Technical Supplement:

Measures of elective surgery activity

Hospital Quarterly: April to June 2010

Bureau of
Health Information

Summary

This supplement to the Bureau of Health Information's recurrent public hospital performance reports describes the methods and technical terms used to compute descriptive statistics and performance indicators reported in *Hospital Quarterly*. Due to the technical nature of this narrative, it is intended for audiences interested in the creation of health information.

The elective surgery component of the *Hospital Quarterly* report is based on analyses of data extracted from a central data warehouse. The Bureau reports two performance indicators, the proportion of patients admitted within the recommended timeframe for each elective surgery urgency category and the median waiting time in days. More detail is provided in the activity indicators and the glossary pages. Indicators are presented by hospital, area health service and for NSW.

The Bureau of Health Information used SAS* V9.1.3™ for the statistical analysis of data for the *Hospital Quarterly: April to June 2010*.

The Waiting List Collection On-line System

The Waiting List Collection On-line System (WLCOS) contains a census of patients waiting for planned treatment at the end of each month and a record of patients admitted to the facility for the planned procedure or removed from the waiting list during each month. It is provided by NSW public hospitals, public psychiatric hospitals, public multi-purpose services, and for public patients who received treatment at private hospitals and private day procedures centres.

Waiting list data is extracted from the hospital's electronic patient records system and loaded locally into the Health Information Exchange (HIE) of each area health service (Area HIE). The frequency at which these extracts occur varies from site to site (Figure 1) depending on the patient record systems in place at each hospital:

1. At some sites, the waiting list extract is manually initiated and then subsequently transferred to the HIE server for that area health service via the HIE file transfer utility, HIEBatch and Reflection FTP

2. At other sites, a locally provided script performs the waiting list extract and transfer to the HIE server for that area health service. This is automatically initiated at a frequency decided by each area health service.
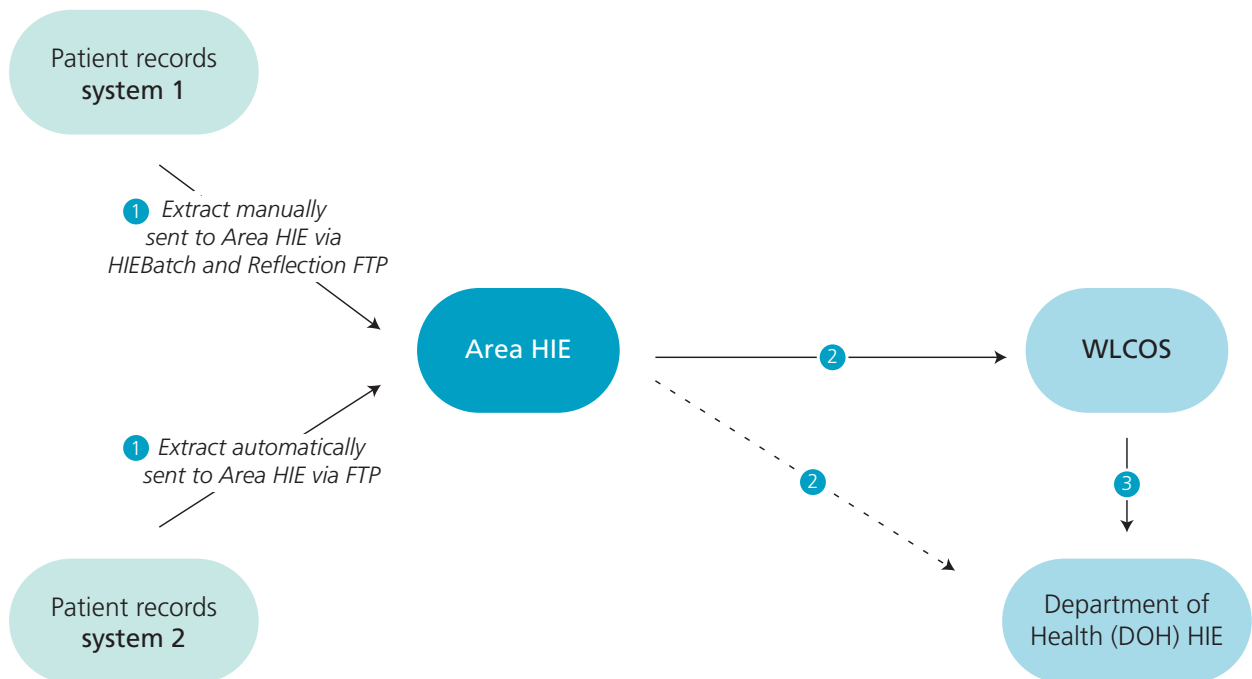
Data is automatically sent from the Area HIEs directly to WLCOS. Data is also periodically loaded into a temporary (non-useable) placeholder file in the HIE maintained by the Department of Health (DOH) from the Area HIEs.

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* SAS Institute. *The SAS System for Windows version 9.1.3.* Cary (NC): SAS Institute; 2005.

