Austrian Inpatient Quality Indicators (A-IQI) -
Measuring the quality of results through routine data

The use of quality management systems in the hospital sector is widespread and the diversity of systems large and the costs of implementing and operating these systems in some cases are considerable. The systems are highly diverse and the main focus usually is not on detailed medical issues.

The generation of data on quality, especially on the quality of the results, in Austria so far is still stuck in its infancy and has been reserved for clinical registers or studies only. These are frequently isolated initiatives and an Austria-wide quality data system collecting, measuring and comparing quality data does not exist to date. Quality activities concerning detailed medical topics have been associated with both intense reporting efforts for the doctors and high cost burdens. Nor have we seen any structured processing of the results of these surveys.

STRATEGIC APPROACH

The A-IQI (Austrian Inpatient Quality Indicators) is a project implemented by the Bundesgesundheitsagentur (Austrian Federal Health Agency) aimed at establishing a nationwide uniform system for measuring the quality of results within the hospitals. A-IQI is based on a quality measurement system from Germany that had originally been implemented within the HELIOS clinics more than ten years ago and continuously improved ever since. In Austria, the province of Lower Austria has taken over the pioneering role in the field of measuring and analysing the quality of results. It was in Lower Austria that the data instrument from Germany was adopted, then "translated" into the Austrian context and implemented step-by-step together including the peer review process. The Austria-wide roll-out of the project began in mid-2011. Utilizing the experience already gained by this federal province, the project benefitted by taking over an already established system and exploiting the synergy effects. The experience already gained in Lower Austria and the know-how already acquired there has clearly facilitated the nationwide implementation within the Federal Ministry of Health. Meanwhile, the A-IQI is enshrined in law and is now mandatory for all hospitals.

A-IQI is a system of key performance indicators (quality indicators) and an analytical tool which combines peer-review processes. (Quality indicators - finding the problem areas, the peer-review processes - analysing the weak points in the system). The indicators are calculated on the basis of routine hospital data which in Austria is the only nationally comparable and complete set of such data. The measurements are made in all hospitals using the exact same method based on a nationally standardized evaluation tool. The quality indicators are defined based on particular medical disorders (e.g. heart attacks) or surgery (e.g. removal of the gallbladder) etc. These include a wide range of common standard treatments, right up to highly complex treatments / medical disorders. A total of 191 individual indicators have been established within the A-IQI initiative, including mortality frequencies, intensive treatment frequencies, occurrence of complications, quantity information, surgical techniques used, as well as prophylactic and process indicators.

Most special and at the heart of the system is the peer-review process. If the indicator results point out statistical deviations, the respective hospital performs a self-analysis which is then followed by an independent analysis performed by "external" trained senior physicians from various special fields, so called “peers”. Finally the medical records are studied on-site at the hospital and analysed according to standardized criteria. Based on this analysis, the external peers and the management of the involved hospital jointly develop quality improvement measures on a collegiate basis. The peer review process is a medical instrument for quality enhancement. It enables a systematic and critical reflection on one’s own performance as well as that of one’s colleagues. This process is carried out by several members of a profession (peers) using a structured process and with the aim of continuously improving the quality of patient care.

The implementation of A-IQI included the following strategic cornerstones: information, control, training, and scientific further development of the performance measurement system.

The following main objectives were defined:
- Involvement of all stakeholders
- Mandatory participation and centralized control
- Structuring and definition of responsibilities
- Direct involvement of the "service providers"
- No additional reporting burden for hospitals
- Establishment as a medical tool
• Nationwide and international comparability
• Optimization of the entire treatment process and sustainability of the improvement process
• Establish an open culture of awareness concerning medical errors
• Stepwise implementation of quality data transparency
• The patient should "feel" some of the effects of the initiative

The project started off by providing extensive information to all stakeholders in the 9 provinces (Medical directorates, hospital operators, and provincial health funds). To control the project an A-IQI office was set up within the Ministry and a steering group with participants from all provincial health funds was convened for taking the essential the essential project decisions. This was followed by the first peer-training sessions aimed at building a pool of peers from different disciplines. A Scientific Advisory Board was also set up in order to further develop the indicator system.

EXECUTION AND IMPLEMENTATION

Following the decision to roll out the A-IQI project nationwide, the first step was to inform all parties concerned. The Ministry of Health and Women's Affairs organized information sessions in all of the federal provinces to answer questions about the quality indicators and the peer-review process.

In developing the A-IQI project strategy, the following three fundamental cornerstones were addressed:
• Control,
• Operational management, and
• Scientific support of the project.

