

Developing, customizing, and applying clinical performance data: Tools for hospitals in Asia and Europe to meet local needs of accountability and performance improvement

Karol G. Wicker, MHS
International Quality Indicator Project
Maryland Hospital Association's Center for Performance Sciences
Nikolas Matthes, MD, PhD, MPH, MSc
International Quality Indicator Project
Johns Hopkins Bloomberg School of Public Health

APHA 132nd Annual Meeting
Washington DC Tuesday 09 November 2004
Abstract #82135

Quality Indicator Project (QI Project)

- Maryland 1985: QI Project began as a voluntary pilot project
- Expanded to state-wide and national participation in the USA
- Expanded to international participation beginning in 1991

Page 2

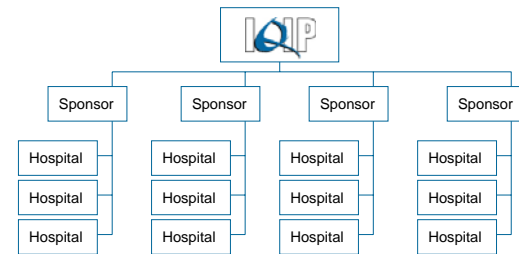
International Quality Indicator Project (IQIP)

- The International Quality Indicator Project (IQIP) was created in 1997 to focus on the specific and diverse needs of international participants

Clinical Performance Indicator Set	Number of Measures
Acute Inpatient and Ambulatory Care	325
Psychiatric Care	124
Long Term Care	49
Home Care	34

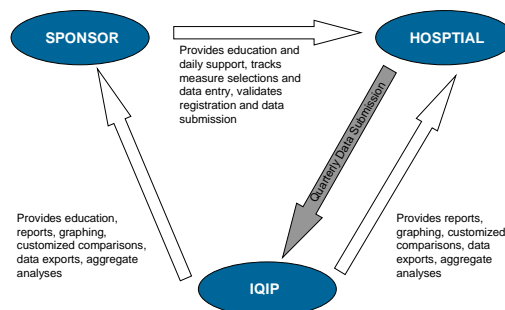
Page 3

Participation Model



Page 4

Participation Model



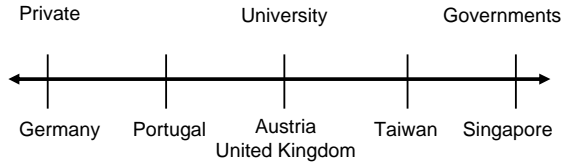
Page 5

Key IQIP Components

- Education and user-group meetings
- Manuals and training
- Case studies, benchmarking, and networking
- Web-based data entry software
 - Data entry
 - Reporting
 - Graphing

Page 6

Types of Sponsors



Page 7

Agendas of Local Partners

- Educate front-line staff
- Implement internal performance improvement
- Promote a culture of quality
- Promote application of evidence-based medicine
- Create and encourage accountability
 - Patients
 - Payors
 - Regulators
- Customize analyses
- Ownership

Page 8

IQIP Software Tools for Agendas

- Translations
- Tracking
- Reporting

Page 9

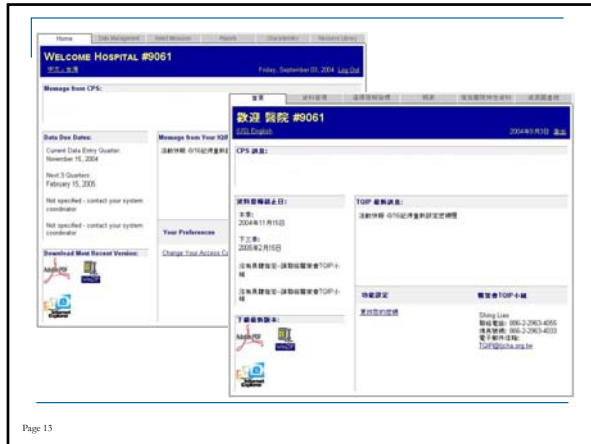
Translations

- Labels
- Software translation per sponsor
- Dates and data formats

Page 10

Page 11

Page 12



Page 13

IQIP Language Functions

- Allots ownership
- Facilitates education of front-line staff
- Creates accountability: secures data completeness and data quality

Page 14

IQIP Tracking Functions

- Measure selection
- Data entry

Page 15

MEASURE TRACKING

Select Quarter: [20 2004] [OK] *Data prior to 20 2001 have been archived. Contact IQIP to access archived data.

