



# 1<sup>st</sup> Workshop on Pilot Implementation of the Performance Assessment Tool for quality improvement in Hospitals

Barcelona, Spain, 22 -24 February 2004

Division of Country Support

## ABSTRACT

The objective of this workshop was to organize the pilot implementation of a Performance Assessment Tool for quality improvement in Hospitals (PATH) developed by WHO Europe in a sample of hospitals in six European countries (Belgium, Denmark, France, Lithuania, Poland/Silesia Region and Slovakia) and two countries outside Europe (South Africa/Kwazulu Natal and Canada/Ontario).

The PATH project aims to provide tools to support hospitals in assessing their performance, questioning their own results, and translating them into actions for improvement, or benchmarking. At the workshop, a group of experts in performance assessment and country focal points drawn from hospital managers, physicians, technical experts in information systems, etc., drafted a strategic plan for each participating country, identifying key stakeholders, roles and responsibilities and priorities for action, agreed on recommendations on standard operational definitions of indicators across countries, and discussed data collection issues and data quality control mechanisms. A calendar for implementation was agreed upon.

All participants were aware that comparisons are sensitive and should be interpreted with great caution because of varying local contexts. This is incremented at international level. PATH relies as much as possible on available data to minimize the burden of data collection. A template for data collection is being prepared. Mobilizing staff at all levels will be an important factor to the access of the project.

### Keywords

- QUALITY INDICATORS, HEALTH CARE - standards
- HOSPITALS - standards
- QUALITY OF HEALTH CARE
- INFORMATION SYSTEMS
- DATA COLLECTION – methods
- EUROPE

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## 1. Background

The restructuring of health care services among several European countries aims at increasing accountability, cost-effectiveness, sustainability and quality improvement strategies, and shows a growing interest in patient satisfaction. These reforms highlight a major quest throughout Europe for efficient and high quality hospitals. Decision-makers demand evidence-based policies and management strategies for hospital performance assessment.

The project (including selection of indicators) is built on a strong framework and on robust empirical evidence. It was elaborated by a group of international experts, with support from extensive reviews of the literature (more than 300 indicators initially identified) and a survey in 10 countries on data availability and perceived importance of pre-selected indicators<sup>1</sup>.

This framework for performance assessment encompasses six dimensions: four domains (clinical effectiveness, staff orientation, efficiency and responsive governance) and two transversal perspectives (safety, patient centeredness). This comprehensive and tightly integrated structure is a key feature of the project. For each dimension, indicators were selected based on their importance and usefulness, potential impact and burden of data collection. An operational model details how indicators relate to each other.

## 2. Scope and purpose of the workshop

The objective of the workshop was to organize the PATH pilot implementation in a sample of hospitals in six European countries (Belgium, Denmark, France, Lithuania, Poland/Silesia Region, Slovakia) and two countries outside Europe (South Africa/Kwazulu Natal and Canada/Ontario).

The detailed objectives were to

1. Present PATH objectives and its general framework to representatives of participating countries;
2. Design a strategic plan for each country, agree on roles and responsibilities and priorities for action within each country;
3. Refine the operational plan for pilot implementation and design tools to assess impact of PATH in participating hospitals/countries;
4. Agree on and provide recommendations on standard operational definitions of indicators across countries and discuss data collection issues and data quality control mechanisms;
5. Review educational material developed for hospitals, discuss appropriateness of the balanced dashboard to report results, discuss conditions for benchmarking and how to translate results of assessment into actions for improvement.

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<sup>1</sup> The detailed meeting reports and background papers are available upon request

### 3. Presentation of PATH

#### a) Main features

All participants agreed on the objectives and main features of the PATH project:

- The objective of PATH is to support **hospitals** in assessing their performance, questioning their own results, and translating them into **actions for improvement**.
- PATH does not stand for public reporting, value-based purchasing or any central planning or restructuring of the hospital sector; it is just to be used as a self-assessment tool.
- Hospital participation is strictly **voluntary**.
- Hospitals use uniform **tools** for performance measurement (e.g. indicators, descriptive sheets, balanced dashboard to report individual results) and tools for interpretation (e.g. to identify peer hospitals, potential benchmarks and select their reference points, still to be developed).
- PATH supports both **comparison indicator**' results and benchmarking of **practices**.
- Hospitals are the main stakeholders. Top management but also middle management should be directly involved at all steps of the project, from data collection to interpretation of results and definition of strategies for quality improvement. Large dissemination of the project within participating hospitals is strongly encouraged.
- Collegial support and networking among participating hospitals will be fostered. It is crucial to insure a system for peer learning.

The PATH framework includes 4 steps:

1. **Motivate**: Hospital participation is voluntary. PATH is designed around and for hospitals as the main users. By providing a single tool, PATH aims at motivating hospitals to improve their performance. It supposes hospital's active involvement at all steps.
2. **Measure**: PATH framework relies on 20 indicators in a core set. Countries can pick additional indicators proposed in a tailored set. Operational definitions and recommendations for data collection are provided for indicators in the core set at annex 1.
3. **Make sense**: The use of indicators and performance measurement is considered a prerequisite towards quality improvement but it is not a goal in itself. Indicators do not provide judgment by themselves, they need to be compared to reference points and related to other performance indicators, explanatory variables and surveys of practices. Indicators should be considered as a starting point to question practices.
4. **Move**: Support to quality improvement strategies is the final aim of PATH. It should ultimately impact on actions for quality improvement. A strategy and tools to support change management will be developed, within the PATH framework.

