed by an international working group of occupational therapists over a four year period. QUEST was pilot tested in face-to-face workshops held in countries around the world. QUEST was also reviewed through an online process whereby participants accessed and tested the framework through an online portal. Feedback received from the pilot testing was used to refine the QI Framework and Quality Evaluation Process.

The QI Framework

The Framework outlines seven core indicators for measuring quality in services provided by all occupational therapists, regardless of location, settings and populations served (Table Three). The core indicators are applicable to practice in areas of differing levels of economic development; from low income countries to highly resourced nations. The indicators are consistent with basic tenets of occupational therapy, such as the belief in the value of occupation and the importance of occupational performance and engagement that serve as the foundation for the provision of all occupational therapy services around the world (WFOT 2010a). The indicators are also relevant from a population, organisation, team and/or individual perspective regarding the quality of services provided.

Table Three: WFOT QI Framework core quality indicators

CORE QUALITY INDICATORS
Availability of competent occupational therapists.
Long term supply of resources.
Ability to access service.
Optimal use of resources.
Success in attaining occupational therapy goals.
Satisfaction throughout service delivery.
Incidents resulting in harm.

WFOT guiding principles

To ensure that the core quality indicators are consistent with the basic tenets of occupational therapy, it is assumed that the QI Framework operates within the following WFOT guiding principles:

- Occupational therapy promotes health and well-being through occupation (WFOT, 2010a);
- Occupational therapists are person-centred in their relationships with the people to whom they provide services, including individuals, families, groups, communities, organisations and populations (WFOT, 2010a);
- Occupational therapy promotes an inclusive society in which all people benefit from equitable opportunities for participation (WFOT, 2010b); and
- Occupational therapy operates within a systems approach to influence the interaction of person, environment and occupation for the enhancement of occupational participation (WFOT, 2010a).

Continuous quality improvement

Use of the QUEST evaluation strategy is expected to occur within a continuous quality context, where the ongoing improvement of the quality of occupational therapy services is considered a professional responsibility. Figure Three summarizes key philosophical elements of a continuous quality improvement culture (Johnson & Sollecito, 2018).

It is assumed in a continuous quality improvement environment that opportunities for quality improvement always exist, driving innovation to better address the needs of people using occupational therapy services. A systems approach is taken to evaluate processes and determine improvement opportunities. Objective data is used to identify and monitor quality issues to ensure appropriate actions are taken to attain desired outcomes.

Figure Three: Philosophical elements of a continuous quality improvement culture

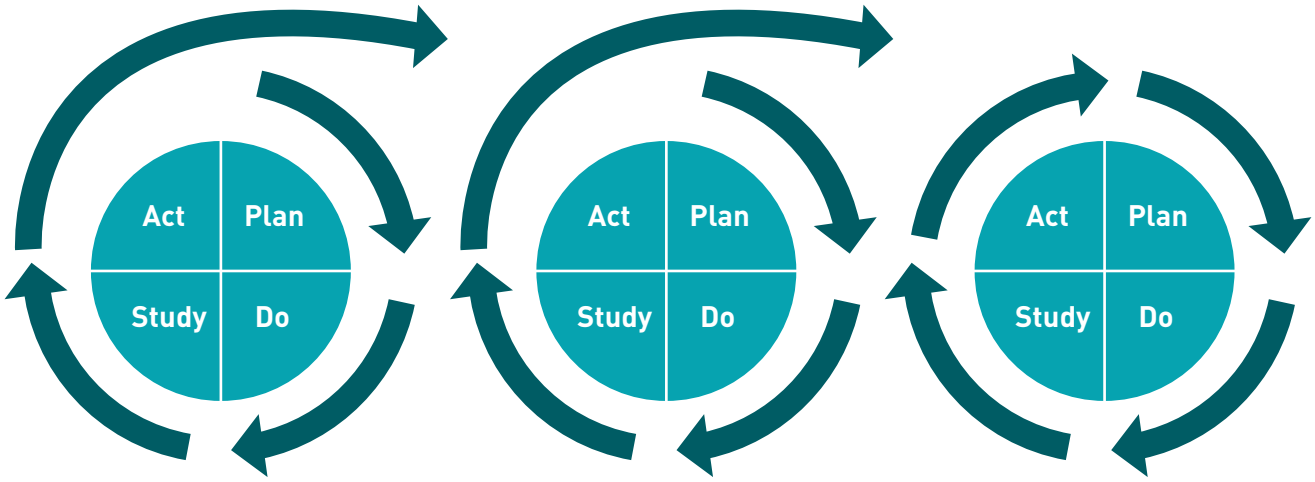
	Uses a strategic approach for designing and prioritising processes
	Identifies user satisfaction as the ultimate test of quality
	Adopts "systems" thinking that avoids individual blame
	Requires data-driven analysis
	Recognises multiple root causes may exist for quality issues
	Seeks solutions to enhance the overall system
	Optimises processes for continuous improvement
	Prioritises organiational learning to attain process improvement

Deming (1993) described continuous quality improvement as a Plan-Do-Study-Act process. The four step cyclical process is directed toward answering the following questions:

- What are we trying to accomplish?
- How can we change to accomplish the outcomes we want?
- How will we know if our changes have the desired result?
- Should we adopt our changes or make further enhancements?

Continuous cycling through the stages of Plan-Do-Study-Act to address these questions ensures desired results are achieved and maintained (Figure Four). Quality indicators play an integral role in the Plan-Do-Study-Act cycle by collecting objective data that is used to identify improvement opportunities. Indicator data is also needed to measure the success of improvement initiatives, determine whether additional efforts are necessary to address quality issues and monitor whether quality improvements are maintained over time.

Figure Four: Continuous cycling of the Plan-Do-Study-Act process (Deming, 1993)



Measuring quality in occupational therapy

Quality performance in occupational therapy relates to the degree to which services increase the likelihood of desired outcomes and are consistent with professional knowledge and evidence-informed practice (Hanefeld, Powell-Jackson & Balabanova, 2017; Mainz, 2003). Given the multidimensional nature of quality, many factors may potentially be measured when using indicators to evaluate occupational therapy services.