A system of checks (for logic errors and missing data) is applied to the data held in WLCOS. If a discrepancy in the data is detected, this is communicated to staff in the area health service (AHS) for the affected hospital. The AHS then contacts those hospital staff responsible for the quality of the patient records at each hospital. If these discrepancies are actual errors, then the information is corrected in the patient record system by staff from the hospital and amended in WLCOS by AHS staff. Once the data checks and amendments have been completed, this validated data set is copied to the DOH HIE.

Although WLCOS contains many fields relevant to patients undergoing elective surgery, the Bureau required only a selection to allow it to calculate the elective surgery performance indicators for NSW public hospitals.

Figure 1: Populating HIE elective surgery waiting data from hospital record systems

Activity indicators

The Bureau has reported two performance indicators, both by urgency category:

- The percentage of patients admitted on time for category A, category B, category C and all categories

- Median waiting time (in days) for: category A, category B and category C.

Only patients who have been admitted for their surgery are included in the analysis of these indicators.

This section contains details about the definitions used for the calculations of measures of elective surgery activity reported in the *Hospital Quarterly: April to June 2010.*

Patients admitted within the recommended timeframe

This indicator provides the proportion of patients admitted within the recommended timeframe for each of the elective surgery urgency categories, at each hospital, area health service and for NSW. It includes only records which have a valid Removal Date, are coded as 'S' for Elec Surg and are coded as '1' or '8' for Removal Status.

Per cent of patients admitted within the recommended timeframe, by urgency category

The numerator is the number of patients admitted to hospital for their elective surgery within the clinically recommended timeframe, i.e. in 30 days or less for category A patients, 90 days or less for category B patients and 365 days or less for category C patients. The denominator is the total number of patients admitted for elective surgery in each urgency category.

Per cent of patients admitted within the recommended timeframe, all urgency categories

The numerator is the sum of the number of urgency category A patients admitted in 30 days or less plus the number of urgency category B patients admitted in 90 days or less plus the number of urgency category C patients admitted in 365 days or less. The denominator is the sum of all patients admitted from urgency category A plus all patients admitted from urgency category B plus all patients admitted from urgency category C.

Median waiting time

Includes only those records which have a valid Removal Date, are coded as 'S' for Elec Surg and are coded as '1' or '8' for Removal Status. If the Flag Urgency for a patient is set to 'D' (not ready for care), then the wait time variable for calculation is Ready for Care Days; otherwise the wait time variable is Commonwealth Waiting Time. Median Waiting Time is the median (calculated in SAS V9.1.3™) of the appropriate wait time variable for each of the three urgency categories.

Glossary

Admission(s) – refers to the process, using registration procedures, under which a person is accepted by a hospital or an area or district health service facility as an inpatient.

Elective surgery – any form of surgery that a patient's doctor believes to be necessary but which can be delayed by at least 24 hours.

Health Information Exchange (HIE) – better known by the abbreviation HIE, this is a store of health records and information. Data from the Area HIE are used to populate the Waiting List Collection On-line System (WLCOS), which provides the data for the Bureau's reports.

Median waiting time (days) – this is the number of days it took for half of the patients who received elective surgery in the period to be admitted for, and receive, their surgery.

Patients treated on time – refers to the percentage of patients who received elective surgery within the recommended timeframe for their urgency category.

Removal status – describes the reason for the patient's removal from the waiting list; codes of 1 (routine admit) and 8 (admission contracted to a private hospital) mean that the patient received elective surgery and is therefore included in the analysis.

Removal date – the date the patient on the waiting list was admitted to the facility for the planned procedure or was removed from the waiting list.

Urgency categories – all patients on the elective surgery waiting list are allocated to an urgency category by the surgeon to whom they were referred. These categories provide a timeframe for how soon the doctor recommends the patient be admitted for their procedure:

Category 1 **(A)**	Admission within **30 days** desirable
Category 2 **(B)**	Admission within **90 days** desirable
Category 3 **(C)**	Admission within **365 days** desirable

Waiting List Collection On-line System (WLCOS) – this contains a census of patients waiting for elective surgery and a record of all patients from the waiting list who received elective surgery or were removed from the waiting list.

About the Bureau

The Bureau of Health Information was established in 2009 as an independent, board-governed organisation established by the NSW Government to be the leading source of information on the performance of the public health system in NSW.

Our Board

- Professor Bruce Armstrong AM (Chair)

- Professor Jane Hall

- Mrs Liz Rummery AM

- Dr Don Weatherburn

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- Dr Diane Watson (Chief Executive)

Our Mission

The Bureau provides the community, healthcare professionals and the NSW Parliament with timely, accurate and comparable information about the performance of the NSW public health system in ways that enhance the system's accountability and inform efforts to increase its beneficial impact on the health and well being of people in NSW.

The Bureau of Health Information is a statutory health corporation. The conclusions in this report are those of the Bureau of Health Information and no official endorsement by the NSW Minister for Health, the NSW Department of Health or any other NSW statutory health corporation is intended or should be inferred.

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