

Clinical indicators for day surgery

B. Collopy^{a,*}, L. Rodgers^a, J. Williams^a, N. Jenner^a, L. Roberts^b, J. Warden^b

^a Australian Council on Healthcare Standards, Care Evaluation Program, Level 9, 41 Aikenhead Centre, 41 Victoria Parade, Fitzroy 3065, Victoria, Australia

^b Australian Day Surgery Council, Australia

Received 18 November 1998; accepted 28 November 1998

Abstract

As the number, variety and complexity of day procedures increase it is clearly important to ensure maintenance (and improvement) in the quality of the care given. To do so the Australian Day Surgery Council, assisted by the Australian Council on Healthcare Standards Care Evaluation Program, introduced five generic performance indicators. They were addressed by 240 healthcare organisations in 1997 reflecting the management of over 380 000 patients in day procedure facilities. Aggregate rates for the five indicators in 1997 were: failure to arrive, 1.5%; cancellation of procedure after arrival, 0.9%; unplanned return to operating room, 0.08% and unplanned delayed discharge, 0.56%. The unplanned overnight admission rate was significantly lower in freestanding than in attached facilities and significantly lower rates were noted for private compared with public facilities for all the indicators. Numerous actions were reported by 64% of organisations (as a result of indicator monitoring) including increased patient education, the production of information leaflets, establishment of pre-anaesthetic clinics, alteration of surgical techniques, introduction of drug trials and numerous policy changes. © 1999 Elsevier Science B.V. All rights reserved.

Keywords: Clinical indicators; Day procedures; Quality database

1. Introduction

In 1995 Ira Rutkow wrote that ‘ambulatory surgery is one of those rare socio-economic political movements in which all participants have benefited as demonstrated by public interest and demand, surgeon satisfaction, patient participation and most importantly, payer encouragement and mandate’ [1]. However, there is no mention of quality in this statement and as the number, variety and complexity of day procedures increase it is clearly important to ensure the maintenance (and improvement) of the quality of care given. This issue has been addressed by the Australian Day Surgery Council (ADSC) and the Australian Council on Healthcare Standards (ACHS) Care Evaluation Program (CEP) in the development and implementation of a set of performance measures or clinical indicators [2]. They now form part of the larger program of the ACHS CEP and the medical colleges which has seen the introduction of 15 sets of clinical indicators into the Evaluation and Quality Improvement Program (EQuIP), the new ac-

creditation process of the ACHS [3]. This has enabled the establishment of a ‘national’ database reflecting the quality of medical care. It is unique in its provider (medical college) involvement and the wide range of conditions and procedures addressed [4].

Clinical indicators are defined as measures of the management and/or outcome of care whose purpose is to act as flags of possible problems in patient care.

2. Clinical indicators for day procedures

Five generic indicators have been developed reflecting access and efficiency of booking, appropriateness of patient selection, safety of anaesthesia and surgery and discharge planning. They are:

- Failure of booked patients to arrive
- Cancellation of the procedure after arrival
- Unplanned return to the operating room
- Unplanned overnight admission
- Unplanned delay in discharge greater than 6 h.

The indicators were introduced in 1996 for health care organisations undergoing an accreditation survey

* Corresponding author.

Table 1
Aggregate results for all indicators

Indicator	No. of Orgs	Num.	Denom.	Rate (%)
Failure to arrive (FTA)	191	4876	317 416	1.5
Cancellation of procedure after arrival (CAA)	190	2850	314 365	0.9
Unplanned return to O.R. (UpROR)	193	268	333 569	0.08
Unplanned overnight admission (UpO/NA)	226	8520	384 401	2.2
Unplanned delay in patient discharge (DD)	170	1492	268 446	0.56

in that year and were addressed by 101 organisations. From January 1997 all health care organisations in the EQuIP program were requested to forward data 6-monthly to the CEP. In that year 240 organisations forwarded data and 54 of these were free standing facilities. The data received reflected the management of over 380 000 patients in day procedure facilities.

Compared with other indicator sets there was less reliance on the medical record, with more than 60% of facilities using prospective data collection methods utilising computerised programs and special forms. Nearly one in 10 facilities reported some difficulty in obtaining data for the 'failure to arrive' indicator, but little difficulty collecting data for the other indicators was experienced. In the development phase an indicator concerning admission to hospital after 24 h was field tested but later dropped as data proved too difficult to collect, particularly as there is no Australian unique identifier for patients.

Health care organisations forward both qualitative and quantitative data to the CEP, but no individual patient information is reported. The results from 240 organisations in 1997 are shown in Table 1. Comparisons of the indicators by public and private and free-standing or attached units are shown in Tables 2 and 3.