## b) PATH selling points

The motivation to participate can be broadly included into three categories:

- **Revitalize:** Where accreditation schemes are currently in place, PATH is viewed as a tool to further motivate hospitals that have already been accredited and motivate them to go one step forward. From this perspective, the idea of ongoing, continuous quality improvement tools is central.
- **Support** current initiatives and make the most of the data currently collected: Large amount of data is collected but not really used, or there is a tradition of indicators but they are considered to be “old-fashioned” or their scope is limited (activity levels or clinical effectiveness). For instance, in France and Denmark, incorporating indicators in an accreditation scheme is on the agenda.
- **Initiate:** Where there is no formalized quality structure, it is an opportunity for a number of hospitals to embark together upon a quality improvement strategy.

The “selling points” are

- **Quality improvement tool:** The ultimate goal is to support hospitals defining quality improvement strategies by 1) identifying areas for further scrutiny and 2) sharing best practices.
- **Independent:** Participation is strictly voluntary. Hospital-specific results are only for internal use. Hospitals may decide if they wish to share their results and with whom.
- **International:**  
*“Find at what place we are” and “find what we have to do to improve quality in our hospitals”* is in the background of all discussions.

Participating hospitals may compare their own results to international reference points (e.g. cross-national average). All participants to the workshop are aware that international comparisons should be interpreted with great caution because of varying national contexts. Nevertheless, it is viewed as an interesting starting point for discussion and questioning within hospitals.

The international component does not limit itself to international comparisons of indicators results. By joining PATH, hospitals are part of an international network to share best practices for quality improvement. International networking could be fostered using different tools such as e.g. newsletter, list-server, or a web page. From the very start of implementation, hospitals will be invited to share on operational definitions, data collection issues and selection of tailored indicators and to present themselves to each other.

In most participating countries, hospitals have been identified and have agreed to participate to the pilot implementation. There is already great support from the top management. However, discussions highlighted that it is crucial to motivate not only top managers but also the persons in charge of collecting the data and that will use the indicators. Their motivation can be increased by organizing mobilization days within hospitals, calling people out of their routine, and limiting as much as possible the burden of data collection on hospitals. Middle management will have direct access to the newsletter and list server, in order to motivate them to participate to the project.

## 4. Country-specific strategic and operational plans

During the workshop, a plan for implementation was developed for each country, in order to adapt to local specificities. The questions that need to be addressed in each country/region are the following:

### a. Identify the stakeholders

- *Who are the stakeholders?*

Potential stakeholders identified are: individual hospitals, hospital associations, health insurance, local, provincial or national governmental agencies, universities, accreditation agencies, or private contractor.

- *To what extent should they participate?*

Should they play no role or participate passively (increase visibility, provide political support, ensure credibility), or participate actively (take the responsibility of one or several task), or provide punctual technical support?

- *What results will be made available to whom? How will they use it?*

### b. Place PATH in its local context and relate to performance assessment programs and quality improvement initiatives at regional and national level and within each hospital.

- What department will be responsible for piloting PATH within hospitals?
- What indicators are currently used? Can they be incorporated into the PATH framework?
- If applicable, how does PATH relate to accreditation process?

### c. Define areas for close monitoring: What are the priorities for scrutiny? How do they relate to strategic orientations? What indicators in the tailored set do we want to support?

Organizational hospital arrangements vary widely from country to country. This is also represented in the project. For example, in some countries, the Ministry of Health initiates and supports the project, while in other, participation to PATH originates from hospitals themselves and the Ministry of Health is just informed. But it has been agreed by all countries that results are made available only to hospitals and not to health insurance or other administration instances. Countries also vary widely in funds available for the project. The project is also at different stages of implementation. Hence, adaptation to local context is identified as a key success factor and flexibility in implementation is recommended.

## 5. Operational definitions for indicators and data collection issues

Data quality, comparability of data and burden of data collection were recurrent themes in all discussions. It was argued that

- if data are of poor quality, the indicator would be perceived as useless, it might jeopardize the credibility of the project, and vanish motivation,
- operational definition might be very contextual and a same indicator could have different meanings in different countries,

- a lot of data are already collected within hospitals and additional burden on data collection should not be put.

