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ISCCM

CRITICARE 2015



Quality & Safety in Critical Care Medicine

Editors

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Foreword

Banambar Ray

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CHAPTER

4

Implementation of Quality Indicators in Developing Countries

Suresh Ramasubban

Classic quality-of-care parameters have been elucidated using the Donabedian model of structure, process and outcomes.[1] Structure refers to the first component of the quality-of-care model and can be defined as the way we organize care. Process generally means what we do, or what we fail to do for patients and their families. Outcome refers to the third part of this quality-of-care model and refers to the results we achieve in the intensive care unit. Critical care physicians and administrators worldwide use these parameters to develop quality standards and quality improvement tools. These quality indicators when monitored and compared, enables one to judge the efficiency of any ICU. However in India, the monitoring of the structure, process or outcomes is not a universal practice because of a wide variety of reasons including the fact that the leadership in the intensive care units is not clearly defined.

In 2008, the Indian Society of Critical Care Medicine (ISCCM) had taken the initiative, at its executive body meeting, to identify quality indicators for ICUs in India, which will help ICUs in India, judge their performance levels and compare them with the national data base. This led to the preparation of a document, published as a guideline in 2009.[2] The working group consisting of critical care physicians selected a wide variety of parameters that need to be monitored for delivery of quality care in India. With this objective, the ISCCM has identified common parameters with their international benchmarks to address the structure, process and outcomes of care in Indian ICUs.

Quality indicators selection: The Indian Society of Critical Care Medicine (ISCCM) has selected various parameters like mortality, morbidity, operational or process, error and patient safety, infection control, human resources and customer satisfaction parameters. These include but are not limited to Standardized mortality rate (SMR), Rates of iatrogenic pneumothorax, rates of renal failure in non-coronary ICUs, rates of decubitus ulcers, length of stay, Fall rates, Ventilator associated pneumonia (VAP) rates, Catheter associated urinary tract infection (CAUTI), bloodstream infection due to central lines (CLABSI), etc. The document also explains the purpose and usefulness of selected parameters and to avoid confusion and ambiguity, calculations, interpretations and benchmarking are also explained.

Implementation: Implementation refers to the transition period, following a decision to adopt a new idea or practice, when intended users put that new idea or practice into use—for example, when clinical and nonclinical staff begins applying quality improvement (QI) principles and practices to improve clinical care processes. The decision to adopt these

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quality initiatives are not recent, it is the application of these initiatives into daily practice that is lacking. The adoption of a new idea and putting it into practice is difficult. It requires selection of ideas and parameters; and clearly defined practical action plans to implement these ideas. Implementation of new ideas also require one to recognize the potential barriers in implementation and have action plans to overcome these barriers.

Selection and action plan for implementation of quality indicators: Successful implementation is necessary to optimize the effect of quality indicators on the quality of care. Successful implementation requires:

1. Appropriate parameter selection
2. Appropriate benchmarking
3. Buy in by the management
4. Dedicated quality data monitoring team
5. Information Technology (IT) support
6. Leadership.

1. The parameter to be selected for quality care should have relevance to the patient, the hospital and the society in general. To successfully implement these indicators, one has to understand the fact that it is not possible to select all the available parameters, therefore select parameters that are relevant to the objectives of the unit.[3] While selecting the quality parameters focus should be on the main objective, i.e. survival. So the one parameter that has to be selected is mortality rates. The mortality rate has to be "Standardized mortality rate" because crude mortality is affected by factors like severity of illness, age and co-morbid conditions. The other parameters selected should be a high impact morbidity parameter, which in our country is generally device related infections like VAP/CAUTI/CRBSI. Resource utilization and financial endpoints may be of interest to the administrators and the satisfaction parameters are important from the customer viewpoint. These parameters are selected once the basic program is working and there is a good quality team and leadership, and a vision for the hospital/ICU regarding their future goals.
2. Once a parameter is selected, it needs to be benchmarked to a standard. Benchmarking to a western data set is like comparing apples and oranges. The role of non-medical factors like socioeconomic factors cannot be ignored when comparing monitored parameters, i.e. mortality, morbidity outcomes.