The rate of unplanned overnight admissions was 2.2%. In the context of day surgery this is probably the most important indicator. It was addressed by 226 organisations with a denominator of over 384 000 patients. A review of published studies reveals a mean rate of approximately 2.5% where all procedures are included [5–10] as with this indicator, but up to 9% for specific procedures such as laparoscopic cholecystectomy and some urological procedures [11,12].

A comparison of public versus private facilities revealed significantly lower values in private facilities for all of the indicators, as shown in Table 2. This may be reflecting a casemix difference.

The rates in free standing facilities for three of the indicators were significantly lower than in attached units but not for failure to arrive or unplanned return to the operating room, as shown in Table 3.

Of particular interest is the difference in the unplanned overnight admissions, which is seven times higher for attached units than for free standing day

procedure centres. Possible factors accounting for this difference are the type of procedure performed in the attached facilities such as invasive radiology, the convenience of simply transferring a patient 'next door' and a difference in patient selection which perhaps is a little less rigorous than for free standing facilities. There may also be a difference in quality but this is doubtful. For 1997 the rate of unplanned return to the operating room for day procedures versus the hospital wide medical indicator (involving inpatients) reflects the same seven fold difference (0.08 vs. 0.56%, respectively) and is probably also a reflection of procedures performed and case complexity.

3. Validity of clinical indicator data

The CEP exercises no control over or direction on the methods for data collection used by the participating health care organisations. However, being provider developed the indicators have face validity and content validity in that they measure performance in aspects of care identified by the medical colleges as directly relevant to quality. As the number of contributing organisations increases, variation by any one organisation has less influence on the aggregate rate and therefore the accuracy (reliability) of the rate, as a measure of current practice, increases. A further reassurance of reliability is accord with the international literature, as was indicated above for the rate of unplanned transfers of patients to an overnight facility. Reproducibility has been clearly demonstrated in each year's data for other sets of indicators [13] and also for day procedures. For example the rates of unplanned return to the operating

Table 2
Public and private comparisons

Indicator	Public rate (%)	Private rate (%)	P-value
FTA	2.3	1	0.0001
CAA	1.8	0.3	0.0001
Up ROR	0.14	0.05	0.0001
Up O/NA	3.3	1.16	0.0001
Unplanned DD	0.89	0.38	0.0001

Table 3
Freestanding versus attached units

Indicator	Free standing rate (%)	Attached unit rate %	P-value
FTA	1.4	1.6	0.05
CAA	0.3	1.1	0.0001
Up ROR	0.05	0.09	0.1
Up O/NA	0.4	2.7	0.0001
Unplanned DD	0.18	0.66	0.0002

room were 0.05% in 1996 and 0.08% in 1997. The rates for unplanned delay in patient discharge were 0.46% in 1996 and 0.56% in 1997. As organisations move more to prospective data collection, using special registers, fewer errors are likely and whilst the whole program remains an educational one (without funding implications), to stimulate 'internal' review, there is little incentive for 'gaming' of data.

4. Responsiveness of the clinical indicators

Kazandjian and co workers in the Maryland program of indicators have commented that the 'responsiveness' of an indicator, that is its ability to induce action in facilities monitoring the indicator, is the best index of its value [14]. It was pleasing to note that 64% of the facilities monitoring these indicators took some action after reviewing their results.

The types of action taken related to: patient education, e.g. advice about fasting and cessation of certain drugs; information leaflets, e.g. explanations of procedures and follow up requirements; the establishment of pre-admission clinics; alteration to surgical techniques; a review of the type of procedures, e.g. ERCP was dropped by one facility as a day procedure; alteration to the order of procedures, e.g. procedures requiring a long recovery period were listed in the morning; alteration to drug policies—numerous policy changes were reported and a number of drug trials were initiated.

As with the other indicator sets the ACHS CEP and ADSC working party for these indicators will review the qualitative and quantitative information on a yearly basis and make appropriate changes to the indicators on a biennial basis. Consideration will be given to the introduction of specific procedure indicators in the future, for example laparoscopic procedures. Specificity will better enable 'peer' comparisons but it will be desirable to capture post discharge events to ensure more complete outcome information.

5. Conclusion

There has been good facility acceptance of the indicators. The overall standards of care as reflected by the indicators appear to be satisfactory, with free standing facilities in particular performing well. The indicators have proven to be responsive and as a result there is documented improvement in patient management. We can, in time, expect improvement in outcomes to be documented.

Acknowledgements

The ACHS gratefully acknowledges the financial support of the Commonwealth Department of Health and Family Services and the cooperation of the Australian Day Surgery Council working party in the development of the indicators. Gratitude is also expressed to the 240 individual Healthcare organisations contributing data to the ACHS Care Evaluation Program.

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