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**Literature search results**

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**Search details**

What evidence exists that reducing percentage bed occupancy reduces costs?

**Resources searched**

NHS Evidence; TRIP Database; Cochrane Library; BNI; CINAHL; EMBASE; HMIC; Health Business Elite; MEDLINE; Google Scholar; Google Advanced Search

**Database search terms:**

- bed*
- BED OCCUPANCY
- occupanc*
- HOSPITAL BED UTILIZATION
- bed* adj2 (utilis* OR utiliz* OR occupancy)
- cost*
- expenditure*
- financ*
- fund*
- tariff*
- price
- payment
- spend*
- spent
- expense*
- saving*
- save*
- loss*
- disburs*
- charg*
- value
- FEES AND CHARGES
- exp COST SAVINGS
- FINANCIAL LOSSES
- PROFITS
- exp HEALTH CARE COSTS
- exp HEALTH FACILITY COSTS
- exp COSTS AND COST ANALYSIS
- exp COST CONTROL
- exp COST BENEFIT ANALYSIS
- exp NURSING COSTS
- exp COST SAVINGS
- adult*
- exp ADULT
- aged*
- older
- person*
- geriatric*
- elder*
- senior*
- percent*
- ratio*
- proportion*
- rate*
- amount*

**Evidence search string(s):**

- ("bed occupancy" OR "bed utilisation" OR "bed utilization" OR "occupancy of beds" OR "utilis* of beds") (cost* OR profit* OR saving* OR finance* OR expend* OR loss* OR expense* OR fund* OR spend* OR spent)

**Google search string(s):**

- ~"bed occupancy" OR ~"bed utilisation" OR ~"bed utilization" OR ~"occupancy of beds" OR ~"utilis* of beds") (~costs OR ~profits OR ~savings OR ~finances OR ~expenditure OR ~loss OR ~expense OR ~funding OR ~spending )

**Summary**

There is some research which has looked at bed occupancy or utilisation in terms of particular procedures or in the management of specific conditions, but none looking solely at bed occupancy and its effect on costs.
It is possible to make some estimates of costs associated with bed occupancy and excess length of stay. It must be stressed that these costs are estimates based on national HES data, which may underestimate activity and that the data is derived for English trusts and for the main medical and surgical specialties alone. Without HRG reference cost information it is also not possible to apportion precise costs to this data. Therefore, a unit cost of £286 per bed day was used from the Personal Social Services Research Unit’s ‘Unit Cost of Health and Social Care’. With these limitations, it suggests a total unit cost of at least £450m a year of which more than £20m, recognised as an underestimate, is due to excess length of stay and could be reduced.

Evidence-based reviews

Chest

The Financial Impact of Heparin-Induced Thrombocytopenia 2008

For all case patients, 59.8% of hospital costs were incurred after the diagnosis of HIT. The all-cause mortality rates of all case patients and control subjects were 9.1% (2 of 22 case patients) and 2% (5 of 255 control subjects), respectively (p = 0.1). The all-cause mortality rates for Medicare case patients and Medicare control subjects was 11.8% (2 of 17 case patients) and 2.5% (5 of 203 control subjects), respectively (p = 0.09).

The projected yearly backfill effect for 50 HIT cases was determined as follows:

- Step 1: Total number of increased hospital days per year = 50 cases/year × 15-day average increase in length of stay = 750 days;
- Step 2: Potential lost patient hospital admissions = 750 days ÷ 5.33 days (institution-specific data) = 141 lost patient admissions;
- Step 3: Profit (or loss) for a mean patient hospital admission = $5,489 per patient (institution-specific data); and
- Step 4: Multiply the profit times the number of potential lost hospital admissions: $5,489 × 141 = $773,949.

Using data from all case patients, the projected financial loss from HIT for an institution with 50 new HIT cases per year ranges from $719,350 for institutions with low occupancy rates to $1,493,299 for institutions with high occupancy rates ($14,387 per case × 50 cases + up to $773,949 in lost operating margin). Using data from only the Medicare subset of patients, the projected financial loss from HIT in an institution with 50 new HIT cases per year and a high occupancy rate is $1,782,449 ($20,170 per case × 50 cases + up to $773,949 in lost operating margin). Institutions without a high bed occupancy rate would not consider the financial loss from the backfill effect.

Published research

1. The economic impact of increased use of multi-modal analgesia for the management of post-surgical pain in the hospital setting

Author(s) Izumi H., Khangulov V., Hayashida D., Peyerl F., Joysumpoa J., Lacouture P.G.