Indicator Set: Acute Care [OK]

FACILITY	SELECTED MEASURES	COMPLETED MEASURES	INCOMPLETE MEASURES
9000	91	80	11
9001	163	163	0
9002	165	140	25
9003	144	120	24
9004	215	203	12
9005	87	0	87
9006	79	0	79
11029	10	0	10

Page 16

MEASURE TRACKING

Select Quarter: [20 2004] [OK] *Data prior to 20 2001 have been archived. Contact IQIP to access archived data.

Indicator Set: Acute Care [OK]

FACILITY 9001

Measure ID	Description	Status
19-2	Central line-associated bloodstream infections in the CCU	Complete
19-4	Central line-associated bloodstream infections in the MSICU	Complete
19-7	Ventilator-associated pneumonia in the CCU	
19-9	Ventilator-associated pneumonia in the MSICU	
19-12	Systematic, judicious antibiotic catheter use in the CCU	
19-14	Systematic, judicious antibiotic catheter use in the MSICU	
19-2	Central line use in the CCU	
19-4	Central line use in the MSICU	
19-7	Ventilator use in the CCU	
19-9	Ventilator use in the MSICU	
19-12	Indwelling urinary catheter use in the CCU	
19-14	Indwelling urinary catheter use in the MSICU	

FACILITY 9004

Measure: 6.3 Total C-sections

Year	Month	Number of C-sections (primary C-sections + repeat C-sections)	Number of deliveries	Rate
2004	Apr	46	146	31.51
	May	66	189	34.92
	Jun	40	173	23.12

Page 17

IQIP Tracking Functions

- Creates accountability: secures data completeness and data quality
- Enables identification of problem areas that need to be addressed: data collection/completeness strategies

Page 18

IQIP Reporting Functions

- Data graphing and exporting
- Quarterly Reports
- Aggregate Analysis Reports
- Peer group reporting

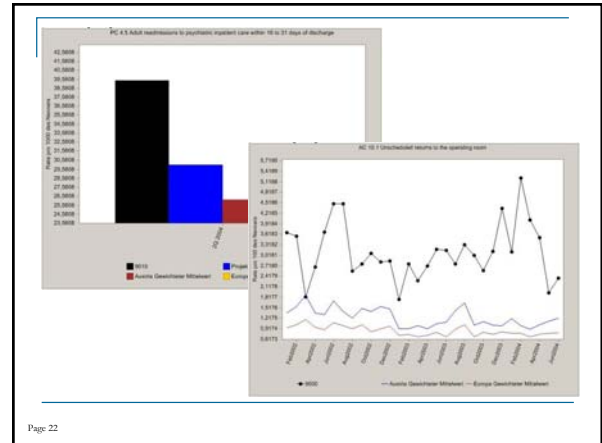
Page 19

Data Graphing and Exporting

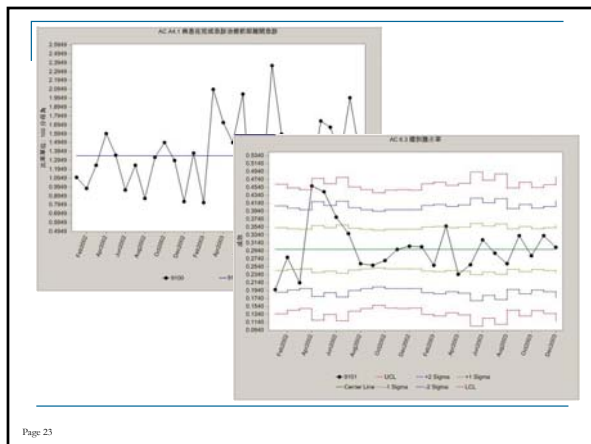
- Graphing facility and/or aggregate data
 - Line Graphs or Bar Charts
- Statistical process control (SPC)
 - Run Charts and Control Charts
- Ability to export data in CSV format for use in other applications or packages