It was concluded that

- One should not be obsessed by data. We have to acknowledge that perfect data may not be realistic and that all data have its flaws. But it certainly does not render the whole process useless. Improved data collection will be an added value to the project. The key interest is in the interpretation and in the use of the indicators.
- Technical experts working on data collection will report on data quality when transmitting it (on a scale from 1 to 10, for instance). They might use a meta-indicator to support this judgment or describe quality control mechanisms in place.
- As there will not be any external control on data in the PATH framework, it should be made very clear to hospitals that ensuring data quality is on their own advantage and will provide a better basis on which to build an assessment and quality improvement strategies.
- Hospitals should start collecting data and use it to build indicators. With the use of the data, its quality will grow.
- Indicators should only be considered as flag. There is no judgment on hospitals. Assessment is made by comparison with a reference point or target.
- Hospitals are going to be supported to choose reference points that will make sense to them. Reference points could be international but also national or their own previous results (longitudinal approach). Strategies will be developed to support hospitals in identifying peers not only based on structural characteristics but also on activities.
- International comparisons should only be done when considered useful. When reporting such comparisons, the context should be shortly described to enable interpretation of any difference.
- When data is already available in national databases, it could be provided to the hospitals by the central agency (e.g. health insurance) that is managing the national database to avoid unnecessary burden on hospitals.
- If the data is not collected, simplicity is the rule. Always choose most simple data collection tools. Data collected on a short time frame (e.g. one point prevalence study) often are very informative and present a low cost alternative to setting up special registers for continuous monitoring.
- Ongoing development should be stressed. PATH is also an opportunity to identify priority areas for further development of information systems.

Data and indicators should not be over-emphasized. It is only one part of the PATH framework. PATH is an opportunity to disseminate values such as adaptability and change, accountability towards patients or team working for instance. It is also an opportunity to enter an international network of hospitals and share best practices.

The initial list of core indicators was agreed upon (see appendix 1) with few exceptions:

- The indicator on discharge letter (*dimension: responsive governance*) is moved to the tailored set of indicators because its formalization is very contextual. Differing means of integration of care are used in the countries. One approach, i.e. discharge letter to general practitioner, cannot be preferred to providing written information to the patient. The indicator

is renamed “printed discharge information for continuity transmitted to patient or referring physician”.

- The indicator on waiting list management (*dimension: responsive governance*) is moved to the tailored list of indicators because waiting list is not an issue in all countries. Tracer procedures are coronary artery bypass graft, surgery for breast cancer, cataract surgery and hip replacement. Waiting time is to be calculated from the moment the decision to operate is taken.
- Recording of sentinel events (*dimension: patient safety*) is also very contextual and the number of events recorded was thought to have little meaning because of very low occurrence of such events and low reliability. Hence, a structural indicator on whether or not formal systems are implemented to ensure reporting of adverse events (and that they are acted upon) is preferred to the actual number of sentinel events reported.
- An indicator on informed consent (*dimension: responsive governance*) should be added to the core list of indicator to cover the sub-dimension on ethics (with a patient centeredness perspective). Specific items to include in patient surveys will be proposed. In the tailored set, one could measure the proportion of patient undergoing elective invasive surgery for which a signed written informed consent is available in the patient record.
- A specific indicator on wastage of blood product (*dimension: efficiency*) is proposed. It replaces average inventory in stock for blood products. Average inventory in stock will only be computed for pharmaceuticals.

When relevant, clinical indicators will be adjusted only for differences in age (by categories) and sex. Risk adjustment will be done by WHO, based on hospital data aggregated by age and sex categories. In the frame of this project it is not possible to adjust for comorbidities or for severity. A fine risk-adjustment procedure is suggested as tailored indicator, to be calculated within the countries. Results could be distributed with a comment of a specialist physician that describe all the factors that can explain outcomes for the specific tracer condition or procedure and very precisely identify all potential sources of variations (quality or not).

It was agreed that tracer conditions and procedures will be identified based on the work by the Hospital Data Project. Both ICD-9 and ICD-10 are used in the participating countries. All patients transferred to/from other acute care settings are excluded from calculation of three clinical indicators (mortality, readmission, length of stay). But transfer rate is considered an interesting measure that indicates reputation and potential bias due to exclusion of transferred patients. It needs to be analyzed simultaneously.

## 6. Conclusion

### a) Timetable

All participants reiterated their interest to participate in the pilot implementation of PATH.

The calendar was amended and agreed upon by all participants (table 1). The deadlines for the first steps (selection of coordination team, identification of participating hospitals, verification of data availability) could be slightly adapted to the contexts. But October 30<sup>th</sup> is considered as the crucial deadline. By this date, the coordination team will have sent all data to WHO.

Table 1: Timetable

<i>Deadline</i>	<i>Task</i>
Nov. – Dec. 2003	Selection of a Coordination Team and identification of potential participating hospitals
January 2004	Workshop in Barcelona to provide operational definitions for each indicator, identify challenges with data collection, and build standard procedure for data collection. Participants to the workshop: experts in performance measurement tools and information systems, members of the Coordination Team
February 2004	Participating hospitals identified and local coordinator appointed within each hospitals Dissemination to participating hospitals of the philosophy of the project and data collection issues, by the Coordination Taskforce, using WHO educational material
Feb. – March 2004	Verification of data availability Selection of indicators in tailored set Data collection mechanisms set up, when necessary
Apr.1 – Oct. 30 2004	Data collection (Hospitals, under supervision of Coordination Team, with technical support of WHO, upon request). <u>Note:</u> for some indicators, tool development may require more time (e.g. patient survey) and, hence, data collection will be more limited in time
December 2004	Hospital specific results are directly reported to hospitals through individual dashboards
January 2005	Individual appropriation of results within hospitals: how to make sense out of them?
February 2005	Workshops within countries with participating hospitals to share experiences (e.g. present quality improvement strategies that may explain very good indicators in a field) Initiation of benchmarking network
March 2005	Workshop in Barcelona Focus group: sharing the experience + potential amendments of the overall framework for further expansion to the European region

## **b) Roles and responsibilities of different partners**

The different partners are

- The coordination team for the country / region
- Participating hospitals
- Central agencies (e.g. accreditation organism, Ministry of health)
- WHO regional office for Europe

Their roles and responsibilities are described at table 2.