Citation: Value in Health, May 2013, vol./is. 16/3(A114), 1098-3015 (May 2013)

Publication Date: May 2013

Abstract: OBJECTIVES: Treating post-surgical patients with opioid and non-opioid
medications simultaneously can be an effective way to treat pain, minimize opioid-associated side-effects, and reduce hospital length of stay (LOS). The objective of this exercise was to develop a budget impact model to evaluate the economic impact of increased use of multi-modal analgesia following orthopedic or abdominal/pelvic surgery in the hospital setting. METHODS: A total of 50,648 unique patient encounters from a 2009-2012 US electronic health record database were evaluated. Patients were segmented into 280 cohorts based on surgical procedure (40 unique orthopedic and abdominal/pelvic procedures) and NSAID risk factors (7 unique risk groups). Median LOS was calculated for each cohort and compared based on analgesia received (opioid-only vs. multi-modal). Findings were adjusted to fit the general case of a 250-bed hospital with an 80% occupancy rate and performing 3,400 total orthopedic and abdominal/pelvic surgeries/year. Median per-day hospital stay costs of $400 and $460 per orthopedic and abdominal/pelvic procedure, respectively, were applied. RESULTS: Current proportions of patients receiving multi-modal, opioid-only, and non-opioid-only therapy were 29.9%, 63.0%, and 7.1%, respectively. Multimodal therapy was associated with reduced LOS for 45.2% of cohorts, no change in LOS for 41.7% of cohorts, and increased LOS for 13.1% of cohorts. Increasing the proportion of patients receiving multi-modal therapy resulted in cost savings. Shifting 20% of patients from opioid-only to multi-modal therapy resulted in estimated annual savings of $71,526, while shifting 40% of patients in this manner reduced costs by $141,317. Conversely, shifting all patients treated with multi-modal therapy to opioid-only therapy increased annual costs by $105,204. CONCLUSIONS: The model supports the hypothesis that multi-modal therapy is associated with reduced LOS and reduced health care costs. While currently-available NSAIDs may present their own side-effect risks, NSAIDs with improved safety may further reduce costs, assuming similar efficacy and LOS effects.

Source: EMBASE

2. Average length of stay in hospitals in the USA.

Author(s) Jones, Rod

Citation: British Journal of Healthcare Management, 01 April 2013, vol./is. 19/4(185-191), 13580574

Publication Date: 01 April 2013

Source: CINAHL

Available in fulltext from British Journal of Healthcare Management at EBSCOhost


Author(s) Hamrock, Eric, Paige, Kerrie, Parks, Jennifer, Scheulen, James, Levin, Scott

Citation: Journal of Healthcare Management, 01 March 2013, vol./is. 58/2(110-124), 10969012

Publication Date: 01 March 2013

Source: CINAHL

Available in fulltext from Journal of Healthcare Management at EBSCOhost

Available in fulltext from Journal of Healthcare Management at EBSCOhost

Available in fulltext from Journal of Healthcare Management at EBSCOhost

4. Impact of a dedicated "radial lounge" for percutaneous coronary procedures on same-day discharge rates and bed utilization

Author(s) Brewster S., Khimdas K., Cleary N., Penswick A., Cliffe S., Weerackody R., Wragg A., Rothman M.T., Archbold R.A.

Citation: American Heart Journal, March 2013, vol./is. 165/3(299-302), 0002-8703;1097-6744 (March 2013)
Publication Date: March 2013

Abstract: Background: Two advantages of transradial coronary procedures are an increased potential for same-day discharge and better resource management. This study assessed the impact of a dedicated "radial lounge" (1) on the rate of same-day discharge after elective percutaneous coronary intervention (PCI) and coronary angiography and (2) on bed utilization. Methods: We compared our unit's rates of same-day discharge in patients who underwent elective PCI or coronary angiography in the year before and in the year after the opening of a dedicated radial lounge for elective patients. Results: In its first year of operation, 439 patients who underwent PCI and 1,109 patients who underwent angiography were managed in the radial lounge. Among these patients, the rate of same-day discharge was 84.7% after PCI and 97.0% after angiography. Requirement for overnight admission was significantly more common after femoral access compared with radial access for both angiography (4.1% vs 2.8%, P <.05) and PCI (20.3% vs 14.2%, P <.01). The unit's overall rate of same-day discharge increased from 2.3% to 51.2% after elective PCI (P <.0005) and from 72.7% to 84.9% after elective angiography (P <.005). An estimated 595 bed days were saved through reduced overnight admissions in elective patients. Conclusions: Our unit's overall rates of same-day discharge after elective PCI and coronary angiography increased dramatically in the year after the opening of a dedicated radial lounge. This was directly attributable to the high rates of same-day discharge in radial lounge patients. The radial lounge impacted favorably on in-patient bed capacity.

Source: EMBASE

Available in fulltext from American Heart Journal at the ULHT Library and Knowledge Services' eJournal collection

5. Evaluating palliative care ward staffing using bed occupancy, patient dependency, staff activity, service quality and cost data

Author(s) Roberts D., Hurst K.

Citation: Palliative Medicine, February 2013, vol./is. 27/2(123-130), 0269-2163;1477-030X (February 2013)

Publication Date: February 2013

Abstract: Background: Palliative care staffing has remained unchallenged for decades while service provision has changed markedly, bringing new workforce demands. There is little evidence to inform hospice workforce structures, which strive to deliver the highest-quality holistic care. Aim: The study had three main aims, to: (i) adapt the acuity-quality workforce planning method used extensively in the UK National Health Service (NHS) for use in hospices; (ii) compare hospice and NHS palliative care staffing establishments and their implications; and (iii) create ward staffing benchmarks and formulae for hospice managers. Design: A method adapted from a widely used nursing workforce planning and development (WP&D) study was used to collect data in hospice and palliative care wards. Setting: Twenty-three palliative care and hospice wards, geographically representing England, were studied. Results: A dataset, which profiles and benchmarks hospice and NHS palliative care ward occupancy, patient dependency, staff activity, ward establishments, quality and costs in 23 palliative care and hospice wards has been created. The database reveals large differences between hospice and palliative care wards. For example, hospice wards are better staffed and more expensive to run but staff deliver higher-quality care (measured using an established service quality audit) despite facing heavier workloads. Consequently, staffing multipliers are created to help managers estimate workload-based ward staffing. Conclusions: This dataset provides evidence-based recommendations to inform palliative care nursing workforce modelling, including deciding future nursing workforce size and mix based on rising workloads. The new dataset is suitable for use in UK hospice wards and may be appropriate for future international use.