Page 20

Page 21



Page 22

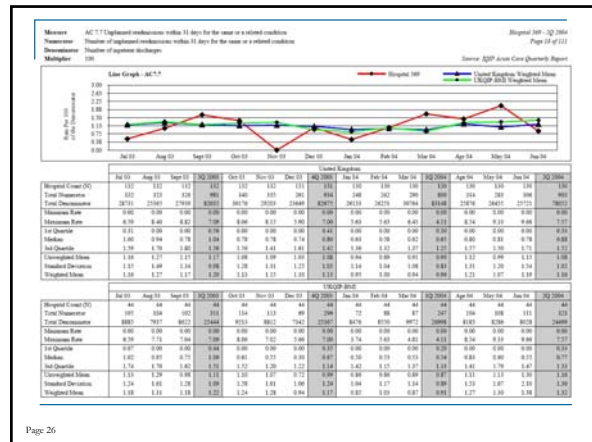
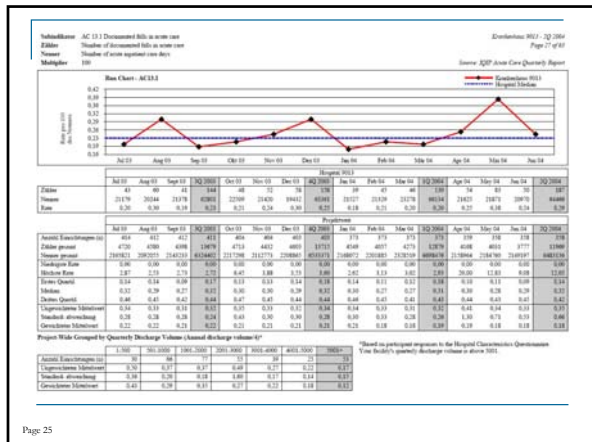


Page 23

Quarterly Reports

- Facility performance
- Comparative regional and local group data
- Graphics of trends (run charts and line graphs)

Page 24



Aggregate Analysis Reports

- Description of indicator and comparative descriptive statistics
- Graphics of trends (line charts and box plots)
- List factors that may influence performance at the hospital and/or regional levels
- Description of tools that can be applied and questions to be asked for internal performance improvement

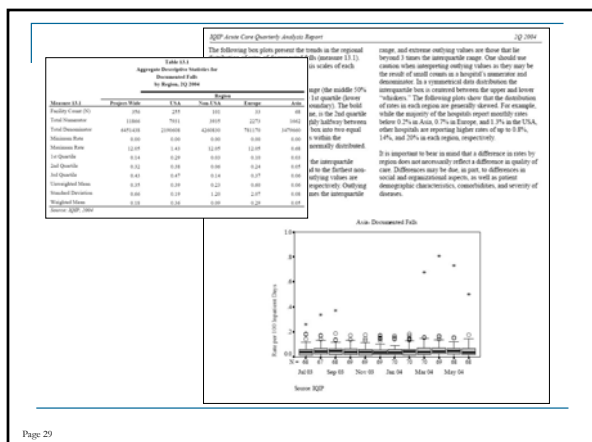
INDICATOR 13: Documented Falls

Overview
 Fall prevention is an important part of managing patients in acute care settings. Falls may result in injuries that can prolong hospitalization or lead to complications and decreased mobility after discharge.

The performance measures in this indicator allow participants to monitor falls and assess the impact that falls have on their patient population. Data can be tracked and trended over time and compared with that of other groups of similar hospitals. Such analyses and comparisons can provide a basis for improving patient safety.

Measures
 The following is a list of measures available in this indicator. Measures are per 100 of the denominator. It is not possible to convert monthly to quarterly data for measure 13.3 due to possible double counting of patients in the denominator.

Measure ID	Description
13.1	Documented falls in acute care
13.1A	Documented falls in acute care due to patient's health status
13.1B	Documented falls in acute care due to response to treatment, medication, and/or anesthesia
13.1C	Documented falls in acute care due to environmental hazard
13.1D	Documented falls in acute care due to all other causes
13.2	Documented falls in acute care resulting in injury
13.2A	Documented falls in acute care resulting in injury with severity score 1
13.2B	Documented falls in acute care resulting in injury with severity score 2
13.2C	Documented falls in acute care resulting in injury with severity score 3
13.3	Acute care inpatients with two or more documented falls



Next Steps: What You Can Do
 IQIP measures are indicators of performance and are not intended for ranking the "goodness" of the care provided. The motivating factor behind the IQIP is not the collection of data, but discovering the "why" behind the data. To identify opportunities for improving organizational performance, facilitating internal collaboration and cultural change, and supporting efforts to move performance improvement from theory to practice.