   Due to these reasons, appropriate benchmarking is an important step for implementation of quality guidelines in India. The question that arises is how to select a parameter that can be compared appropriately. The only international standards pertain to Device related infections available from the International Nosocomial Infection Control database[4] is the best reference for comparing device related infections in intensive care units. If benchmarked data are not available or if available but not comparable to one's data then comparing trends is an effective way to proceed with the quality improvement efforts.
3. "The cost of non-quality in any enterprise is more expensive than investing in quality". This quotation from the ISCCM position paper on quality is important in convincing the management of any hospital regarding investing in quality.[2] This pertains more so to quality in ICU as the lack of quality is most visible and is magnified in the intensive care units. The cost involved in implementing a quality implementation program is limited to personnel for data collection and interpretation, and IT support to analyze the data. Using the PDSA

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cycle (Plan, Do, Study, and Act) to bring a change in the performance is reasonably cost effective. A buy in from the management is actually making them more and more aware of the importance of quality.[5] Monitoring data especially pertaining to resource utilization like the length of stay (LOS), and the consequent cost savings, generally acts as easy fodder to convince the management for the need for quality improvement initiatives.

4. A dedicated Quality Improvement (QI) team needs to be set up for effective implementation. This team could be just one person assisting the intensivist or may be larger with full staff depending on resources. To start off, one needs to have some members trained in basic statistical techniques and problem solving tools and empowered to make decisions based on their analysis of the data. These requirements are easily met and it is not difficult to find the necessary human resources to embark on this QI journey.
5. Information technology (IT) support: Despite the IT revolution that is galvanizing the country as a superpower, Hospital Management System (HMS) are far behind in their capability and even the best hospitals in India cannot boast of a good HMS. HMS can minimize errors and diminish the manpower required to collect, collate and analyze data. However, this luxury is not forthcoming and we have to rely on human resources to collect the data. That is why implementation gets bogged down in the data collection phase itself, as there is no way different parameters can be captured truly by chart analysis without electronic data interpretation. The best way to implement QI programs is to collect small sets of data initially, which are easily accessible by a non-medically trained person, like LOS.
6. Leadership: Implementing QI is demanding on individuals and hospitals. It requires great leadership to build a team from the limited human resources, utilize the existing infrastructure and financial limitations to develop and sustain an effective QI program. Intensivist/medical director of the ICU is the best person to take on the mantle of the leader of the QI programs of the hospital. If the clinical responsibilities of the intensivist are overwhelming then the leadership role should go to an individual in the unit, working in a senior capacity/coordinators to implement the QI programs. The leader has to provide the vision for implementation of quality systems and must be hands on to implement the vision, at least at the inception. Delegation of the implementation of the quality systems then become possible once the hospital has well geared and oiled systems in place.

Barriers to implementation: "The eyes see what the mind knows" an age-old adage, is most appropriate in understanding the barriers to the implementation of QI in our country. The main barrier thus is knowledge; other barriers are attitude and time constraints.[6] Knowledge gap, i.e. lack of understanding the issues pertaining to the principles of QI is the main barrier. Physicians, nurses and hospital administrators are not familiar with and aware of quality indicators. Existence of documents like the ISCCM guidelines, though freely available on the web is not accessed often, indicating that it is not a priority for doctors. Studies show that, in general, healthcare professionals and managers are familiar with the concept of using quality indicators to improve care,[6] however data of this kind is not available in our country. The attitude of doctors and other health care professionals towards QI is the other barrier. The way of looking at quality improvement is very ambivalent with a tendency towards negativism amongst doctors. Time constraints are an equally important

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barrier especially amongst full time clinicians who also dabble with administration, without getting paid for their administrative duties. The lack of dedicated time for QI services rendered by the physicians and nurses is arguably an important barrier to implementation.

Lack of resources, i.e. manpower, IT tools, data analysis tools also contribute and are an impediment to the application of QI programs.

Methods to Overcome Barriers

Acquiring knowledge about the quality principles, their application and implementation is the most important way forward. Second, there has to be positive attitudes towards the use of quality indicators as tools to improve ICU care. Third, barriers related to time and resource constraints, need to be solved. It is possible to change the behaviour without changing knowledge or attitude, but that is not the way forward. The best change in behaviour occurs when there is a concomitant change in knowledge along with a positive attitude to the change. In the western world though there is a positive attitude regarding QI implementation, many are less than confident that these indicators can be fully implemented in their daily practice. Lack of time and resources are the most important barriers to the implementation of quality indicators in western ICUs. This is equally true in our country and provision of time and resources to the quality team, which has a knowledge base of QI, is the way forward to overcome the barriers posed in the implementation programs.