Source: EMBASE

Available in fulltext from Palliative Medicine at EBSCOhost
6. A flaw in person-based funding?

**Author(s)** Jones, Rod

**Citation:** British Journal of Healthcare Management, 01 January 2013, vol./is. 19/1(32-38), 13580574

**Publication Date:** 01 January 2013

**Source:** CINAHL

Available in fulltext from British Journal of Healthcare Management at EBSCOhost

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7. Population density and healthcare costs.

**Author(s)** Jones, Rod

**Citation:** British Journal of Healthcare Management, 01 January 2013, vol./is. 19/1(44-45), 13580574

**Publication Date:** 01 January 2013

**Source:** CINAHL

Available in fulltext from British Journal of Healthcare Management at EBSCOhost

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8. Effectiveness of long-term acute care hospitalization in elderly patients with chronic critical illness.

**Author(s)** Kahn JM, Werner RM, David G, Ten Have TR, Benson NM, Asch DA

**Citation:** Medical Care, 01 January 2013, vol./is. 51/1(4-10), 00257079

**Publication Date:** 01 January 2013

**Abstract:** BACKGROUND: For patients recovering from severe acute illness, admission to a long-term acute care hospital (LTAC) is an increasingly common alternative to continued management in an intensive care unit (ICU). OBJECTIVE: To examine the effectiveness of LTAC transfer in patients with chronic critical illness. RESEARCH DESIGN: Retrospective cohort study in United States hospitals from 2002 to 2006. SUBJECTS: Medicare beneficiaries with chronic critical illness, defined as mechanical ventilation and at least 14 days of intensive care. MEASURES: Survival, costs, and hospital readmissions. We used multivariate analyses and instrumental variables to account for differences in patient characteristics, the timing of LTAC transfer, and selection bias. RESULTS: A total of 234,799 patients met our definition of chronic critical illness. Of these, 48,416 (20.6%) were transferred to an LTAC. In the instrumental variable analysis, patients transferred to an LTAC experienced similar survival compared with patients who remained in an ICU [adjusted hazard ratio=0.99; 95% confidence interval (CI), 0.96 to 1.01; P=0.27). Total hospital-related costs in the 180 days after admission were lower among patients transferred to LTACs (adjusted cost difference=-$13,422; 95% CI, -26,662 to -223, P=0.046). This difference was attributable to a reduction in skilled nursing facility admissions (adjusted admission rate difference=-0.591; 95% CI, -0.728 to -0.454; P<0.001). Total Medicare payments were higher (adjusted cost difference=$15,592; 95% CI, 6343 to 24,842; P=0.001). CONCLUSIONS: Patients with chronic critical illness transferred to LTACs experience similar survival compared with patients who remain in ICUs, incur fewer health care costs driven by a reduction in postacute care utilization, however, invoke higher overall Medicare payments.

**Source:** CINAHL

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9. The hospital bed: on its way out?

**Author(s)** Appleby, John

**Citation:** BMJ, 2013, vol./is. 42/7899(16-17), 0959-8154

**Publication Date:** 2013

**Abstract:** The Chief Economist at The King's Fund questions whether the hospital may be
slowly but inexorably on its way out, to be replaced perhaps by 'virtual wards' and new configurations of care facilities. Or are we already close to the limit of substitution and technology development that would allow significant further reductions? [KJ]

Source: HMIC
Available in print at Pilgrim Hospital Staff Library
Available in print at Louth County Hospital Medical Library
Available in print at Lincoln County Hospital Professional Library

10. Five year outcomes of a new critical care program
Author(s) Woerndle R., Hoyt J.
Citation: Critical Care Medicine, December 2012, vol./is. 40/12 SUPPL. 1(28-29), 0090-3493 (December 2012)
Publication Date: December 2012
Abstract: Introduction: In June 2007 a CMS designated Rural Referral Center in North Carolina with 280 staffed beds initiated a high intensity critical care program. We present here the first five years of patient outcomes and financial information. Hypothesis: The development of a critical care program staffed by intensivists would result in a favorable hospital return on investment and patient mortality. Methods: An uncontrolled prospective observational study derived from billing data and outcome information from an APACHE IIB data base. Results: In the first five years, 4,186 patients were admitted to the 12 bed ICU (71% occupancy) with an average APACHE IIB score of 19.41. The predicted ICU length of stay was 5.36 days, the actual ICU length of stay was 4.21 days. Using previously accepted estimates of cost, this 1.15 day reduction in ICU length of stay equates to $7,697,180 in hospital savings. Program expenses included $279,000 for additional equipment and $4,310,419 to cover the shortfall between physician collections and expenses. With an ICU payer mix of 65% Medicare, 16% Medicaid, 12% commercial insurance and 7% patient self pay the average charge per patient day was $290 and average reimbursement was $132 per patient day. ICU acuity has risen steadily since program inception with a mean monthly APACHE IIB score of 17.89 in July 2007 to 20.87 in July 2012. The incidence of respiratory failure requiring mechanical ventilation has been 45%. At the initiation of the program the Case Mix Index for the hospital was 0.9, after the first year this index rose to 1.4 and has maintained at that level. This increase is thought to be due to the increased acuity of ICU patients. This increase resulted in $3,000,000 in additional hospital revenue. The predicted in hospital mortality for these ICU patients was 32.83%, the actual mortality rate was 17.32%. Conclusions: Five years after the initiation of a critical care program the hospital had a bottom line for the intensivist program of $6,386,761. The return on investment was 1 to 2.48. The estimated lives saved that were predicted by APACHE IIB to die was 649.
Source: EMBASE
Available in fulltext from Critical Care Medicine at the ULHT Library and Knowledge Services’ eJournal collection

