

The logo features the word "SQUIRE" in a bold, red, sans-serif font. The letter "Q" is stylized with a target symbol inside it, and a grey arrow is shown pointing towards the center of the target. The arrow's shaft extends from the bottom left towards the center of the "Q".

# SQUIRE

Every Clinician · Every Patient · Every Time

# SQUIRE Guide

## Background, Reporting and Measurement

as at January 2009

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## Context

The Clinical Practice Improvement (CPI) program forms part of the larger Safety and Quality Investment in Reform (SQuIRe) Program, and provides Western Australia with an opportunity to be one of the leaders in improving patient safety outcomes.

The year 2006 was a landmark year for patient safety in the United States. The 100k Lives campaign was launched by the Institute of Healthcare Improvement (IHI) in 2004 with the aim of preventing 100,000 deaths by implementing key evidence based practices across hospitals in the US. By June 2006, 3000 United States hospitals were participating in the program, equating to 75% of hospital beds and resulting in the prevention of 122 300 deaths.

Following the success of the 100k Lives campaign, Canada and Australia launched their own patient safety programs again aiming to save lives by implementing evidence based practices. The critical elements distilled from the 100k Lives campaign and present in all three programs are:

- best practice content;
- data and target driven measures;
- multidisciplinary working teams; and
- engagement of leadership and frontline clinical staff.

The above campaigns provided a strong foundation for the establishment of the SQuIRe CPI, which consists of three clusters:

- Evidence-based care (4 initiatives).
- Medication safety (1 initiative).
- Hospital infection prevention and control (3 initiatives).

Selection of the clusters and their eight related initiatives was based on:

- identification of major patient safety priorities;
- a proven gap between policy and current practice; and
- existence of proven successful interventions to address the priorities.

The intention of the SQuIRe CPI program is for hospitals/health services to develop reliable processes to ensure that the right practices happen by every clinician, every time, for every patient.

## Model for Improvement

To successfully reach their clinical practice improvement goals, each health service will have to design and redesign processes to close the gap between “what should happen”, and “what actually happens”. For example, what processes need to be put in place to ensure that each eligible hospitalized patient requiring prophylaxis for venous thromboembolism gets it? What needs to be done to ensure healthcare workers clean their hands appropriately and reduce the risk of healthcare-associated infection?

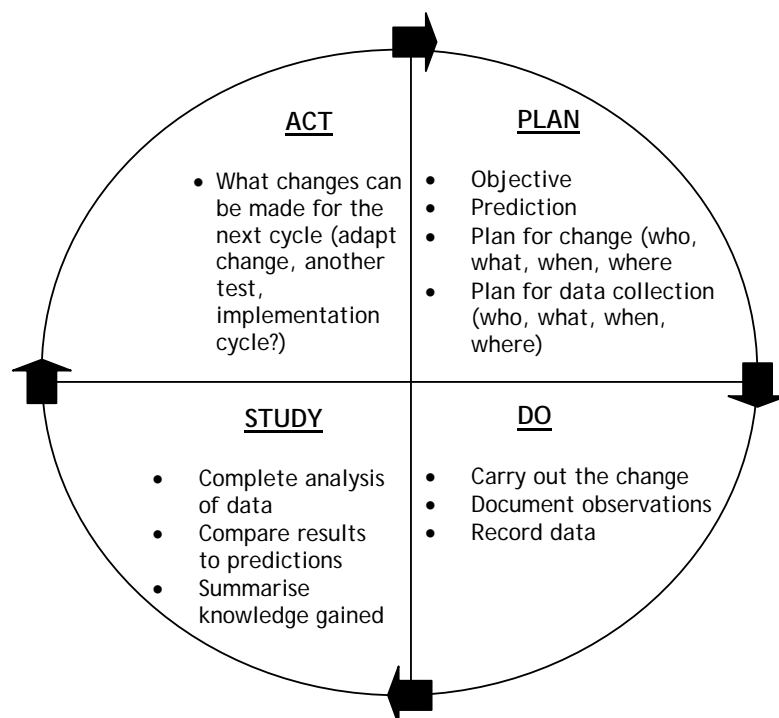
The current demonstrable reliability gap in the delivery of key clinical practices can be closed, but the necessary changes are more likely to be successful and sustained if a tested quality improvement method is used (Boaden et al 2008).

The IHI Model for Improvement is one recognised approach for successfully implementing change in the healthcare setting. The Model for Improvement provides a framework for developing, testing and implementing changes, and consists of two parts. The first is the ‘thinking’ part, and consists of three questions fundamental for guiding the implementation of changes. These questions are:

- What are we trying to accomplish? - the AIM of the project
- How will we know that a change is an improvement? - appropriate MEASURES
- What changes can we make that will result in improvement? - identify CHANGES required to achieve the desired results.