The use of a conceptual framework is recommended in the research literature as a useful device for selecting, organizing and reporting on quality indicators in a structured and meaningful way (Arah, Klazinga, Delnoij, Ten Asbroek & Custers, 2003; Arah, Westert, Hurst & Klazinga, 2006; Brown, 2009; Grimmer et al., 2014). The absence of such a framework can result in an inconsistent and potentially inappropriate use of an eclectic mix of indicators (Brown, 2009). The QI Framework was therefore developed to provide a systematic approach to defining meaningful indicators for occupational therapy.

CHAPTER ONE:
REFLECTIVE QUESTIONS

1. What are the seven core quality indicators for occupational therapy and why are these relevant to the profession globally?

2. How do the core quality indicators relate to the WFOT guiding principles for occupational therapy?

3. What is a continuous quality improvement environment and why is this important?

4. What is the relationship between the Plan-Do-Study-Act cycle and quality indicators?

5. How could QUEST contribute to your practice area?

6. How could QUEST be implemented in your setting as part of continuous quality improvement? What steps would need to be taken?

CHAPTER TWO:
DESIGN OF THE QI FRAMEWORK

The QI Framework is a conceptual model for the development of a core set of quality indicators for occupational therapy. The Framework is outlined using a matrix model design, with quality dimensions described along the vertical axis and quality perspectives defined on the horizontal plane (Table Four). With this model, the QI Framework identifies what general dimensions of quality of occupational therapy service require measurement, as well defines different perspectives for how quality is measured (Arah et al., 2003; Arah et al., 2006).

Table Four: QI Framework design

		Quality Perspectives		
		STRUCTURE Environmental factors and resources	**PROCESS** How service is delivered	**OUTCOME** Changes resulting from service
Quality Dimensions	**APPROPRIATENESS:** Right service, person, place, time			
	SUSTAINABILITY: Access to resources without compromising future availability			
	ACCESSIBILITY: Ease in obtaining services			
	EFFICIENCY: Use of resources for maximum results			
	EFFECTIVENESS: Evidence-informed services for those who benefit			
	PERSON-CENTREDNESS: Experiences of receiving service			
	SAFETY: Reduction of risk and avoidance of harm			

Quality dimensions

Quality dimensions are definable and measurable aspects of health services that are related to restoring, improving or maintaining health (Arah et al., 2006). Quality dimensions included in the QI Framework are those identified in the research literature as most relevant to occupational therapy services (Arah et al., 2003; Kelley & Hurst, 2006; World Health Organisation, 2007).

APPROPRIATENESS requires that the right occupational therapy services are delivered by the right person, at the right time, to the right person in the right place.

SUSTAINABILITY as a quality dimension reflects the increasing importance of quality initiatives that maximise continued improvement and extend quality occupational therapy services into the future, by using resources to deliver health care today without compromising the health of current or future generations. Sustainable practices address economic, social, as well as environmental agendas and reflect core occupational therapy values and beliefs regarding client-centredness, empowerment and preventative intervention (WFOT, 2012).

ACCESSIBILITY refers to the ease of obtaining occupational therapy services from a physical, financial or social perspective.

EFFICIENCY is dependent on the optimal use of resources in occupational therapy to yield maximum benefits.

EFFECTIVENESS is the degree of achieving desired outcomes that is reliant on the provision of evidence-informed occupational therapy services to those who could benefit.

PERSON-CENTREDNESS addresses the ability of occupational therapy to meet legitimate expectations of people receiving services. A wide variety of terms are used in occupational therapy practice to describe service recipients; in naming the quality dimension as person-centred, it is acknowledged that *person* may be used interchangeably with patient, client, consumer, service user or any other term that is best suited for the occupational therapy service.

SAFETY considers the degree to which reduction of risk and avoidance of harm is considered in the provision of occupational therapy services; also included is consideration of how occupational therapy promotes beneficence to improve health and well-being among the populations served.

Each of the seven quality dimensions included in the QI Framework contribute to quality performance in occupational therapy. The quality dimensions are not mutually exclusive; a quality concern regarding occupational therapy service may therefore affect more than one quality dimension. Performance of the quality dimensions is also interactive. Actions taken to address one quality dimension may impact the performance of others. As an example, initiatives to increase accessibility may improve opportunity for people to use the service, but also lead to issues related to the availability of resources for effective occupational therapy intervention.

Quality perspectives

Consistent with the Donabedian model of health quality (1966), occupational therapy indicators included in the QI Framework measure quality by evaluating structure, process or outcome. Structure indicators assess environmental factors and resources required to deliver quality occupational therapy services. Process indicators evaluate how occupational therapy is delivered to ensure quality service. Outcome indicators measure changes occurring as result of occupational therapy intervention.

Each type of indicator has inherent advantages and disadvantages for effective quality measurement (Ayanian & Markel, 2016; Donabedian, 1966; Kelley & Hurst, 2006; Schiff & Rucker, 2001). For example, structural indicators such as the presence of required resources for quality service may be easier to measure in some contexts, but do not ensure use of appropriate process to attain quality outcomes. Indicators that measure process are useful only to the degree that the processes measured are known to be needed and appropriate for the outcomes desired. Measurement of outcomes may be complicated by the difficulties in isolating the variable under investigation from other potential influencing factors. Given the potential benefits and challenges of all three perspectives, a mix of structure, process and outcome indicators is recommended for evaluating the quality of occupational therapy services.

Structure indicators

Core indicators used in the QI Framework for measuring structural perspectives of quality relate to the dimensions of appropriateness and sustainability (Table Five). The indicators measure whether required inputs such as competent occupational therapy practitioners are available to provide the right service to the right people, at the right place and the right time. Structural indicators also evaluate whether other types of physical, financial, technical and social resources necessary to provide quality occupational therapy services are continuously available in an economic, socially and environmentally sustainable manner.

Table Five: Structure indicators

	What needs to be in place to achieve our quality priorities?
APPROPRIATENESS	Availability of competent occupational therapists.
SUSTAINABILITY	Long term supply of resources.

Process indicators

Core process indicators included in the QI Framework relate to the dimensions of accessibility and efficiency (Table Six). The indicators assess the ability of intended users to access occupational therapy, as well as whether evidence-informed services are delivered in a way that meets productivity expectations of other stakeholders such as funders and policy-makers for the use of occupational therapy resources.