First of all, an office was established within the Ministry of Health and Women's Affairs with competence for the operational management of the project. One of the first tasks was to develop a technical evaluation tool for use throughout Austria. The A-IQI steering group was established for controlling the project, taking basic decisions, and driving further developments. During the design phase it was further decided to involve the ten funds (9 at the provincial level, and 1 for private hospitals) responsible for the interdisciplinary tasks of planning, management and financing of the health care system, including quality agendas.

As a further step, the Main Association of Austrian Social Security Institutions (Hauptverband der österreichischen Sozialversicherungsträger) was nominated to join the steering group. The decision was also made to bring scientific societies on board to promote the quality of the performance measurement system as well as to increase acceptance of the entire A-IQI system. Thus, a Scientific Advisory Board was formed for the development and adaptation of the indicators. In addition to the key decision makers - namely the Ministry of Health and Women’s Affairs, the Provincial Health Funds, and the Main Association of Austrian Social Security Institutions - members were also included from the hospital owners and the hospitals, as well as the scientific accredited organizations of the Austrian Medical Association. The Ministry of Health and Women’s Affairs project office directs the Steering Group and the Scientific Advisory Board and also assumes many operational tasks in the system.

First publication of Austria-wide quality data: the first A-IQI report was published in autumn 2013. This report published the first nationwide results concerning the entire set of indicators. The aim is to provide step-by-step transparency of quality data for the Austrian population.

Improvement of indicator results following the peer-review process: another very important output that shows that A-IQI is reaching the patients is the improvement of the performance results following conduction of the peer-review process. For example, the indicator "preoperative length of stay for hip fractures ", shows a clearly positive trend following the peer-review process meaning that patients are operated more quickly. For the indicators of heart attack, heart failure, stroke and pneumonia improvements could also already be confirmed in Germany. A performance-based quality measurement based on indicators together with a weak-point analysis based on the peer-review process together manage to achieve significant improvements in the results. As a prerequisite, of course, the identified system weaknesses need to be improved.

Clinical Guideline “Treatment of near the hip fractures in patients previously orally treated with anticoagulant medications”: The 16 peer review processes concerning preoperative length of stay for hip fractures showed uncertainties in the use of anticoagulant drugs in the day-to-day treatment. Improvement potentials were identified in the documentation of the medical history, the laboratory analysis of drug-dependent coagulation inhibition, as well as the prescription of vitamin K and coagulant medications and measures. The greatest need for action was identified in the
establishment of a standard for blood coagulation management and thrombosis prophylaxis in multi-morbid patients. The relevant scientific expert groups took this issue up in the first follow-up meeting in autumn 2013 and jointly developed a decision aid for this complex subject. This resulted in a Clinical Guideline "treatment of near the hip fractures in patients previously orally treated with anticoagulant medications" being written in August 2014 which provides support for the treatment process and the associated recurrent complex medical issues. The provision of this Clinical Guideline via an “App” for smartphones makes the desired information quickly and easily retrievable at any time.

Adaptation of the routine hospital data according to the requirements of the quality measurement: on the basis of proposals from the Scientific Advisory Board some adaptations in the Austrian hospital billing system (Austrian DRG-LKF) have already been made. For example, from January 2015 each time a hip operation requires rework (e.g. infection, loosening etc.) must be diagnosed and stated. For example the diagnosis “I64 - stroke unspecified” (i.e. not specified whether ischemia or haemorrhage) can no longer be billed in Austria in order to generate more meaningful indicators concerning strokes. That means that the A-IQI also leads to the continuous further development of the routine hospital data in accordance with the requirements of the quality performance measurements.

To track the results and activities in the project, two different monitoring systems have been implemented: namely the quality indicators results monitoring and the monitoring of the resulting measures.

Are the quality indicator results improving? The monitoring of performance measurement results is concerned with the quality indicators results. If a hospital is selected for a peer-review process based on conspicuousness being noticed in the annual priorities, it will at the same time be selected for performance monitoring. In the process the development of the result of the respective quality indicator is then monitored in accordance with A-IQI office procedures.

What are the hospitals / hospital owners / federal provinces doing with the improvement suggestions coming from the peer-review process? The monitoring of the resulting measures deals exactly with this topic. The procedure defines the improvement measures and related deadlines for implementation which are then documented in writing in a report. After this deadline period has passed, the involved hospital is prompted by its Provincial Health Fund to provide feedback information concerning the degree of implementation of the improvement measure via the use of a standardized monitoring form. The monitoring form contains the general information about the peer-review process, such as the Tracer (indicator, theme) or the peer-review team, as well as all agreed improvement measures. Feedback is required for each improvement measure concerning both the details of the measure and the degree of its implementation, such as:

- Open (reasons why still open, the way forward, the time horizon)
- Work in Process (status of Implementation, the way forward, the time horizon)
- Only partially implemented (for what reasons has the decision not been implemented in full, which parts have been implemented and which are not)
- Implemented (how was the practical implementation done)
- Not implemented (what were the reasons for the decision to not implement the measure)

If no improvement of the quality indicators occurs following a peer-review process (results-monitoring), the first step will be to check the degree of implementation within the resulting measures monitoring system, and as a second step a re-peer-review process can be initiated. The results of the resulting monitoring of measures are to be found in the annual A-IQI report.