The second part of the Model for Improvement is the ‘doing’ part, and is made up of Plan, Do, Study, Act (PDSA) cycles. Once it has been decided what exactly needs to be achieved, the PDSA cycle can be used to test out ideas from question 3 above. The objective of the PDSA is to test changes on a small scale, and incrementally gather information about the success of the change.

With the Model for Improvement approach, conducting small tests of change allows team members to learn quickly what works, or how changes need to be refined before full implementation.



## Monitoring and Sustaining Successful Improvement

To optimise implementation success and sustainability, the following steps are recommended:

- Establish a multidisciplinary team that is integrated into existing clinical and governance structures, is empowered to make necessary changes, and supported by the leadership of the health service.
- Ensure team members receive adequate resources and training to be successful.
- Use the Model for Improvement to implement change on a small scale before spreading.
- Focus on developing reliable processes by using concepts from human factors and reliability research - education and training alone can not result in sustained successful practice improvement.
- Frequent sampling and measurement (measuring a sample instead of the entire process can save time and resources while accurately tracking performance. For more detail on sampling see the Institute for Healthcare Improvement: <http://www.ihl.org/NR/rdonlyres/BBBA7F08-2C35-4A62-B242-18E3CB30AE02/641/Sampling.pdf>
- Reporting and feedback of results to leadership and clinicians to support practice improvement.
- Planning for spread and sustainability of changes at an early stage

## Reporting Requirements

The primary purpose of measuring and collecting data during the improvement process is for learning and continuous improvement by the frontline clinical teams. The sharing of ideas, experiences and successes is a key way for health services and health care workers to be involved in continuous program improvement.

### *Monthly Team Reports*

Teams are more successful when they have focused aims. It is suggested that CPI teams set specific short term Aim statements in pursuit of the overall goal. For example an Aim statement might specify percentage increases in risk assessment within a set timeframe. Setting such a numerical goal clarifies the short term aim, helps to create tension for change, directs measurement and focuses the initial first steps towards clinical practice improvement.

At a hospital level, progress of team changes and improvements should be tracked at least on a monthly basis, and this should then be distributed to all members involved in the initiative (it is suggested to also include items such as attainment of short term aims and notable lessons learnt). This report will be a critical step in involving staff and facilitating continued enthusiasm for the project.

Improvement data is best presented and understood by creating annotated run charts then applying statistical process control methods if further analysis is required. To create annotated run charts, the Institute for Healthcare Improvement has available on their website the 'Improvement Tracker' which allows you to track your measures by graphing your data. The 'Improvement Tracker' can be accessed via:

<http://www.ihl.org/ihl/workspace/tracker/>

### *Quarterly Reports to OSQH*

Project Teams should use their internal reports to prepare a quarterly progress report that is submitted to the Office of Safety and Quality in Healthcare within 10 working days of the end of the quarter. The purpose of the progress reports is two-fold:

- For accountability to the Director General regarding investment in the SQulRe Program.
- To assist the Office of Safety and Quality in Healthcare in tailoring support for the program as it evolves.

Each quarterly report should identify:

- a brief outline of at least two changes actively tested using the PDSA cycle to demonstrate use of the Model for Improvement;
- the patient population that has been included in each measure;
- a summary of your progress against each measure, either for each month, or aggregated on a quarterly basis and
- the approximate proportion of eligible patients covered by each measure (to determine the spread of the program at your site).

## General Measurement Information and Key Points

### *Frequency of reporting and reflecting spread*

- All evidence around improvement underlines the importance of frequent measurement and small tests of change, and taking a planned approach to spreading initiatives (<http://www.ihl.org/IHI/Topics/Improvement/>). For this reason most CPI teams are developing systems providing at least monthly measurements for feedback to their local improvement teams.

- As the program spreads to other wards/clinical areas, measuring of improvement should also spread using a similar sampling approach where applicable. While frontline teams may benefit from stratification of results (eg by clinical area) during spread, such data should be combined for reporting each measure to OSQH. For example, hand hygiene compliance data for all 3 wards currently included at one site can be combined in the OSQH report, but differences in results between the wards will be important for team members to review.
- If teams have moved to a quarterly reporting cycle, as a reflection of a maturing program where redesigned processes have been successfully embedded on at least some wards/clinical areas, data can be aggregated and reported to OSQH quarterly (i.e. all the measurement done for that quarter can be aggregated into a single figure). NB this is obviously insufficient for frontline improvement teams until program is hospital-wide and at close to 100% compliance.