The Ten Commandments for successful implementation of QI are (Fig. 1):

1. Set up a Quality team and a leadership capable of providing good governance and capable of making decisions.
2. Understand the needs of the ICU in the hospital where one is working before picking quality parameters (Evaluate for relevance).
3. Initially select parameters that are easy to measure, like Length of stay and device related infection parameters like ventilator-associated pneumonia; catheter associated urinary tract infections. etc. (Select parameters based on evidence, adapted to local needs).
4. Select an appropriate benchmark, use national data if available, local trends if no national data. Some international benchmarks especially for device related infections are easily applicable.
5. Educate staff to ensure adequate knowledge of parameters and quality process, modify attitude and resolve time constraints of staff.

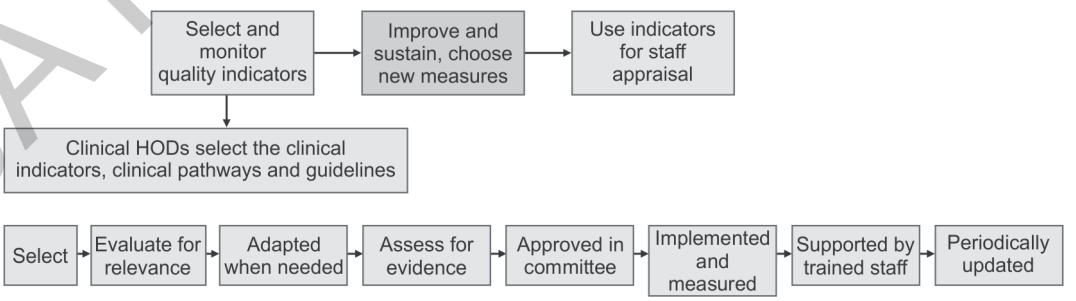

Fig. 1: Implementation flow sheet

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6. Implement and measure the parameters with basic statistical tools.
7. Support the implementation by dedicated staff, who are not limited by time constraints.
8. Analyze and appraise staff about the parameters measured.
9. Periodically update goals based on results.
10. Choose new measures based on need.

CONCLUSION

QI is a never-ending cycle of PDSA cycles, which propels the intensive care units to greater achievements and strives to ensure the best of care to be delivered to the patient. Providing governance so as to focus on quality is one of the many roles of an ICU director. Assembling a staff with knowledge, attitude and time is the key in implementing quality initiatives. Selection of parameters with an action plan to implement and to overcome the barriers is essential for successful QI journey.

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Quality & Safety in Critical Care Medicine

This book titled *Quality and Safety in Critical Care Medicine* is published as part of the 21st Annual Conference of the Indian Society of Critical Care Medicine. The theme of the conference is "Quality, Outreach and Austerity", and this book emphasises the importance given to this topic in the conference. This book on quality and safety is a compilation of articles by experts working in intensive care or in the field of patient safety. The authors have extensively touched upon various practical aspects of Quality and Safety covering almost every aspect of health care delivery including a general outline on Basic Principles of Patient Safety and Quality Indicators, Tools and Strategies for Quality Improvement and Patient Safety, Guideline to Identify and Implement Quality Indicators, Implementation of Quality Indicators in Developing Countries, Role of Human Factor within Patient Safety and Quality, Role of Technology in Patient Safety and Quality, Quality Indicators in Intensive Care Unit and Checklists and SOPs. It is hoped that this book would foster and augment Quality and Safety in the field of Critical Care Medicine in India.



Shivakumar Iyer MD DNB European Diploma in Intensive Care is currently the President of the Indian Society of Critical Care Medicine (ISCCM). He has number of publications to his credit. He has been section editor for critical care in API Textbook of Medicine, and has contributed chapters to course manuals of the basic collaboration as well as other textbooks on different topics, such as nutrition in the critically ill, pulmonary edema and hypoxic-ischemic encephalopathy. He was also one of the editors for the theme book "Safe Practices Save Lives" of CRITICARE 2010, Hyderabad.



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ISBN 978-93-5152-819-7
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