Table Six: Process indicators

	How is quality occupational therapy delivered?
ACCESSIBILITY	Ability to access service.
EFFICIENCY:	Optimal use of resources.

Outcome indicators

The QI Framework measures outcomes of occupational therapy intervention in respect to the quality dimensions of effectiveness, person-centredness and safety (Table Seven). Indicators evaluate the degree to which goals of service provision are met, as well as whether services are satisfactory to users and conform to safety expectations. Outcome indicators can be positive (such as compliance with standards) or negative (such as an adverse event).

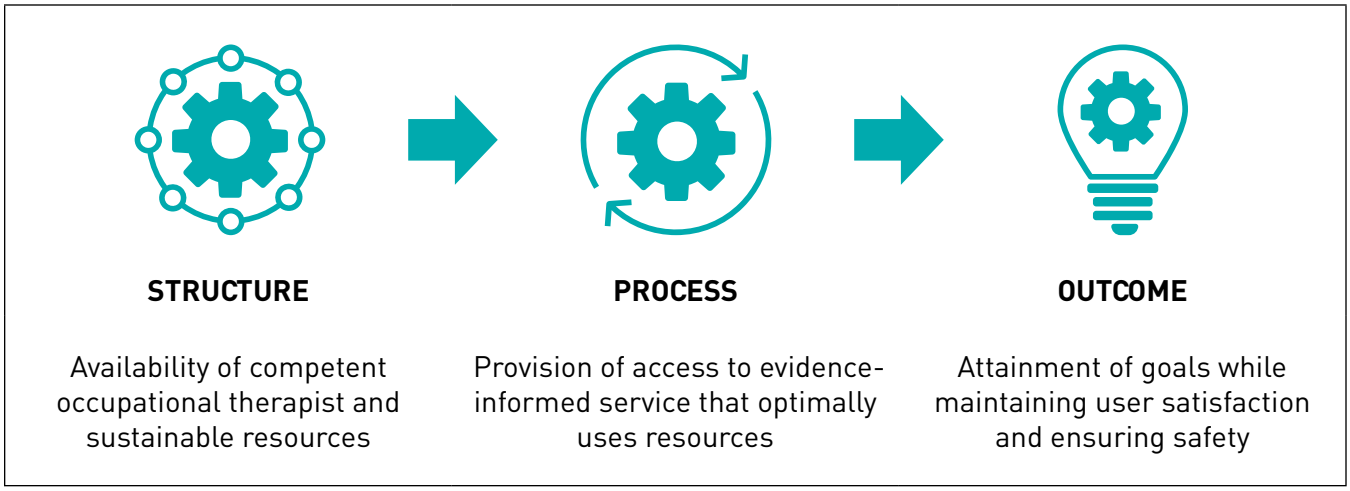
Table Seven: Outcome indicators

	How will we know we have achieved our quality priorities?
EFFECTIVENESS	Success in attaining occupational therapy goals.
PERSON-CENTREDNESS	Satisfaction throughout service delivery.
SAFETY	Incidents resulting in harm.

Use of the QI Framework to measure quality in occupational therapy

Figure Five summarises how the quality of occupational therapy is measured using the quality dimensions and perspectives defined in the QI Framework. The core indicators evaluate how structural elements such as the availability of competent occupational therapists and sustainable resources are used in evidence-informed processes that provide access to service and ensure optimal use of resources to attain expected therapy goals, while also maintaining safety standards and user satisfaction.

Figure Five: QI Framework dimensions and perspectives for measuring quality



CHAPTER TWO:
REFLECTIVE QUESTIONS

1. What is the relevance of the seven quality dimensions to your service?

2. Why is a mix of structure, process and outcome indicators recommended for evaluating occupational therapy using the QI framework?

3. Can you describe why the dimensions of appropriateness and sustainability are related to the structural quality indicators?

4. Can you describe why the dimensions of accessibility and efficiency are related to the process quality indicators?

5. Can you describe why the dimensions of effectiveness, person-centredness and safety are related to outcome quality indicators?

6. Which quality dimension(s) would be most relevant to measure in your setting, and why?

7. What are the key advantages and disadvantages of the different quality perspectives (structure, process and outcome) in your setting?

CHAPTER THREE:
QUALITY EVALUATION PROCESS

QUEST uses a two step Quality Evaluation Process for defining SMART quality indicators for a specific occupational therapy practice or service. Steps involved in the process are outlined in Figure Six. The process involves consideration of priority issues within the practice in order to identify and monitor indicators that have greatest relevance for promoting quality performance.

Before engaging in the Quality Evaluation Process, it is necessary to ensure a common understanding of the occupational therapy practice that will be monitored by the quality indicators. To understand the practice, it is helpful to review factors such as the population(s) served, type of service(s) offered, practice location(s), setting(s) and practitioners involved in service delivery.

Figure Six: Quality Evaluation Process

STEP 1: Determine quality expectations

Each of the quality dimensions described in the QI Framework is examined in the first step of the Quality Evaluation Process to define expectations relating to the services provided by the occupational therapy practice. The viewpoint of the multiple groups or stakeholders involved in the delivery of occupational therapy is considered, such as people receiving the services, referral sources and funding agencies. Expectations that are most relevant and feasible for evaluating quality in the practice are documented. Potential considerations for determining quality expectations are outlined in Table Eight below:

Table Eight: Examples of considerations when reviewing quality expectations

		Considerations
Quality Dimensions	**APPROPRIATENESS:** Right service, person, place, time	What knowledge and skills are necessary to ensure the right services are provided at the right time and right place to the right person?
	SUSTAINABILITY: Access to resources without compromising future availability	How can resources be continuously available in an economic, socially and environmentally acceptable manner?
	ACCESSIBILITY: Ease in obtaining services	What are acceptable timelines and costs for service?
	EFFICIENCY: Use of resources for maximum results	What are expectations relating to use of resources (e.g. staffing and equipment)?
	EFFECTIVENESS: Evidence-informed services for those who benefit	What research evidence guides the provision of service?
	PERSON-CENTREDNESS: Experiences of receiving service	What do people receiving services want?
	SAFETY: Reduction of risk and avoidance of harm	What are expectations relating to safety? What are significant risks to safety?