Author(s) Prin M., Wunsch H.
Citation: Current Opinion in Critical Care, December 2012, vol./is. 18/6(700-706), 1070-5295;1531-7072 (December 2012)
Publication Date: December 2012
Abstract: PURPOSE OF REVIEW: Interest in international comparisons of critical illness is growing, but the utility of these studies is questionable. This review examines the challenges of international comparisons and highlights areas in which international data provide information relevant to clinical practice and resource allocation. RECENT FINDINGS: International comparisons of ICU resources demonstrate that definitions of critical illness and ICU beds vary due to differences in ability to provide organ support and
variable staffing. Despite these limitations, recent international data provide key information to understand the pros and cons of different availability of ICU beds on patient flow and outcomes, and also highlight the need to ensure long-term follow-up due to heterogeneity in discharge practices for critically ill patients. With increasing emphasis on curbing costs of healthcare, systems that deliver lower cost care provide data on alternative options, such as regionalization, flexible allocation of beds, and bed rationing. SUMMARY: Differences in provision of critical care can be leveraged to inform decisions on allocation of ICU beds, improve interpretation of clinical outcomes, and assess ways to decrease costs of care. International definitions of key components of critical care are needed to facilitate research and ensure rigorous comparisons. Copyright 2012 Lippincott Williams & Wilkins.

Source: EMBASE
Available in fulltext from Current Opinion in Critical Care at the ULHT Library and Knowledge Services’ eJournal collection


Author(s) Krupka, Dan C., Sandberg, Warren S., Weeks, William B.
Citation: Health Affairs, 01 November 2012, vol./is. 31/11(2571-2578), 02782715
Publication Date: 01 November 2012
Abstract: Reducing the complications that patients experience following surgery has garnered renewed attention from the medical and policy community. Reducing surgical complications is, foremost, critically important for patients. Moreover, in a competitive environment increasingly characterized by transparency of outcomes, the surgical complication rate is an important measure of hospital performance that could strongly influence choices of care and care sites made by patients and payers. However, programs to achieve such improvements can reduce hospital revenues, as reimbursements to treat patients for complications decrease. In this article we examine the business case for hospitals' consideration of programs to reduce surgical complications. We found that if a hospital's surgical inpatient volume is not growing, such a program results in negative cash flow. We also found that if a hospital's surgical volume is growing, and if the hospital can sufficiently reduce the average length-of-stay for surgical patients without complications, the cash flow could be positive. We recommend that hospitals with limited growth prospects that are nonetheless contemplating a surgical complication reduction program establish agreements with payers to share in any savings generated by the program.

Source: CINAHL

13. Bed occupancy rates and hospital-acquired infections—should beds be kept empty?

Author(s) Kaier K., Mutters N.T., Frank U.
Citation: Clinical Microbiology and Infection, October 2012, vol./is. 18/10(941-945), 1198-743X;1469-0691 (October 2012)
Publication Date: October 2012
Abstract: There is growing evidence that bed occupancy (BO) rates, overcrowding and understaffing influence the spread of hospital-acquired infections (HAIs). In this article, a systematic review of the literature is presented, summarizing the evidence on the adverse effects of high BO rates and overcrowding in hospitals on the incidence of HAIs. A Pubmed database search identified 179 references, of which 44 were considered to be potentially relevant for full-text review. The majority (62.9%) focused on methicillin-resistant Staphylococcus aureus-associated infection or colonization. Only 12 studies were found that provided a statistical analysis of the impact of BO on HAI rates. The median BO rate of the analysed studies was 81.2%. The majority of studies (75%) indicated that BO rates and understaffing directly influence the incidence of HAIs. Only three studies showed no significant association between BO rates and the incidence of HAIs. Interestingly, only one of the included studies detected a seasonal trend in the BO rate. The present review shows an association between BO rates and the spread of HAIs in various settings. Because the
evidence on this topic is limited, we conclude that further research is needed in order to analyse the rationale of a threshold BO rate, because keeping beds empty is comparatively costly. 2012 The Authors. Clinical Microbiology and Infection 2012 European Society of Clinical Microbiology and Infectious Diseases.