Table 2: Roles and responsibilities of the different partners

Partner	Functions
Coordination team for the country / region	<p>Terms of reference and skills required</p> <ul style="list-style-type: none"> <li>- <b>Leadership</b>: motivates hospitals to participate to PATH, maximizes visibility of the PATH project, safeguards the respect of the PATH philosophy</li> <li>- <b>Technical expertise</b>: supports uniform data collection (guidelines, training, workshop?), centralizes, cleans &amp; aggregates data, provides or delegates training in hospitals if required, insures translation of support material if required</li> <li>- <b>National management role</b>: training to understand, use, and make maximum use of indicators, fosters comparison of practices, centralizes and disseminates best practices</li> </ul> <p>Composition: <i>to be defined on a case by case basis</i></p> <ul style="list-style-type: none"> <li>- <b>Research institute support</b> (e.g. university, accreditation agency, research/study dept of Ministry of Health) because of its neutrality, credibility, technical skills (e.g. compute indicators), training skills</li> <li>- <b>Political support</b> because can be a leadership figure, increase visibility of the project, provide funding opportunities, assure coherence with national/regional policies. But it should be assured that there is no hidden agenda or that it is not perceived so by participating hospitals.</li> <li>- <b>Hospital support</b>: because it safeguards feasibility, peers credibility and acceptance</li> </ul>
Participating hospitals	<ul style="list-style-type: none"> <li>- Responsible for data collection and data quality control (but may delegate)</li> <li>- Disseminate results within the organisation</li> <li>- Foster discussion of results and their use for quality improvement, within the organisation and with other participating hospitals</li> <li>- Investigate indicators with seemingly very high or very low values</li> <li>- Report quality improvement strategies to coordination team</li> <li>- Ideally, one contact person within each hospital should fluently understand, write and speak English</li> </ul>
Central agencies	<p>E.g. accreditation organism, Ministry of health</p> <ul style="list-style-type: none"> <li>- Supports the initiative and facilitates the work of participating hospitals and of the coordination team</li> <li>- Does not ensure a direct control on the project</li> </ul>
WHO regional office for Europe	<ul style="list-style-type: none"> <li>- Proposes to individual hospitals a tool for reporting the data collected</li> <li>- Computes indicators, ensures basic statistical standardization of indicators, when appropriate (e.g. mortality rates)</li> <li>- Designs dashboard templates, with collaboration of coordination team</li> <li>- Produces dashboards for the participating hospitals</li> <li>- Evaluates the tool for assessing hospital performance and facilitating quality improvement strategies</li> </ul>

### c) Recommendations / actions:

It is essential that all stakeholders participating to PATH adhere to its philosophy and basic principles (see section 3. a.). At the national or regional level, members of the coordination team may decide to formalize it into a written document or “gentleman agreement” to be signed by the participants.

The questions on country specific strategies (see section 4.) were partly answered during the workshop. Participants will send to WHO a list of the members of the coordination team, of participating hospitals, and of tailored indicators selected. They will also finalize the strategic and operational plan drafted during the workshop, based on the questions above, and write terms of reference for members of the coordination team, hospitals, and any other stakeholder directly involved in the process. It is extremely important to clearly define roles and responsibilities of all participants to PATH.

At national level, the coordination team will review all the operational definitions and refine them according to the local context, when necessary. WHO will support them in this process and will centralize operational definitions used within the countries. The coordination team and the contact persons within hospitals will be able to exchange on operational definitions and data collection issues through a list server.

WHO will provide a list of the material that needs to be translated. The design of the template for data collection of core indicators is also a priority.