STEP 2: Define SMART indicators

In the second step of the Quality Evaluation Process, core quality indicators are defined to measure performance in relation to the identified quality expectations. The core indicators must be explicitly stated to describe how data will be collected and reported for the occupational therapy practice. Data may be collected and reported for all seven quality indicators; alternatively, only a few priority indicators may be monitored. More than one indicator may be monitored for a particular quality dimension for issues resulting in multiple quality concerns.

To be effective in driving change for quality improvement, indicators must be specific, measurable, agreed upon, relevant and timely. For example, the indicator must be a valid measure that provides useful information regarding an important factor that influences the quality of occupational therapy service. The indicator must be clearly stated to allow reliability over time and among different evaluators and settings (Mainz, 2003, Macleod, 2012). Table Nine outlines desirable elements for indicators organized using the SMART acronym.

Examples of data collection and reporting specifications for each of the core indicators included in the QI Framework are described in Table Ten. Defining indicator specifications requires consideration of data and resources available to measure performance in relation to identified quality expectations. Data collection already in place for other purposes at a service or system level may be examined for potential use for SMART quality indicators, for example, billing information or workload measurement data. Terms used in describing the specifications may require definition to ensure an accurate and common understanding of what is measured.

Methods used to calculate the indicator result need to be explicitly outlined if a rate-based indicator is used. Indicators that are rate-based are usually expressed as proportions, ratios or average values and need both a numerator and a denominator specifying the population and the time period that is monitored by the measure. Alternatively, a sentinel type of indicator does not require specific calculations. Sentinel indicators measure occurrences or incidents that require further review and analysis, for example, incidents of harm (Mainz, 2003).

Table Nine: SMART criteria for indicators

Specific	The indicator is well defined and clear; "what", "why", "who", "where" and "when" are explained.
Measurable	The chosen measure is valid, reliable and discriminates well, with high specificity and sensitivity. The cost or burden of measurement is acceptable.
Agreed upon	Evidence exists that what is measured affects important outcomes. Where scientific evidence is lacking, the standard reflects expert opinion.
Relevant	The indicator provides useful information. Variability exists in the performance of the measure.
Timely	The indicator addresses issues of current or future importance. Either opportunity exists to influence change or maintenance of a current standard is critical.

Table Ten: Data collection and reporting specifications for SMART indicators

CORE INDICATOR:	AVAILABILITY OF COMPETENT OCCUPATIONAL THERAPISTS.
Quality dimension:	**APPROPRIATENESS**
Sample SMART indicator:	Number of newly hired occupational therapists each year that meet expected education requirements
Sample calculation:	$\frac{\text{Tally of new hires each year meeting education requirements}}{\text{Tally of new hires each year}}$
Definitions required:	How are *expected education requirements* for occupational therapist defined?
Potential data sources:	Audits of human resource records

CORE INDICATOR:	LONG TERM SUPPLY OF RESOURCES.
Quality dimension:	**SUSTAINABILITY**
Sample SMART indicator:	Availability of assistive devices for loan
Sample calculation:	$\frac{\text{Number of assistive devices available for loan each month}}{\text{Total number of assistive devices required for loan each month}}$
Definitions required:	What types of *loan assistive devices* are monitored?
Potential data sources:	Audits of equipment requisition forms

CORE INDICATOR:	ABILITY TO ACCESS SERVICE.
Quality dimension:	**ACCESSIBILITY**
Sample SMART indicator:	Percentage of people seen each month for service within two days of referral
Sample calculation:	$\frac{\text{Number of people seen each month within two days of referral}}{\text{Number of people referred for service each month}}$
Definitions required:	How are *referrals for service* identified?
Potential data sources:	Audits of admission records

CORE INDICATOR:	OPTIMAL USE OF RESOURCES.
Quality dimension:	**EFFICIENCY**
Sample SMART indicator:	Average time required for an occupational therapy written report.
Sample calculation:	$\frac{\text{Amount of time spent on written reports each week}}{\text{Number of reports completed each week}}$
Definitions required:	What types of *written reports* are monitored?
Potential data sources:	Workload management data

CORE INDICATOR:	LONG TERM SUPPLY OF RESOURCES.
Quality dimension:	**EFFECTIVENESS**
Sample SMART indicator:	Number of people able to return to work each year following completion of a work hardening programme.
Sample calculation:	$\frac{\text{Annual count of people that return to work after programme completion}}{\text{Annual count of people of people completing the programme}}$
Definitions required:	How is a *successful return to work* defined?
Potential data sources:	Audits of occupational therapy documentation

CORE INDICATOR:	SATISFACTION THROUGHOUT SERVICE DELIVERY.
Quality dimension:	**PERSON-CENTREDNESS**
Sample SMART indicator:	Percentage of people each year that report satisfaction with occupational therapy services received
Sample calculation:	$\frac{\text{Number of people each year receiving services who are satisfied}}{\text{Number of people each year receiving service}}$
Definitions required:	How is *satisfaction with services* defined?
Potential data sources:	Post-discharge satisfaction survey

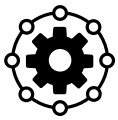
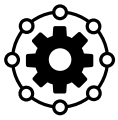
CORE INDICATOR:	INCIDENTS RESULTING IN HARM.
Quality dimension:	**SAFETY**
Sample SMART indicator:	Number of incidents of workplace violence
Sample calculation:	No calculation required (sentinel event indicator)
Definitions required:	What severity and types of *workplace violence* are monitored?
Potential data sources:	Incident reports

To meet SMART criteria for relevance and timeliness, indicators must address factors that significantly influence quality performance of the occupational therapy practice. Prior to defining the SMART indicators, it is therefore helpful to identify factors or issues that impact the ability of the practice to meet the quality expectations documented in the first step of the Quality Evaluation Process. Table Eleven describes quality issues identified for an occupational therapy community falls prevention programme. Table Twelve illustrates how core quality indicators are defined to address the identified issues and stated as SMART indicators that can be monitored by the fall prevention programme for quality improvement.