Source: EMBASE

14. Right there all along.

Author(s)

Citation: Modern Healthcare, 10 September 2012, vol./is. 42/37(6-14), 01607480
Publication Date: 10 September 2012
Source: CINAHL
Available in fulltext from Modern Healthcare at EBSCOhost

15. Optimizing bed utilization in a regional cardiac program with cost savings march 2012

Author(s) Constable N., Hodgson J.

Citation: Canadian Journal of Cardiology, September 2012, vol./is. 28/5 SUPPL. 1(S446), 0828-282X (September-October 2012)
Publication Date: September 2012
Abstract: The demand for acute care hospital beds is a constant pressure for most hospitals in Canada today. Health care centres must optimize the supply of open beds to accommodate the daily pressures that are presented each day. Southlake Regional Health Centre is located within the Central LHIN in Ontario and is the only centre providing advanced cardiac services for this region. The population of men and women aged 50-69 in this region is expected to increase anywhere by 27-69% between 2007 and 2016. As a Regional Cardiac Centre, Southlake responds to the needs of eleven partner hospitals, for patients requiring angiogram/angioplasty. The Interventional Cardiology Program has developed a >>Same Day Discharge<< strategy and a post angio-plasty (PCI) repatriation process with five referring centres. Despite these initiatives, our open door policy for acute ST elevation myocardial infarctions, (STEMI) patients, began developing delays in timely access to acute care beds within the region. This presentation will outline the initiative to optimize bed flow within the region. A select patient group, referred non ST elevation myocardial infarction (NSTEMI) was identified to stay in the CSSU for discharge the following morning. This was done in collaboration with our referring/repatriation hospitals. This presentation will provide the dimensions of a collaborative inter hospital team approach, to improve inter hospital bed flow, patient satisfaction and significant cost savings, while still providing timely access to advanced cardiac care.
Source: EMBASE

16. Acute care for elders units produced shorter hospital stays at lower cost while maintaining patients’ functional status

Author(s) Barnes D.E., Palmer R.M., Kresevic D.M., Fortinsky R.H., Kowal J., Chren M.-M., Landefeld C.S.

Citation: Health Affairs, June 2012, vol./is. 31/6(1227-1236), 0278-2715;1544-5208 (June 2012)
Publication Date: June 2012
Abstract: Acute Care for Elders Units offer enhanced care for older adults in specially designed hospital units. The care is delivered by interdisciplinary teams, which can include geriatricians, advanced practice nurses, social workers, pharmacists, and physical
therapists. In a randomized controlled trial of 1,632 elderly patients, length-of-stay was significantly shorter—6.7 days per patient versus 7.3 days per patient—among those receiving care in the Acute Care for Elders Unit compared to usual care. This difference produced lower total inpatient costs—$9,477 per patient versus $10,451 per patient—while maintaining patients' functional abilities and not increasing hospital readmission rates. The practices of Acute Care for Elders Units, and the principles they embody, can provide hospitals with effective strategies for lowering costs while preserving quality of care for hospitalized elders. 2012 Project HOPE- The People-to-People Health Foundation, Inc.

Source: EMBASE

17. A simple guide to a complex problem--maternity bed occupancy.
Author(s) Jones, Rod
Citation: British Journal of Midwifery, 01 May 2012, vol./is. 20/5(351-357), 09694900
Publication Date: 01 May 2012
Abstract: The average occupancy applicable to different sized maternity units is shown to be calculated by Erlang's equation. This equation has been used with great confidence for nearly 100 years to calculate the resources required to meet the incoming demand in a huge variety of service situations ranging from the capacity of telecommunications satellites to bed occupancy in hospitals. Larger maternity units can operate at higher average occupancy and as such smaller units face greater cost pressures due to their inherent inability to avoid the lower occupancy (and hence higher unit costs) that is associated with smaller size. The implications to the operation and design of maternity units are discussed.

Source: CINAHL
Available in print at Lincoln County Hospital Professional Library
Available in print at Pilgrim Hospital Staff Library
Available in fulltext from British Journal of Midwifery at EBSCOhost

Author(s) Jones, Rod
Citation: British Journal of Healthcare Management, 01 May 2012, vol./is. 18/5(251-258), 13580574
Publication Date: 01 May 2012
Source: CINAHL
Available in fulltext from British Journal of Healthcare Management at EBSCOhost

19. A Bed Management Strategy For Overcrowding In the Emergency Department.
Author(s) Barrett, Lynn, Ford, Suzanne, Ward-Smith, Peggy
Citation: Nursing Economic$, 01 March 2012, vol./is. 30/2(82-86), 07461739
Publication Date: 01 March 2012
Abstract: In 2006, the Institute of Medicine cited growing visit volumes, hospital closures, financial pressures, and operational inefficiencies as the principal reasons for emergency department (ED) overcrowding and called for regulatory measures to resolve the problem. A Midwest medical center with 59,000 annual ED visits instituted a bed management strategy to decrease the need to board, or hold, admitted hospital patients in the ED awaiting transfer to an inpatient care unit. This strategy was successful in improving the hold time from an average of 216 minutes to 103 minutes, or by 52%. This allowed the staff at the hospital to care for an additional 2,936 patients. During this same time, the overall hospital mortality decreased by 0.07% and patient satisfaction scores improved 1%. The greatest outcome from this intervention was realized in the potential revenue increase of over $2 million.
20. Role of the diabetes inpatient specialist nurse in preventing hospital admission from A&E.