**MAIN OBSTACLES**

Data protection: The data utilized within the A-IQI project are very sensitive. For example, mortality rates are presented for specific medical conditions per hospital. At the beginning of the project a great deal of concern was expressed concerning possible data misuse. Due to this situation, each province only received its own results. When Austria-wide results were discussed in order to determine the peer-review process no actual data were delivered, other than only a presentation to the steering group session. Furthermore, the publication of data outside of the A-IQI project, for example for promotional purposes, was strictly prohibited. Overall there were small but essential measures that established trust between the players and ensured a “safe environment” at the start.
Information flow: As in many large-scale projects involving a lot of interested persons the information flow is the greatest challenge. A major problem was to ensure that the essential information about the project was made available to the project basis, namely the senior physicians. This was attempted in the early stages of the project with information sessions. The peer training, which involved selected senior physicians being trained as peers, also contributed to the dissemination of information. Since especially in the peer-review process, a lack of information regarding the preparation, implementation and follow-up existed, checklists were created for all those involved in the process and all necessary documents made freely accessible via the website of the Federal Ministry.

Dissemination of the quality indicators results: Another important and essential factor is the dissemination of the quality indicators results to the hospitals. It was not unusual to find that a senior physician did not know the quality indicator results of "his" house or "his" department until such time when he was informed that a peer-review process would take place in "his" house. The responsible bodies had simply not forwarded this information. It is however only possible to work locally to improve the quality if you know your own results. This situation was unsatisfactory and not very good for the acceptance of the system. Subsequently, several provincial health funds declared themselves ready to pass the evaluation tool to hospitals so that they themselves could calculate the quality indicators at regular intervals. Two provincial health funds have decided to have the results of quality indicators relayed directly from the Federal Ministry of Health and Women's Affairs to the medical directorates and senior physicians. This, too, was very well received. The situation that responsible persons did not receive the necessary data also led to the fact that the data flow and the responsibilities for disclosure are clearly defined in the A-IQi organization manual.

IMPACT AND SUSTAINABILITY

Patients: The main benefit of the project is that patients will demonstrably profit from it. For example, near hip fracture patients are operated sooner. For example, a hospital was subjected to a peer-review process as 20.36% of patients had an elevated preoperative length of stay. Measures monitoring showed that 100% of the agreed improvement measures from the peer-review process had been implemented at the hospital. Result monitoring of the quality indicators results concerning this parameter now give a value of only 9.52% (previously 20.36%) and are thus within the target range.

Total health care system: from a systemic perspective the health system also benefits as a whole. The German Medical Association accompanied the peer-review process in Germany and noted that there was a contribution to the promotion of interdisciplinary cooperation and communication, the growing together of the organization, and self-determined quality development by the medical profession. Furthermore it contributed to individual willingness to learn and competence development, the development of an open culture concerning errors, to effective transfer of knowledge and applicability in everyday life, shared responsibility in the organization (professional and across the hierarchy), and to establishing a learning organization.

Pragmatic system: A further benefit is that a system now exists that is able to identify weaknesses in a non-bureaucratic and cost efficient way. Furthermore, it also manages to highlight the necessary improvements.

Physicians: For the doctors the main benefit is that for the first time they can directly compare their own quality data with nationwide quality data.

Management levels: The management level also experience nearly real-time nationally compared quality data for the first time. (Cases from 2013 were and 2014 are already processed). Since all decision makers are involved the topics can be quickly processed together. Example: In September 2013, a nationwide requirement was identified concerning how to deal with clotting drugs for patients with near hip fractures. Still in September the relevant scientific expert group was commissioned by the Federal Ministry to prepare a Clinical Guideline on this topic. Already in October, the scientific expert group met for the first time. In February 2014, the first draft was presented, which was forwarded to the Health Funds with a request for comments. All of these responses were forwarded in March to the professional associations, who checked them, and, where appropriate, produced a revised version. In May, the "final" Clinical Guideline was presented and then published on the website of the Ministry of Health and Women's Affairs. It hence took less than a year.