Table Eleven: Sample quality issues for a community fall prevention programme

		Quality Issues
Quality Dimensions	**APPROPRIATENESS:** Right service, person, place, time	Availability of occupational therapists with required knowledge and skills to run the fall prevention programme
	SUSTAINABILITY: Access to resources without compromising future availability	Changes to public transit that impact the ability of people to attend the fall prevention programme
	ACCESSIBILITY: Ease in obtaining services	Ability of people referred to the fall prevention programme to afford the registration fee
	EFFICIENCY: Use of resources for maximum results	Fluctuating programme enrolment
	EFFECTIVENESS: Evidence-informed services for those who benefit	Use of evidence-informed fall prevention instruction methods and materials
	PERSON-CENTREDNESS: Experiences of receiving service	Satisfaction of people receiving services with fall safety recommendations
	SAFETY: Reduction of risk and avoidance of harm	Potential for increased falls as a result of positive risk taking

Table Twelve: Definition of SMART quality indicators for a community fall prevention programme

QUALITY DIMENSION	CORE QUALITY INDICATORS	SMART QUALITY INDICATORS	QUALITY PERSPECTIVE
APPROPRIATENESS	Availability of competent occupational therapists.	Percentage of occupational therapists involved in programme delivery certified in fall prevention training	 **Structure**
SUSTAINABILITY	Long term supply of resources.	Frequency of participant cancellations each month due to problems with transportation	 **Structure**
ACCESSIBILITY	Ability to access service.	Number of people each month referred to the programme that decline participation because of financial reasons	 **Process**
EFFICIENCY	Optimal use of resources.	Number of interventions per participant provided according to guidelines	 **Process**
EFFECTIVENESS	Success in attaining occupational therapy goals.	Average improvement in programme participant knowledge following fall prevention training	 **Outcome**
PERSON-CENTREDNESS	Satisfaction throughout service delivery.	Percentage of people reporting they plan to use fall safety recommendations after programme completion Number of complaints regarding safety equipment each month	 **Outcome**
SAFETY	Incidents resulting in harm.	Incidence of falls among programme participants in the six months following programme completion	 **Outcome**

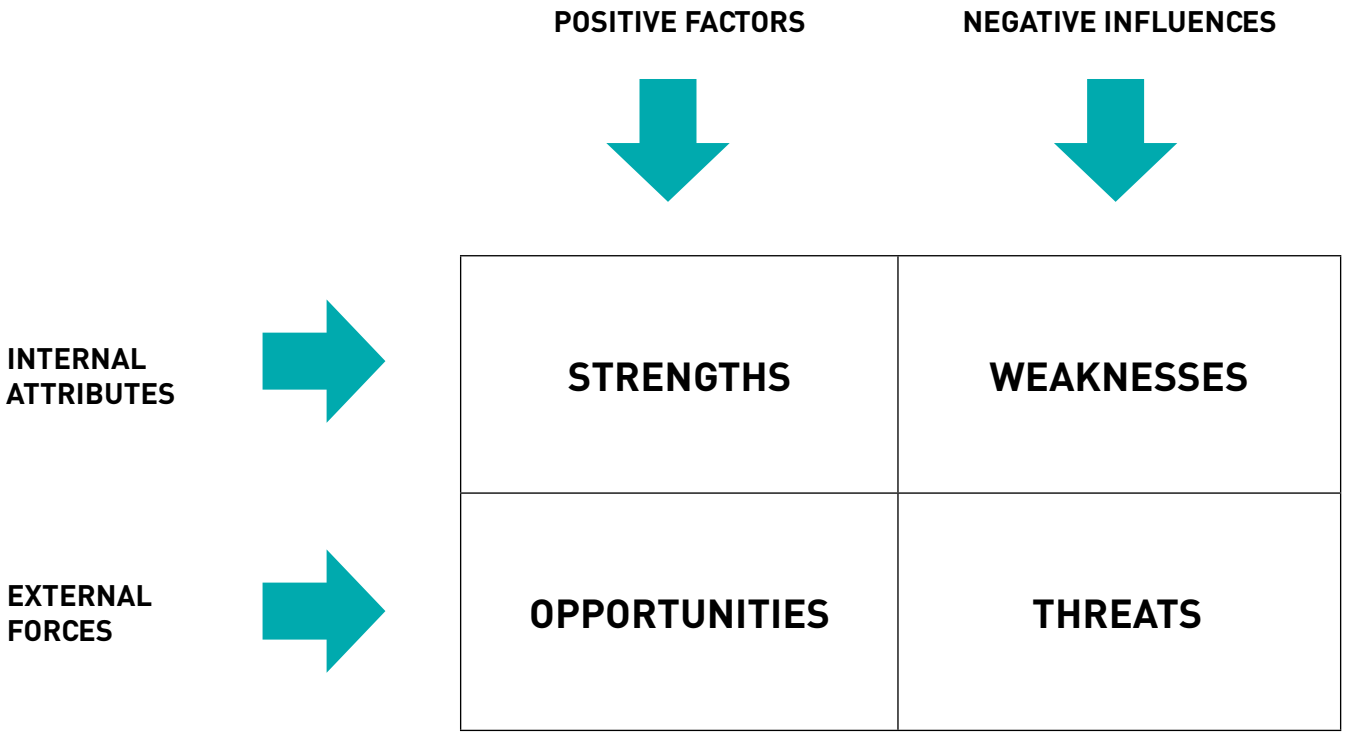
To assist in determining quality issues, a SWOT analysis may be undertaken as an optional exercise. A SWOT analysis helps to understand the context in which the practice operates, examining internal and external factors that impact how well quality expectations are met (Figure Seven). The SWOT analysis examines:

- Strengths (favourable attributes contributing to the mission of the service);
- Weaknesses (internal factors impeding quality and service);
- Opportunities (beneficial external factors and trends); and
- Threats (external conditions that could cause harm or weaken chances to be successful).

From the SWOT analysis quality issues may be identified that address weaknesses or threats to service quality, or alternatively build on strengths and opportunities to advance quality practice.

Worksheets for defining SMART quality indicators using the Quality Evaluation Process are included in Appendix One. A case study that illustrates the Quality Evaluation Process and use of the worksheets is included as Appendix Two.

Figure Seven: SWOT analysis



CHAPTER THREE:
REFLECTIVE QUESTIONS

1. What are the two steps to the Quality Evaluation Process and what are the key elements within them?

2. Do a SWOT analysis of your practice setting.

3. What are the priority issues in your setting in terms of promoting quality performance? Work through Table Nine to help you recognise your quality expectations.