## Appendix 1: Operational definitions and data collection for indicators in the core set

<p><b>Absenteeism</b></p> <p><b>a. Numerator:</b> Number of days of medically or non-medically justified absence for less seven days or less in a row (short-term absenteeism) or 30 days or more (long-term absenteeism), excluding holidays, among nurses and nurse assistants</p> <p><b>b. Denominator:</b> Total equivalent full time nurses and nurses assistants * number contractual days per year for a full-time staff (e.g. 250)</p> <p><b>c. Definitions:</b> Absenteeism is referred herein as failure of employees to report for work when they are scheduled to work. Employees who are away from work on recognized holidays, vacations, approved leaves of absence, or leaves of absence allowed for under the collective agreement provisions would not be included<sup>1</sup>.</p> <ul style="list-style-type: none"> <li>- Short-term absenteeism: from 1 to 7 days (version 1) and from 2 to 7 days (version 2)</li> <li>- Long-term absenteeism: more than 30 days to 1 year</li> </ul> <p><b>d. Stratification</b></p> <ul style="list-style-type: none"> <li>- Collect data by age, sex and qualification (nurse or assistant)</li> <li>- Age categories: under 40, 40-55, over 55 years</li> </ul> <p><b>e. Exclusion criteria:</b></p> <ul style="list-style-type: none"> <li>- This indicator is measured only for nurses and nurse assistants. Administrative and support staff and physicians are not considered.</li> <li>- For long-term absenteeism, maternity leaves, including preventive leaves, are excluded because of different legislations and it is out of hospital's influence (though in some instance, staff is relocated to activities compatible with pregnancy and preventive leave and hence long-term absenteeism is avoided).</li> <li>- However, sick leave during pregnancy is included.</li> </ul> <p><b>f. Data collection:</b> retrospective longitudinal administrative data for calendar 2003</p>
<p><b>Excessive hours worked</b></p> <p><i>Excessive weekly working time:</i> Version A1: proportion of week worked over 48 hours Version A2: proportion of week worked over 60 hours Version A3: proportion of week worked over 150% regular working time according to national legislation</p> <p><b>a. Numerator:</b> for each week, number of full-time staff (nurses and nurse assistant) who worked more than 48 (or 60 or 150% of regulation), summed up on all the weeks in the period under study</p> <p><b>b. Denominator:</b> total number of weeks during observation * number of full-time employees</p> <p><b>c. Inclusion criteria:</b> Limit to nurses and nurse assistants/aids. Include only hospital employee (exclude working hours contracted through temporary work agency)</p> <p><b>d. Data collection:</b> Undertake a retrospective study of the percent of weeks worked more than 48 hours during the period from January to March 2004. If hospitals have to collect the information manually, they might choose a shorter time period for collection.</p>
<p><b>Work-related injuries: Occupational percutaneous exposure (PCE)</b></p> <p><b>a. Numerator:</b> Number of case of percutaneous injuries reported in the official database or occupational medicine register in one year (includes needlestick injuries and sharp devices injuries)</p> <p><b>b. Denominator:</b> Average number of full-time equivalent staff and non-salaried physicians</p> <p><b>c. Exclusion criteria:</b> None</p> <p><b>d. Data source:</b> Routinely collected data in 2003 in 1 of the 2 databanks mentioned above</p>

e. **Comment:** Encourage one-point survey for data quality control

#### **Budget for health promotion activities aimed at staff**

- a. **Numerator:** direct cost for all activities dedicated to staff health promotion (as per list) set up in 2003.
- b. **Denominator:** total salary expenditures
- c. **Definitions:**
- According to the WHO Ottawa Charter, “*Health promotion is the process of enabling people to increase control over, and to improve, their health*”
  - Areas of health promotion activities: 1) health screening, 2) promoting healthy behaviour, 3) organizational interventions, 4) safety/physical environment, 5) social and welfare. Illustrations: worksite smoking cessation programs, stress –related programs, musculoskeletal disorders, alcohol cessation activities, nutrition and physical exercise.
- d. **Inclusion criteria:**
- For the purpose of this indicator, we only include area 2. Areas 3 and 4 (in)directly deal with staff safety indicators such as % job descriptions with risk assessment of job and work-related injuries (percutaneous injuries or mucocutaneous exposure). Health screening is also excluded.

#### **Training expenditures**

- a. **Indicator 1:** total expenses for training / total salary expenditures
- b. **Indicator 2:** number of employee who benefited from training / total number of employees
- c. **Inclusion criteria / stratification** for professional categories?
- d. **Definitions:** include only formal training

#### **Mortality, for selected tracer conditions and procedures**

- a. **Numerator:**  
Core basket: Total number of patients admitted for a specific tracer condition or procedure who died *during their hospital stay*  
Tailored basket: Total number of patients admitted for a specific tracer condition or procedure who died *during a fixed follow-up period*
- b. **Denominator:** Total number of patients admitted for tracer condition or procedure
- c. **Tracer conditions and procedures:** stroke (to be restricted to very specific ICD-9 and ICD-10 codes to increase homogeneity of case-mix), Acute Myocardial Infarction (AMI), hip fracture, community-acquired pneumonia (*note: depends on the level of severity, for simplicity of data collection, includes patient in intensive care units*), Coronary Artery Bypass Graft (CABG) (*note: not relevant in all hospitals*), Total hip replacement  
 Maternal and neonatal mortality are included in a tailored basket for use in South Africa  
 Tracer condition is identified using only the principal or primary diagnosis code
- d. **Exclusion criteria:** patients transferred to / from other hospitals  
 Transfer rates and – ideally – destination should be reported simultaneously as a proxy for case-mix and for reputation  
 For acute myocardial infarction, it might be interesting to specifically study for patients transferred in (i.e. patients referred to tertiary care hospitals from lower level hospital) (in tailored set?)
- e. **Risk-adjustment:** AGE, SEX