Author(s) Mahaffey, Kate, Stanisstreet, Debbie, Ford, Margaret, Chapman, Linda, Summerhayes, Bev, Brown, Sabrina, George, Stella, Winocour, Peter

Citation: Journal of Diabetes Nursing, 01 February 2012, vol./is. 16/2(57-61), 13681109

Publication Date: 01 February 2012

Abstract: People with diabetes are admitted to hospital twice as often as those without the condition, and once admitted stay twice as long and can occupy 20% of hospital beds. If people with diabetes had an early review in A&E by the diabetes inpatient specialist nurse, some of these hospital admissions could be prevented. This study identified which people with diabetes attending A&E were suitable to treat and discharge home without hospital admission. A&E staff were asked to refer all patients admitted with diabetes during regular working hours to the diabetes inpatient specialist nurse. Over 3.5 years, 104 people were seen and sent home, where they continued their diabetes care safely in an outpatient setting. Prevention of admission of a sizeable number of cases with diabetes is feasible and safe. This service effectively saved £35 000 over this time through reduced bed occupancy and provided patient-focused care.

Source: CINAHL

Available in print at Pilgrim Hospital Staff Library


Author(s) Taylor, Roger

Citation: , 2012

Publication Date: 2012

Abstract: Following an explanation of the activities of the Dr Foster Unit at Imperial College, London, there are six opening paragraphs on what has been learned in 2012. The introduction explains the breadth of work which goes into the compilation of the ‘Dr Foster Hospital Guide 2012’. The chapters begin with an examination of hospitals under pressure, many with occupancy rates of between 95% and 100%, beds declining by one-third over 25 years and rising admissions despite shorter hospital stays, particularly for frail elderly people. The next chapter analyses why high mortality rates persist with hospital mortality measures listed and hospitals understaffed at weekends. Efficient hospitals can deliver good quality care. The relationship between clinical efficiency and quality is analysed by comparing mortality ratios with an index of 13 indicators of inefficient practice. The next chapter identifies opportunities for efficiency with key findings covering financial crisis, room for improvement and quality of care. A review of 13 factors of clinical efficiency found wide variations with scope for reducing costs. The worst and best performers are identified. Also examined was the cost of readmissions, unnecessary admissions and over-long stays, missed out-patient appointments and the drawbacks of weekend working. Cambridge University Hospitals NHS Foundation Trust was judged the trust of the year. Fair access to treatment is then questioned with issues including the shortcomings in treatment for older people, clinical variations and variations in access levels. The end notes supply more information on each chapter.

Source: HMIC

22. Coronary computed tomography angiography for the evaluation of patients with acute chest pain.

Author(s) Rajani R, Brum RL, Preston R, Carr-White G, Berman DS
Acute chest pain is a common presenting complaint of patients attending emergency room departments. Despite this, it can often be challenging to completely exclude a diagnosis of acute coronary syndrome following an initial standard clinical and biochemical evaluation. As a result of this, patients are often admitted to hospital until the treating clinician is satisfied that this diagnosis can be excluded. This process imparts a significant health economic burden by not only increasing hospital bed occupancy rates but also by the unnecessary layering of diagnostic investigations. With the rapid advances in coronary computed tomography angiography (CTA), there has been considerable interest in whether coronary CTA may be a viable alternative to this current standard care. We review the current literature and supporting evidence for utilising coronary CTA in the evaluation of patients presenting with acute chest pain in terms of its diagnostic accuracy, safety, cost-effectiveness and prognostic implications.

Source: CINAHL
Available in fulltext from International Journal of Clinical Practice at EBSCOhost
Available in print at Lincoln County Hospital Professional Library

23. Variation in hospital costs, payments, and profitability for cardiac valve replacement surgery.

Author(s) Robinson JC
Citation: Health Services Research, 01 December 2011, vol./is. 46/6pt1(1928-1945), 00179124
Publication Date: 01 December 2011
Source: CINAHL
Available in fulltext from Health Services Research at EBSCOhost