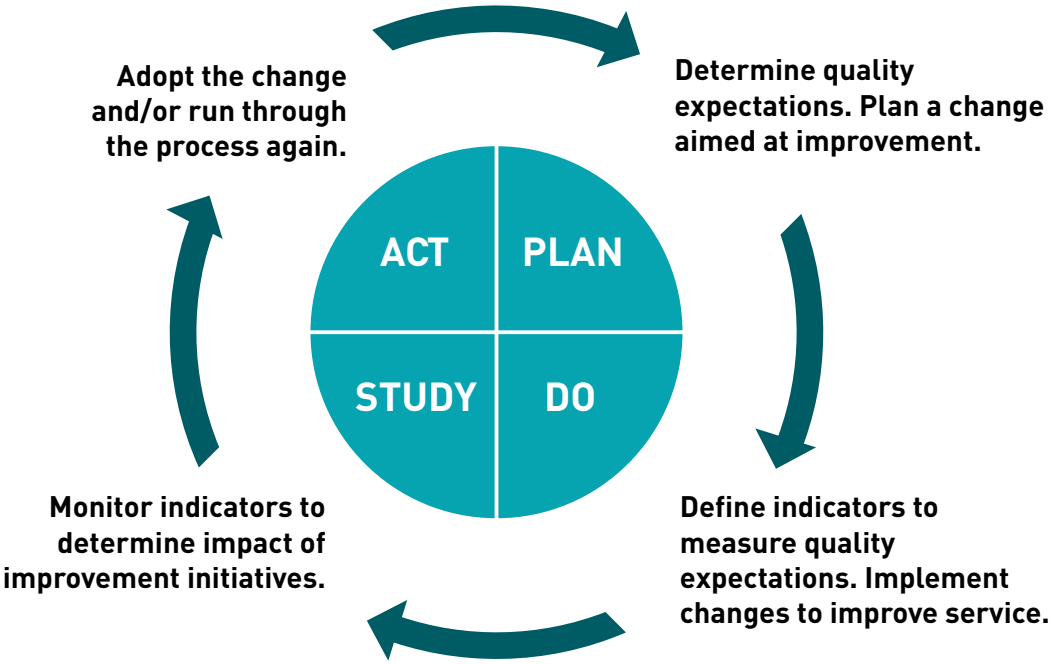
4. Can you define a SMART quality indicator to address the quality issue(s) for your service?

CHAPTER FOUR:
USE OF SMART QUALITY INDICATORS

SMART indicators must be trialed prior to full implementation to ensure the data obtained is valid and reliable. After indicators are finalized and implemented, results are regularly reviewed to identify trends in quality of service. Indicators can be used for internal or external bench marking and provide a baseline for future performance. As indicators provide a quantitative measure of quality service at a specific point in time, successive measurements over time can be used to evaluate the impact of quality improvement initiatives.

Figure Eight outlines how the indicators are used in the Plan-Do-Study-Act Cycle described by Deming (1993). The Quality Evaluation Process in this cycle ensures indicators remain relevant, particularly when internal factors or external influences result in a significant shift in quality performance or quality priorities for the occupational therapy service.

Figure Eight: The Plan-Do-Act-Study Cycle (adapted from Deming, 1993)



CHAPTER FOUR:
REFLECTIVE QUESTIONS

1. How does the Plan-Do-Act-Study cycle ensure that quality indicators remain relevant?

2. What type of data is routinely reviewed in your practice settings? What trends may be evident from the data?

3. How can you supplement this data to better understand the quality of service in your setting?

CHAPTER FIVE:
CONTINUOUS IMPROVEMENT OF QUEST

QUEST was developed with the input of occupational therapists around the world through a multi-stage pilot testing process. QUEST provides a conceptual model and process for a common approach within occupational therapy for evaluation of quality of service. Through pilot testing, it was determined QUEST may be of interest to a number of groups within the occupational therapy profession, including:

- Individual occupational therapists to review and continuously improve their service;
- Occupational therapy managers and administrators to review one or more occupational therapy services across common elements of quality performance;
- Occupational therapy researchers to provide an evaluative design for research in occupational therapy;
- Occupational therapy educators to provide a teaching tool for occupational therapy students regarding quality measurement;
- Occupational therapy regulators to promote quality of service provided to the public; and
- Governments, ministries and other funders to demonstrate accountability regarding quality performance in occupational therapy.

With use and research within the broad occupational therapy community, it is expected that QUEST may evolve through a continuous improvement process. Feedback from users of QUEST is welcomed by WFOT to contribute to this continuous improvement process. Users can submit feedback online at *https://wfot.link/questfeedback*.

CHAPTER FIVE
REFLECTIVE QUESTIONS

1. Use the worksheets in Appendix One to complete the Quality Evaluation Process for your practice setting.

2. How useful is QUEST to develop SMART indicators for your setting or practice area?

3. What additional resources do you need to use QUEST to evaluate quality in your practice?

CHAPTER SIX:
SUMMARY

Quality is a broad and subjective term, with many factors that potentially may be considered in the evaluation of occupational therapy services. QUEST describes the QI Framework as a conceptual model for identifying core indicators for evaluating different dimensions of service quality from the perspective of structure, process or outcome. The two step Quality Evaluation Process ensures consideration of elements of quality most relevant to an occupational therapy service to define the core indicators to be specific, measurable, agreed upon, relevant and timely (SMART). QUEST therefore provides a comprehensive evaluation strategy that considers different perspectives and dimensions of quality to allow occupational therapists to measure quality using indicators in areas of greatest priority to promote continuous improvement of the services they provide.

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APPENDIX ONE

QUALITY EVALUATION STRATEGY TOOL (QUEST) WORKSHEETS

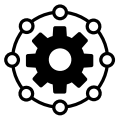
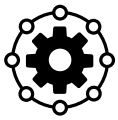
Step One: Determine quality expectations

Consider the viewpoint of others for your services such as people receiving services, referral sources and funding agencies. Sample questions for consideration are provided for each quality dimension.