**Example:**  
*You have implemented your improvements successfully on 2 wards (and measuring only once a quarter), and are now rolling out to a further 3 wards (and are measuring weekly to monthly). To report to OSQH, add all of the numerators and denominators, and report a quarterly number:*

Ward	Jul	Aug	Sept	Quarter
1			20/20	20/20
2			18/20	18/20
3	5/10	7/10	9/15	$(5+7+9) / (10+10+15) = 21/35$
4	6/12	9/15	8/15	$(6+9+8) / (12+15+15) = 23/42$
5	7/18	6/15	10/12	$(7+6+10) / (18+15+12) = 23/45$
<b>Total to report to OSQH</b>				$(20+18+21+23+23) / (20+20+35+42+45) = 128/162$

*Report these ward-level measures to frontline teams at appropriate frequency.*

*For this all-or-none measure, this tells us that during the quarter, of 162 patients audited at this site, 128 got all their elements of care. We can see if this is an overall improvement since last quarter.*

### Spreading

- Teams are reminded that successful improvement programs commonly have a careful plan for starting with small pilots to test redesigned processes, then for spread (<http://www.ihi.org/IHI/Topics/Improvement/SpreadingChanges/>). The explicit goal and challenge of the CPI program has been to implement these 8 key safe practices to every eligible patient (i.e. 'every patient, every time'). Area Health Services and hospitals are best placed to allocate funds and resources according to clinical priorities, and retain this responsibility and overall clinical

governance. It is therefore not appropriate for OSQH to specify which patients should be included at each site as the program is implemented. However, OSQH would like to get a better understanding of the extent of spread that has been possible to achieve within the resources and current program, hence our request for information about how far teams have progressed towards this goal.

- The workbooks ask for approximate % of eligible patients included in each measure (if appropriate). This is a general approximation of the total number of eligible patients for each CPI and associated measures, and how many of these are currently targeted by the improvement program.

**Example:**

*The eligible population for the medication reconciliation intervention is all hospitalized patients. You have targeted your interventions on 9 of your 12 wards, however, do not have the necessary resourcing to spread to the other three (low risk wards) at present. Since the low risk wards are still within your eligible population (all hospitalized patients), they are still counted in your spread measurement. Your workbook to the OSQH will read: 75% of eligible patients are covered by this intervention.*

***Measuring processes and outcomes in the same patient population***

- To evaluate whether the process improvements are resulting in improved outcomes, the same patient population should be included in process and outcome measures for each reporting period.

**Example:**

*If 5 different wards have been included in your falls reduction program during a quarter, report both process (risk assessment and prevention interventions) and outcome (falls incidence) for those 5 wards at the end of the quarter. Sampling should be used to estimate these measures where appropriate.*

***All or none measurement***

- The measures outlined in the workbooks are those that are to be reported to the OSQH. The purpose of reporting to the OSQH is to give the OSQH of an idea of the effectiveness and spread of the CPI program, and to identify if problems are being encountered in teams or at hospitals. For this reason, and based on evidence for all or none measurement, many of the new measures have been rolled up into one. However, at a site level, the purpose for measurement is different - for learning and continuous improvement. Therefore it is important for front-line staff to have

improvement details on each aspect of a measure, and you are encouraged to continue collecting data on the individual components, secondary measures or operational measures that you have been using in the past years, especially to get enough data points for meaningful statistical interpretation.

### *Benchmarking and comparison*

- There is no intention by OSQH to compare reported process and outcome measures between sites. We will continue to use the team assessment score that teams will be familiar with to compare progress against goals of sustained successful implementation of relevant programs in sites and health services. This measure reflects overall progress towards goals, rather than a benchmarking of quantitative data. This is important to ascertain what has been achieved under the terms of the CPI program.

### *Consistency of tools and measures*

- As benchmarking and comparison has not been the goal of the CPI program, local teams have been able to adapt tools and methodology to suit their context and resourcing levels. This ability to locally adapt, or “operationalise” material is thought to be important to support long term sustainability, particularly in the absence of a single validated tool or measure for most CPI targets. It is important that development of a measurement tool should *not* be the major focus of the program, and if teams wish to collaborate to efficiently develop common tools across sites, then this is strongly encouraged.
- Similarly, while policies should be based on the accepted evidence, for many CPI targets there is not one single statewide or national practice standard. While it is not the role of OSQH to mandate clinical policy for use in CPI initiatives, we encourage collaboration between teams and sites where appropriate, to move towards development of a standardised approach as an important step towards reliability.
- While variation in tools and policy is expected over time and between sites, we would request that the basic definitions for each measure are consistently applied in reports to the OSQH. This will enable credible evaluation of progress over time.