24. Estimating the time involved in managing the 'unoccupied bed:' a time and motion study

Author(s) Webster J., Davies H., Stankiewicz M., Fleming L.C.
Citation: Nursing Economic$, November 2011, vol./is. 29/6(317-322), 0746-1739 (2011 Nov-Dec)
Publication Date: November 2011
Abstract: Occupied bed days are often used as a demand indicator when calculating the number of nurses required to provide safe care. However, such calculations fail to take into account the amount of nursing time consumed by the "unoccupied bed." This study used direct observation time-and-motion methods to estimate the time and costs associated with a bed that is unoccupied. The average time taken to complete all of the activities associated with a bed that was unoccupied due to an internal transfer was 8.65 minutes, for a patient discharge 26.27 minutes, and for a patient admission 37.7 minutes. An average daily cost for activities surrounding these patient movements was approximately $386/day (AUD) in registered/enrolled nursing salaries alone. The unoccupied bed is not resource neutral and time associated with its maintenance should be considered when calculating nursing requirements to provide safe care.
Source: EMBASE
Available in fulltext from Nursing Economic$ at EBSCOhost
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25. The trade-off between efficiency and quality in hospital departments
Purpose: Hospital managers are confronted with decisions that have to account for multiple objectives, which may be in conflict with regard to efficiency and quality of care. In empirical studies occupancy and staffing ratios as well as in-hospital mortality are frequently used measures for efficiency and quality-of-care, respectively. Efficiency and quality measures vary on a daily basis. However, most empirical studies fail to take this variation into account, especially because data of daily staffing levels are lacking. The paper seeks to exploit the notion that staffing levels are planned according to expected occupancy levels, i.e. estimated daily occupancy levels account for unobserved daily staffing levels. Design/methodology/approach: Using administrative data from 2004 for a sample of 62 departments in 33 German hospitals, the relation between daily occupancy levels and in-hospital mortality count on the department level is analyzed. In an OLS-framework the paper estimates daily occupancy level for all departments and then uses the predicted occupancy levels in a zero-inflated Poisson (ZIP) regression framework to explain in-hospital mortality count. Findings: The results show a potential trade-off relation between predicted occupancy rates and mortality. More specifically, the paper finds that the trade-off relation is less pronounced in hospitals with a higher number of available staff per bed. Originality/value: First, the paper shows evidence for a negative trade-off between measures of managerial and medical performance on a day-to-day basis. Second, interactions between single measures of efficiency are modeled, namely predicted occupancy rate and staff per bed ratios, and policy implications are developed. Third, first empirical results in this respect using German data are presented. Emerald Group Publishing Limited.

Source: EMBASE


Author(s) Nabors S., Bountourelis T., Schaefer A., Luanghesorn L., Kharoufeh J., Maillart L., Yang W., Clermont G.

Citation: Chest, October 2011, vol./is. 140/4 MEETING ABSTRACT, 0012-3692 (October 2011)

Publication Date: October 2011

Abstract: PURPOSE: The efficient management of intensive care unit patient turnover can significantly impact patient survival, patient medical expenses, overall patient satisfaction, and hospital operating expenses. Ultimately movement within a constrained health care delivery system is a dynamic and stochastic process that often eludes traditional analysis and prediction tools. For these reasons, we developed and validated a simulation model of movement through constrained hospitals systems, focusing on the ICU. Validation focused on the ability to faithfully represent patient movement throughout the hospital system. METHODS: This pilot study consists of a retrospective analysis of a comprehensive sample of 5153 unique patients admitted to the VA Pittsburgh Health System (VAPHS) from April 27, 2010 to February 7, 2011. Data is extracted from the corresponding arrival and patient movement files to produce a cohort data set and time series analysis of patient in all inpatient units. Calculations of length-of-stay (LOS) and transition rates are produced. Blocking is defined as the difference between time of assignment and movement to specified location. Graphical simulation methodology and a commercial software packages, ARENA and ONMET, are used to create a preliminary computer simulation model of daily operations. Conceptual validation was achieved by demonstrating an animated model to clinical staff to establish face validity. Operational validation was achieved by producing Q-Q plots for comparison of two emergent characteristics produced by the model to actual recorded data. RESULTS: This model graphically depicts (i) LOS rates, (ii) transition probabilities, (iii) location blocking rates, (iv) request realization rate. The greatest blocking time and the greatest assignment difference are recorded in the MM location. When considering the emergent characteristics, blocking and bed occupancy, we observed close linear relationships between the simulated model and recorded patient movement.
CONCLUSIONS: The described validated process modeling approach simulates and accurately describes patient movement within constrained health care delivery system. CLINICAL IMPLICATIONS: Such a novel patient flow management tool will systematically and objectively aids managerial decision-making at both the unit and the hospital level.

Source: EMBASE
Available in fulltext at Chest; Notes: Username: ULHTKIS/Password: Library

27. The financial consequences of lost demand and reducing boarding in hospital emergency departments.

Author(s) Pines JM, Batt RJ, Hilton JA, Terwiesch C

Citation: Annals of Emergency Medicine, 01 October 2011, vol./is. 58/4(331-340), 01960644

Publication Date: 01 October 2011

Abstract: STUDY OBJECTIVE: Some have suggested that emergency department (ED) boarding is prevalent because it maximizes revenue as hospitals prioritize non-ED admissions, which reimburse higher than ED admissions. We explore the revenue implications to the overall hospital of reducing boarding in the ED. METHODS: We quantified the revenue effect of reducing boarding-the balance of higher ED demand and the reduction of non-ED admissions-using financial modeling informed by regression analysis and discrete-event simulation with data from 1 inner-city teaching hospital during 2 years (118,000 ED visits, 22% ED admission rate, 7% left without being seen rate, 36,000 non-ED admissions). Various inpatient bed management policies for reducing non-ED admissions were tested. RESULTS: Non-ED admissions generated more revenue than ED admissions ($4,118 versus $2,268 per inpatient day). A 1-hour reduction in ED boarding time would result in $9,693 to $13,298 of additional daily revenue from capturing left without being seen and diverted ambulance patients. To accommodate this demand, we found that simulated management policies in which non-ED admissions are reduced without consideration to hospital capacity (ie, static policies) mostly did not result in higher revenue. Many dynamic policies requiring cancellation of various proportions of non-ED admissions when the hospital reaches specific trigger points increased revenue. The optimal strategies tested resulted in an estimated $2.7 million and $3.6 in net revenue per year, depending on whether left without being seen patients were assumed to be outpatients or mirrored ambulatory admission rates, respectively. CONCLUSION: Dynamic inpatient bed management in inner-city teaching hospitals in which non-ED admissions are occasionally reduced to ensure that EDs have reduced boarding times is a financially attractive strategy.