APPROPRIATENESS: What knowledge and skills are necessary to ensure the right services are provided at the right time and right place to the right person?	
SUSTAINABILITY: What resources are required for long term service provision?	
ACCESSIBILITY: What are acceptable timelines and costs for service?	
EFFICIENCY: What are productivity expectations relating to use of resources (e.g. staffing and equipment)?	
EFFECTIVENESS: What research evidence guides the provision of service?	
PERSON-CENTREDNESS: What do people receiving services want?	
SAFETY: What are expectations relating to safety? What are significant risks to safety?	

Step Two: Define SMART indicators

Identify SMART indicators that measure performance in relation to quality expectations.

QUALITY DIMENSION	CORE QUALITY INDICATORS	SMART QUALITY INDICATORS	QUALITY PERSPECTIVE
APPROPRIATENESS	Availability of competent occupational therapists.		 Structure
SUSTAINABILITY	Long term supply of resources.		 Structure
ACCESSIBILITY	Ability to access service.		 Process
EFFICIENCY	Optimal use of resources.		 Process
EFFECTIVENESS	Success in attaining occupational therapy goals.		 Outcome
PERSON-CENTREDNESS	Satisfaction throughout service delivery.		 Outcome
SAFETY	Incidents resulting in harm.		 Outcome

Identify data collection and reporting specifications for each SMART indicator. Indicators must be specific, measurable, agreed upon, relevant and timely.

CORE INDICATOR:	AVAILABILITY OF COMPETENT OCCUPATIONAL THERAPISTS.
Quality dimension:	APPROPRIATENESS
SMART indicator:	
Calculation:	
Definitions required:	
Data sources:	

CORE INDICATOR:	LONG TERM SUPPLY OF RESOURCES.
Quality dimension:	SUSTAINABILITY
SMART indicator:	
Calculation:	
Definitions:	
Data sources:	

CORE INDICATOR:	ABILITY TO ACCESS SERVICE.
Quality dimension:	ACCESSIBILITY
SMART indicator:	
Calculation:	
Definitions:	
Data sources:	

CORE INDICATOR:	OPTIMAL USE OF RESOURCES.
Quality dimension:	**EFFICIENCY**
SMART indicator:	
Calculation:	
Definitions:	
Data sources:	

CORE INDICATOR:	LONG TERM SUPPLY OF RESOURCES.
Quality dimension:	**EFFECTIVENESS**
SMART indicator:	
Calculation:	
Definitions:	
Data sources:	

CORE INDICATOR:	SATISFACTION THROUGHOUT SERVICE DELIVERY.
Quality dimension:	**PERSON-CENTREDNESS**
SMART indicator:	
Calculation:	
Definitions:	
Data sources:	

CORE INDICATOR:	INCIDENTS RESULTING IN HARM.
Quality dimension:	**SAFETY**
SMART indicator:	
Calculation:	
Definitions:	
Data sources:	

APPENDIX TWO
CASE STUDY

A case study is presented to illustrate use of the QUEST worksheets. The case study involves occupational therapy services provided by a clinic for people with mental health disorders. All patients admitted to the hospital inpatient unit can be referred to occupational therapy. Interventions are delivered in group and individual sessions and are directed to supporting patients to engage in healthy routines and use pro health strategies to cope with anxiety and stress. Services are offered on the inpatient ward and in the community with the resources of one full time occupational therapist.

Before completing the QUEST worksheets, a SWOT analysis was conducted to identify strengths, opportunities, weaknesses and threats relating to the occupational therapy services provided for clients of the clinic. The SWOT analysis was undertaken to develop an understanding of the overall positive and negative issues faced by the occupational therapy service. Results of the SWOT analysis are outlined below:

STRENGTHS	WEAKNESSES
• Opportunity to see patients both on and off the ward • Patients are motivated to engage in occupational therapy • Clear role for occupational therapy in mental health disorders • Occupational therapy is a respected role within the service with strong links with other services	• Lone OT for 20 patients • Multiple roles to fulfil - get drawn into multiple projects and work roles • Physical space is limited for therapy interventions • Working alone results in risk situations • Patients often are discharged before intervention is complete • No occupational therapy is offered to outpatients to continue work started on the ward
OPPORTUNITIES	**THREATS**
• Training programmes available • Possibilities for presenting at conferences and engaging in research • Involvement in media projects • Increase in referrals • Hospital sustainability initiative launched	• Increased complexity of patient needs • Admissions getting shorter, reducing time for comprehensive assessment and intervention • Limited community social supports and housing availability

From the SWOT analysis, quality issues were identified to focus the development of SMART indicators on significant concerns that impact the delivery of occupational therapy services. The quality issues identified are outlined below.

QUALITY DIMENSION	QUALITY ISSUES
APPROPRIATENESS	Available opportunities for professional development through training, research or presentation at conferences are not used.
SUSTAINABILITY:	A facility-wide plan is under development to address sustainability of required resources but does not yet include occupational therapy services.
ACCESSIBILITY:	Patients who can benefit from occupational therapy cannot access service because of high staff workloads.
EFFICIENCY:	Occupational therapy workloads and productivity expectations exceed capabilities to provide timely service resulting in cancellation of client sessions. Work in clinical administration and research results in less time for patient intervention.
EFFECTIVENESS:	Occupational therapy intervention goals set with clients are not always met due to a lack of time available for intervention.
PERSON-CENTREDNESS:	Patient satisfaction with occupational therapy services is unknown.
SAFETY:	Staff working alone can result in risk situations, particularly during community activities.

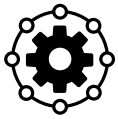
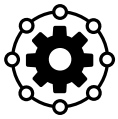
Step One: Determine quality expectations

Consider the viewpoint of others for your services such as people receiving services, referral sources and funding agencies. Sample questions for consideration are provided for each quality dimension.