#### Admission after day surgery, for selected tracer procedures

- a. Numerator:** Number of patients undergoing a tracer procedure who have a discharge intention of one day
- b. Denominator:** Total number of patients who have an operation/procedure performed in the day procedure facility
- c. Tracer procedures:** cataract surgery, knee arthroscopy, inguinal hernia, curettage of the uterus, tonsillectomy and/or adenoidectomy, cholecystectomy, tube ligation, varicose veins – stripping and ligation
- Those tracer procedures cover most of the specialties with a high volume and represent different level of innovativeness
- The same tracer procedures are used for the indicator “rate of one-day surgery”
- d. Definitions:**
- Identification of day-surgery patient is left for local determination. In some countries, day-surgery patients are attributed a specific code on admission and hence can easily be identified from database. In other countries, a special register will need to be set up.
- Early readmission: patients not discharged. They are transferred directly from the day procedure facility to an overnight facility or indirectly through an observation facility first. They are not discharged between the end of surgery and admission to hospitalization unit.
- Late readmission: Patients who were discharged following surgery and are-admitted within 72 hours after discharge.
- e. Exclusion criteria:** Because of data collection issues, and because it is more meaningful from a clinical point of view, only early readmission are included in this indicator. The patient is not discharged home before admission to inpatient acute care facility. Unplanned admission within 72 hours of discharge is proposed as a tailored indicator.
- Only admission to the hospital where the day-surgery took place are included.

#### Readmission, for selected tracer conditions or procedures

- a. Numerator:** Total number of patients admitted through the emergency department after discharge –within a fixed follow-up period– from the same hospital and with a readmission diagnosis relevant to the initial care.
- b. Denominator:** Total number of patients admitted for selected tracer condition
- c. Tracer procedures and conditions:** acute myocardial infarction (30 days), community-acquired pneumonia (30 days), asthma (24 hours and 24 to 72 hours), diabetes (24 hours and 24 to 72 hours) , hysterectomy, total hip replacement.
- In the tailored set, a global indicator on surgery patients could be included (of specific financial interest for Poland because the second admission is not reimbursed).
- South Africa will also include a specific indicator for HIV patients.
- Tracer condition is identified using only the principal or primary diagnosis code
- d. Inclusion/exclusion criteria:** Patients who died during the index hospitalization or who were discharged to another acute care hospital are excluded from the numerator.
- To be considered as a readmission, four conditions must be met: 1) diagnoses or procedure that was considered relevant to the initial care, 2) subsequent emergent or urgent admission (non elective), 3) the time between the discharge after the initial episode and the admission for the subsequent hospitalization lies within a specified time period defined by an expert panel, 4) the initial episode did not end with the patient signing himself out against medical advice (or died).
- We propose to drop condition 4 because of the burden of data collection and –to some extent– it is hospital’s responsibility to encourage patients to stay as long as required. Second, a proxy for emergent or urgent readmission is to include only readmissions through the emergency department.
- Other potential exclusion criteria: patients already receiving continuous care at a primary care clinic, chemotherapy or radiotherapy; residing in or planned to go to nursing home; admitted only to undergo a procedure. Those criteria are not used in the PATH core indicator but could provide interesting tracks for tailored indicators.
- e. Risk-adjustment:** It was decided by the working group not to adjust for difference sin age or sex because it may represent bad selection of patients for day surgery.

#### Return to higher level of care within 48 hours

- a. Numerator:** Total number of patients in the denominator who are *unexpectedly* (once or several times) transferred to a higher level of care (intensive care or intermediary care) within 48 hours (or 72 hours to account for week-end effect) of their discharge from a high level of care to an acute care ward
- b. Denominator:** Total number of patients in the acute care ward who were previously in an intensive care unit or an intermediary care unit and underwent an elective surgery
- c. Exclusion criteria:** Readmissions for further planned operations should be eliminated from the numerator (but difficult to identify with current information systems)
- d. Risk adjustment:** AGE, SEX
- e. Comment:** Several levels of intensive care are coexisting. It is therefore suggested to replace the term “intensive care” to “higher level of care” and to use acute care ward as reference points. The definition of “higher level of care” is left for local determination. The focus is not on patients entering the intensive care but the patients exiting the acute care ward to return to intermediary or intensive care.

#### Caesarean section

##### a. Definitions

Three definitions were originally proposed to the working group:

Version A: Primary Caesarean section delivery rate

*Numerator:* cases within the denominator with first time Caesarean section

*Denominator:* includes first time deliveries; excludes day-surgery patients & general exclusion criteria

Version B: Vaginal delivery after Caesarean section

*Numerator:* Number of vaginal birth in women with a diagnosis of previous Caesarean section

*Denominator:* All deliveries with a previous Caesarean section diagnosis in any diagnosis field

Version C: Total Caesarean section delivery rate

*Numerator:* Number of Caesarean sections

*Denominator:* All deliveries

##### b. Comments:

Though version A is theoretically preferred be indicator because efforts to reduce C-section delivery should focus on reducing the number of primary C-section delivery, it was decided to include only version C in the core set of indicators, to simplify data collection. Version A is highly recommended in the tailored set of indicators.