- Request a peer group comparison report from IQIP based on hospital characteristics that might influence or contribute to performance related to your rate of falls, such as discharge volume, the average age of inpatients, and/or your status as an academic teaching hospital.
- Plot your hospital's monthly rates and median rate of falls for a particular time period to generate a run chart. A run chart can capture the "why" of your hospital's process and assists in identification of trends and shifts in the process. Control charts can be particularly useful for understanding and managing process variation and distinguishing between common and special cause variation. Special cause variation is a process leading to lack of predictability and identifies opportunities for improvement in practice. For more information about control charts, please refer to the Data Analysis Guide, contact IQIP, or refer to:
 - Harb MC, Harb RE. Statistical Process Control for Health Care. Dunbury, Pacific Grove, 2002. (ISBN 0-314-7363-X)
 - Grant EI. Leavenworth KS. Statistical Quality Control. WCB McGraw-Hill, 1986. (ISBN 0-07-114428-7)
- Collect patient-level variables such as age, gender, race, diagnosis and procedure codes, date and time of fall, staffing ratios, and the unit where the fall occurred to assist in understanding why your rate is what it is. The collection of these variables will lead to broad questions like "what is the most common reason for falls in my hospital?" and "do most falls occur during the same time of day?" and "what day(s) of the week do most falls occur?" Other important questions include: "which unit has the highest rate of falls?" and "what is different about the patients and the environment in the unit where the most falls occur compared to other units with lower rates?"
- The application of quality improvement tools, such as flow charts and fishbone diagrams, can help identify the more common reasons or prevent at greatest risk for falls. With this information, a team of clinicians, risk managers, and hospital administrators can develop new guidelines and procedures that can be implemented to reduce the rate of falls and reduce associated excess costs or lengths of stay.

Indicator 13: Page 11 of 12

Peer Group Reports

- Based on characteristics chosen by requestor to group hospitals
 - e.g., annual discharge volume
 - e.g., teaching status
 - e.g., number of inpatient days
 - e.g., number of central line days
- Compare a single facility to one or two groups
- Compare one group to one or two other groups

Page 31

Measures: All 147 Facilities associated patients in the APFIC
 Numerator: Number of resident-associated pneumonia cases in the APFIC
 Denominator: Number of resident days in the APFIC
 Multiple: 1000

Page 1 of 3
 Page 2 of 3
 Source: International Quality Indicator Project, 2014

Facility Metric	NA	Numerator	Denominator	Rate
Age 65	0	0	27	0.00
Facility Type	0	0	0	0.00
Teaching	0	0	0	0.00
Total NA	0	0	0	0.00

Group	Facility Count (N)	Total Numerator	Total Denominator	Minimum Rate	1st Quartile	2nd Quartile	3rd Quartile	Maximum Rate	Standard Deviation	Skipped Values
Group 1	10	10	2072	0.00	0.00	0.00	2.18	7.84	3.72	4.72
Group 2	10	10	2022	0.00	0.00	0.00	1.70	7.84	3.07	4.29
Group 3	10	40	2070	0.00	0.00	0.00	3.00	7.31	4.13	4.30
Group 4	11	11	1800	0.00	0.00	0.00	4.21	1.56	3.20	3.77
Group 5	11	19	1804	0.00	0.00	0.00	5.70	17.70	7.78	8.31
Group 6	11	7	1870	0.00	0.00	0.00	6.00	7.84	5.01	7.77
Group 7	11	38	1840	0.00	0.00	0.00	8.31	7.00	4.48	4.38

Page 32

Table with 10 columns: Facility Metric, NA, Numerator, Denominator, Rate, and various statistical measures (Min, Q1, Q2, Q3, Max, SD, Skipped Values).

Page 33

Table with 10 columns: Facility Metric, NA, Numerator, Denominator, Rate, and various statistical measures (Min, Q1, Q2, Q3, Max, SD, Skipped Values).

Page 34

IQIP Reporting Functions

- Supports performance improvement initiatives
- Promotes a culture of quality
- Advocates the application of EBM
- Allows for customized analyses
- Allots ownership

Page 35

Questions or Comments?

Karol G. Wicker, MHS
 International Quality Indicator Project
 Center for Performance Sciences

E-mail: kwicker@MHAOnline.org

Tel: (410) 540-5056

Page 36