APPROPRIATENESS: What knowledge and skills are necessary to ensure the right services are provided at the right time and right place to the right person?	The occupational therapist must be a graduate of an accredited occupational therapy education programme, with ongoing participation in continuing professional development
SUSTAINABILITY: What resources are required for long term service provision?	Required resources include appropriate work space and an office, plus therapy and kitchen supplies.
ACCESSIBILITY: What are acceptable timelines and costs for service?	Patients are expected to be seen within one week of admission for a full occupational therapy assessment.
EFFICIENCY: What are productivity expectations relating to use of resources (e.g. staffing and equipment)?	The occupational therapist is expected to meet department standards relating to average number of patients seen per day by occupational therapy individually or in groups.
EFFECTIVENESS: What research evidence guides the provision of service?	Compliance is expected with: • Code of ethics • Occupational therapy evidence framework
PERSON-CENTREDNESS: What do people receiving services want?	Patients want courteous, safe, timely services that are relevant to their needs.
SAFETY: What are expectations relating to safety? What are significant risks to safety?	Expectations for safety include: • Patients feel safe when engaged in occupational therapy intervention • Patients are supported to take therapeutic risks within safe environments • Staff feel safe when working with patients

Step Two: Define SMART indicators

Identify SMART indicators that measure performance in relation to quality expectations.

QUALITY DIMENSION	CORE QUALITY INDICATORS	SMART QUALITY INDICATORS	QUALITY PERSPECTIVE
APPROPRIATENESS	Availability of competent occupational therapists.	Success of occupational therapy staff with meeting annual self-identified professional development goals for continuing competency.	 Structure
SUSTAINABILITY	Long term supply of resources.	Percentage of resources used during occupational therapy intervention that are locally sourced.	 Structure
ACCESSIBILITY	Ability to access service.	Average wait time for patients requiring occupational therapy services for receiving a complete occupational therapy assessment.	 Process
EFFICIENCY	Optimal use of resources.	Average number of patient attendances per day. Number of scheduled patient sessions cancelled due to unavailability of occupational therapy staff.	 Process
EFFECTIVENESS	Success in attaining occupational therapy goals.	Success of patients in meeting occupational therapy goals during their hospital admission.	 Outcome
PERSON-CENTREDNESS	Satisfaction throughout service delivery.	Number of discharged patients reporting satisfaction with occupational therapy services received during their admission.	 Outcome
SAFETY	Incidents resulting in harm.	Number of incidents of patient injury during occupational therapy intervention.	 Outcome

Identify data collection and reporting specifications for each SMART indicator.

CORE INDICATOR:	AVAILABILITY OF COMPETENT OCCUPATIONAL THERAPISTS.
Quality dimension:	**APPROPRIATENESS**
SMART indicator:	Success of occupational therapy staff with meeting annual self-identified professional development goals for continuing competency.
Calculation:	$\frac{\text{Number of staff meeting professional development goals each year}}{\text{Number of occupational therapy staff each year}}$
Definitions required:	*Professional development goals*: Goals identified by a staff member during the annual performance appraisal process.
Potential data sources:	Audits of human resource performance review documentation.

CORE INDICATOR:	LONG TERM SUPPLY OF RESOURCES.
Quality dimension:	**SUSTAINABILITY**
SMART indicator:	Percentage of resources used during occupational therapy intervention that are locally sourced.
Calculation:	$\frac{\text{Number of locally sourced resources used during occupational therapy intervention}}{\text{Number of resources used during occupational therapy intervention}}$
Definitions required:	*Locally sourced*: Obtained from a supplier within 100 kilometers of the hospital
Potential data sources:	Procurement records

CORE INDICATOR:	ABILITY TO ACCESS SERVICE.
Quality dimension:	**ACCESSIBILITY**
SMART indicator:	Average wait time for patients requiring occupational therapy services for receiving a complete occupational therapy assessment.
Calculation:	$\frac{\text{Total wait time to obtain a complete assessment each week}}{\text{Total number of patients requiring services to receive an assessment each week.}}$
Definitions required:	*Wait time*: Refers to the number of days patients requiring occupational therapy services must wait before a complete occupational therapy assessment is completed. *Patients identified as requiring occupational therapy services*: Refers to patients who are identified during ward team meetings as potentially benefitting from occupational therapy.
Potential data sources:	Audits of the date of ward admission and occupational therapy assessments as recorded in patient documentation.

CORE INDICATOR:	OPTIMAL USE OF RESOURCES.
Quality dimension:	**EFFICIENCY**
SMART indicator:	Average number of patient attendances per day.
Calculation:	$\frac{\text{Number of patients receiving occupational therapy sessions each week}}{\text{Number of days of service each week}}$
Definitions required:	*Patient attendance*: Refers to face-to-face encounters individually or in groups with the occupational therapist
Potential data sources:	Workload measurement data

CORE INDICATOR:	OPTIMAL USE OF RESOURCES.
Quality dimension:	**EFFICIENCY**
SMART indicator:	Number of scheduled patient sessions cancelled due to unavailability of occupational therapy staff.
Calculation:	Review of client attendance records.
Potential data sources:	Workload measurement data

CORE INDICATOR:	LONG TERM SUPPLY OF RESOURCES.
Quality dimension:	**EFFECTIVENESS**
SMART indicator:	Success of patients in meeting occupational therapy goals during their hospital admission.
Calculation:	$\frac{\text{Number of patients each month meeting occupational therapy goals}}{\text{Number of patients each month receiving occupational therapy during their hospital admission}}$
Definitions required:	*Occupational therapy goals:* Refers to goals set by the occupational therapist in conjunction with the patient for the occupational therapy service received during admission.
Potential data sources:	Audits of patient information.

CORE INDICATOR:	SATISFACTION THROUGHOUT SERVICE DELIVERY.
Quality dimension:	**PERSON-CENTREDNESS**
SMART indicator:	Number of discharged patients reporting satisfaction with occupational therapy services received during their admission.
Calculation:	$\frac{\text{Number of discharged patients surveyed reporting satisfaction}}{\text{Number of discharged patients surveyed regarding satisfaction}}$
Definitions required:	*Satisfaction*: Refers to ratings of 4 or higher for occupational therapy services, as recorded on a 5 point rating scale when surveyed within one month following discharge from the hospital.
Potential data sources:	Satisfaction survey of discharged occupational therapy patients.

CORE INDICATOR:	INCIDENTS RESULTING IN HARM.
Quality dimension:	**SAFETY**
SMART indicator:	Number of incidents of patient injury during occupational therapy intervention
Calculation:	None
Definitions required:	*Patient injury:* Refers to physical or emotional distress requiring health care intervention.
Potential data sources:	Incident reports

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