A strong selection bias is expected. For instance, in France, three levels of maternity are defined and the proportion of C-section is expected to vary widely between those levels. It will be crucial to identify such structural differences to compare only maternity treating patients with similar complexity.

#### Antibiotic prophylaxis use, for selected tracer procedures

**a. Core indicator:** Antibiotics prophylaxis administration in accordance with guidelines (timing, dosage, choice of agent) for selected tracer operative procedures

##### b. Numerator:

Version 1: Total number of audited medical records with evidence of over-use of antibiotics (too early and/or too long, too high dose, too broad spectrum) in comparison with hospital’s guidelines

Version 2: Total number of audited records with evidence of under-use of antibiotics (too late, too early termination, too low doses, narrow spectrum where broad spectrum would have been required) in comparison with hospital’s guidelines

**c. Denominator:** Total number of medical record audited for a specific tracer operative procedure

**d. Exclusion/inclusion criteria:** Excluded if evidence of pre-operative infection

##### Tracer procedures:

In the core set: colorectal scheduled surgery for colorectal cancer, coronary artery bypass graft, hip replacement.

In the tailored set: dental extraction for bacterial endocatitis, elective c-section

Hospitals are advised to add some more tracer conditions (e.g. community-acquired pneumonia) in the tailored set.

This indicator is limited to a number of operative tracer procedures for there is strong evidence to support prophylaxis antibiotics. The tracer procedures will be defined in a further step of the project. For each selected procedure, medical records are sampled and audited by trained professional.

##### f. Comments:

Conformity is assessed against hospital’s own guidelines. Hence, a prerequisite is that hospitals set up

guidelines for the procedures in the core set.

In some hospitals, the data is readily available in pharmacy database. In some others, medical records will need to be audited.

The number of records audited does not have to be too high. It is important to keep the burden of data collection to a minimum. The objective is not to have statistically significant results. Outlier hospitals will need to go back to the records and audit more to assess if the outlier status is due to random variation.

#### **Inventory in stock**

Full description: Average number of days inventoried supplies are held in inventory, for tracer categories

- a. **Numerator:** Total value of inventory at the end of the year for pharmaceuticals
- b. **Denominator:** Total expenditures for pharmaceuticals during the year / 365
- c. **Collection period:** latest administrative year available
- d. **Comments:**
  - Data on blood wastage is readily available. Hence, remove blood products from the definition of the indicator on inventory in stock and build a specific indicator for blood wastage. It is computed using 2003 data (latest administrative year available)
  - Surgical disposable equipment is removed from the original definition of this indicator
  - Include chemo-therapy drugs
  - Pharmaceuticals are purchased regionally.

#### **Length of stay, for selected tracer conditions or procedures**

- a. **Definition:** Median number of days of hospitalization (admission and discharge date count for one day) for selected tracer conditions and procedures
- b. **Tracer conditions:** This indicator is limited to a number of tracer procedures. A specific indicator is computed for each tracer procedure. All indicators are then aggregated in a global indicator.  
Preference is given to elective, schedules procedures  
Core tracers: uncomplicated delivery, hysterectomy  
Tailored tracers: stroke (limited to one specific code to limit to a more homogenous group of patients), acute myocardial infarction, hip fracture  
In the tailored, a global indicator on elective surgery may be incorporated as a tailored indicator.  
Tracer condition is identified using only the principal or primary diagnosis code
- c. **Exclusion criteria:** patients transferred to / from other hospitals  
Transfer rates and – ideally – destination should be reported simultaneously as a proxy for case-mix.
- d. **Comments:** In hospitals with long-term care units such as geriatric care, only days in high level of care (intensive, intermediary or acute care) should be included in the calculation of the indicator.
- e. **Complementary measure:** Length of stay before the first procedure, for elective surgery

#### **Intensity of surgical theatre use**

- a. **Numerator:** Number of patient hours under anesthesia
- b. **Denominator:** Number of theatres \* 24 hours
- c. **Comments:**
  - Unit of measurement of the proposed indicator (surgical theatre unused session) is unclear and varies (hours/time, theatre use, and salaries) and hence the definition has been changed by the working group
- d. **Data collection:**
  - Data is not readily available
  - Data will be collected prospectively over 1 week during April-May 2004
  - Report on both elective and emergency surgery
  - Delivery room is left for local determination for each country to report on or not (separately, if possible)
  - Recovery room are not counted as surgical theatres

#### Day surgery rate, for selected tracer procedures

- a. Numerator:** Number of patients undergoing a tracer procedure who have a discharge intention of one day
- b. Denominator:** Total number of patients undergoing a tracer procedure
- c. Tracer procedures:** cataract surgery, knee arthroscopy, inguinal hernia, curettage of the uterus, tonsillectomy and/or adenoidectomy, cholecystectomy, tube ligation, varicose veins – stripping and ligation
- Those tracer procedures cover most of the specialties with a high volume and represent different level of innovativeness
- The same tracer procedures are used for the indicator “admission after one-day surgery”
- d. Definitions:** There is a clear need for defining “day surgery” to increase comparability of day surgery statistics.
- “Day surgery is the admission of selected patients to a hospital for a planned surgical procedure, returning home on the same day. True day surgery patients are day case patients who require full operating theatre facilities and/or general anaesthetic, and any day cases not included as outpatient or endoscopy (...) Minor day cases are day case patients who generally do not require full operating theatre facilities or general anaesthetic for example, patients having endoscopies or colonoscopies and many, but not all, pain relief procedures and minor surgery<sup>2</sup>.”
  - Alternative definition: “Day surgery is defined as planned surgical procedures carried out in a hospital, where the patient does not stay for more than twelve hours”. Cut-off may be extended to 23 hours in special extended care facilities.
- Difficulties regarding uniform definitions may be partly overcome by proper selection of tracer procedures: focusing on “true day surgery” and avoiding too broad surgical categories. Moreover a glossary of terms should be developed to define outpatient – ambulatory – one-day surgery. All indicators based on one-day surgery (admission following day surgery, rate of day surgery and cancellation of day surgery) must rely on the same definitions, tracer procedures and inclusion/exclusion criteria.
- It was decided by the working group that determination of day-surgery patient is left for local determination. In some countries, day-surgery patients are attributed a specific code on admission and hence can easily be identified from database. In other countries, a special register will need to be set up.
- e. Inclusion/exclusion criteria:** Limit to elective procedures, exclude emergency procedures and patients who died.

#### Breastfeeding at discharge

- f. Numerator:** Total number of mother included in the denominator breastfeeding at discharge
- g. Denominator:** Total number of delivery fulfilling criteria for inclusion
- h. Inclusion criteria:** Singleton, born at greater or equal to 37 weeks gestation, weight greater than or equal to 2500 grams at birth, 5-minute Apgar score greater than or equal to 5, neither mother nor infant has a medical condition for which breastfeeding is contraindicated (e.g. HIV).
- i. Definitions:** To be determined: exclusive breastfeeding only or include partial breastfeeding?
- j. Data collection:** Breastfeeding may be extracted from the kitchen information system because breastfeeding women receive a different diet. If routine data is not available, hospitals could have a survey on all women discharged during a week or a month, preferably in April-May 2004.
- k. Comment:** Average length of stay strongly differs and it could impact the results. For extremely short length of stay, breastfeeding should have been initiated.

#### Last minute cancelled surgery

*Sub-indicator 1:* cancelled one day surgery on day of surgery

*Sub-indicator 2:* last minute cancelled surgery for inpatient admission

- a. Numerator:** Total number of patients who had their surgery cancelled or postponed during the period under study and who meet inclusion criteria
- b. Denominator:** Total number of patient admitted for surgery during the period under study and who meet inclusion criteria
- c. Inclusion criteria:**

<sup>2</sup> NHS Department of Health. Day surgery: operational guide. 2002 available at [www.doh.gov.uk/daysurgery](http://www.doh.gov.uk/daysurgery)

**For inpatient**, include all elective surgery (use of operating theatre), include both cancellations for clinical and non-clinical reasons, postponed to more than 24 hours. Specifically cover tracer procedures used for other performance indicators (e.g. readmission, mortality).

**For ambulatory procedures**, include both cancellations for clinical and non-clinical reasons, limit to “last minute” cancellations (see NHS definition), limit to tracer procedures used for the indicator on admission after day surgery and rate of one-day surgery.

d. **Definition**

A last minute cancellation is a cancellation on the day the patient is due to arrive, after the patient has arrived in hospital, or on the day of scheduled operation. This includes telephone cancellations made on the day of their operation or day of admission. An operation which is re-scheduled to a time within 24 hours of the original scheduled operation is considered as a postponement and not a cancellation

e. **Data collection:** Undertake prospective survey during one month (for day surgery), preferably during April-May 2004 (to avoid holidays)

**Patient surveys**

Continue to use current survey tools to assess patient satisfaction and patient experience

Point prevalence post-discharge study is preferred to exit surveys

Each team will undertake an review of the surveys available in the country

WHO will assist countries that need assistance to develop or refine their tools by providing evidence on existing standardized instruments

## Appendix 2: Tailored set of indicators

1. Door to needle time
2. Pct. patients with CT scan (3 hours) after stroke
3. Pct. AMI patients discharged on aspirin
4. Rate of pressure ulcers (for stroke and fracture patients)
5. Rate of nosocomial infections
6. Result of audit of length of stay using the Appropriateness Evaluation Protocol (AEP) (European version)
7. Dosage units or cost of antibiotics per patient days, for specified patient categories
8. Cost of corporate services per patient day
9. Cash-Flow/Debt
10. Pct. wages paid on time or average delay for wages payments
11. Results of staff survey on job content
12. Pct. job description with risk assessment
13. Results staff survey on organizational climate
14. Staff turnover rate
15. Work-related injuries by type
16. Number on assault on staff (for at risk departments)
17. Result of audit of discharge preparation
18. Result of AEP for geriatric patients
19. Average score on patient on perceived financial access
20. Pct. AMI and CHF patients with lifestyle counseling (audit) documented in patient record
21. Average score on patient survey items on physical access
22. Average score on patient survey items on basic amenities
23. Discharge letters
24. Waiting list management for selected tracers

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