Source: CINAHL
Available in fulltext from Annals of Emergency Medicine at the ULHT Library and Knowledge Services’ eJournal collection


Author(s) Goetz, Kristopher, Janney, Michelle, Ramsey, Kristin

Citation: Nursing Economic$, 01 July 2011, vol./is. 29/4(173-182), 07461739

Publication Date: 01 July 2011

Source: CINAHL
Available in fulltext from Nursing Economic$ at EBSCOhost
Available in fulltext from Nursing Economics$ at EBSCOhost

29. The cost of non-compliance.

Author(s) Drake, Linda, Brown, Jane, Jebb, Paul, Cumming, Stephanie

Author(s) Carey K, Burgess JF Jr, Young GJ

Citation: Health Economics, 01 May 2011, vol./is. 20/5(571-581), 10579230

Abstract: Ambulatory surgery centers (ASCs), limited-service alternatives for treating surgery patients not requiring an overnight stay, are a health-care service innovation that has proliferated in the U.S. and other countries in recent years. This paper examines the effects of ASC competition on revenues, costs, and profit margins of hospitals that also provided these services as a subset of their general services in Arizona, California, and Texas during the period 1997-2004. We identified all ASCs operating during the period in the 49 Dartmouth Hospital Referral Regions in the three states. The results of fixed effects models suggested that ASCs are meaningful competitors to general hospitals. We found downward pressure on revenues, costs, and profits in general hospitals associated with ASC presence. Copyright © 2010 John Wiley & Sons, Ltd.

Source: CINAHL

31. The Zebra index: one method for comparing units in terms of nursing care.

Author(s) Levenstam AK, Bergbom I

Citation: Journal of Nursing Management, March 2011, vol./is. 19/2(260-8), 0966-0429;1365-2834 (2011 Mar)

Abstract: AIM: To describe an approach for developing a nursing index that is based on the patients’ needs of nursing care and enables nursing costs to be calculated.BACKGROUND: Usually staffing resources are calculated as the ratio between the number of staff and the number of occupied beds per unit.METHOD: The index was developed from two parts of the Zebra method. The index factor per patient category of care was calculated first. The patient days per category of care was multiplied next with the index factor for the category, which gives the same value in terms of nursing care given for all the patient days. The third step was the calculation of the Zebra index (ZI).RESULTS: The ZI shows ‘the intensity of nursing care’ given. The index makes it possible to follow changes in the nursing care given over a period of time and it can also explain why two similar units with the same number of staff per patient can have a totally different workload situation.CONCLUSION: The ZI obtains reliable information about the changing nursing situations over a period of time.IMPLICATIONS FOR NURSING MANAGEMENT: The approach described can be used in different settings and is not bound to Sweden but can be looked upon as a general method. The index is useful for comparing different units and clinics in terms of nursing care and staffing. 2011 The Authors. Journal compilation 2011 Blackwell Publishing Ltd.

Source: Medline

Available in fulltext from Journal of Nursing Management at EBSCOhost
32. More Patients, Less Payment: Increasing Hospital Efficiency In The Aftermath Of Health Reform.

Author(s) Litvak, Eugene, Bisognano, Maureen
Citation: Health Affairs, 01 January 2011, vol./is. 30/1(76-80), 02782715
Publication Date: 01 January 2011
Abstract: A major issue for the US health care system will be accommodating the needs of the estimated thirty-two million Americans who will gain insurance coverage under the Affordable Care Act by 2019. For hospitals, a traditional response to this increased demand might be to add resources, such as more staff and beds. We argue that such actions would be unaffordable and unnecessary. Research has demonstrated that large gains in efficiency can be made through streamlining patient flow and redesigning care processes. We argue that once managed efficiently, US hospitals, on average, could achieve at least an 80-90 percent bed occupancy rate—-at least 15 percent higher than the current level—without adding beds at capital costs of approximately $1 million per bed. This article outlines a plan for hospitals to accommodate more patients without increasing beds or staff, and for policy makers to require hospitals to make these changes or provide incentives for them to do so.
Source: CINAHL

33. Improved bed use with creation of a short-stay unit in a cardiac catheterization recovery room.

Author(s) O’Brien, Patricia, O’Connell, Cheryl, Fenwick, Sandra, Stewart, Bridget, Marshall, Audrey C., Hickey, Patricia
Citation: Heart & Lung, 01 January 2011, vol./is. 40/1(56-62), 01479563
Publication Date: 01 January 2011
Abstract: Objective: To solve a capacity problem in a pediatric cardiovascular program, a 5- bed short-stay unit was created in the cardiac catheterization recovery room area within a 6-week timeframe. We describe the problem, solution, and early results in hospital performance and patient outcomes. Methods: Data were reviewed for 183 patients who underwent various cardiac catheterization procedures and recovered overnight in the cardiac short-stay unit during the first 4 months of operation. The effect on bed use throughout the cardiac program and impact on the usual recovery room operations were assessed. Results: The cardiovascular inpatient bed shortage was relieved with the creation of a 5-bed short-stay unit, and no cardiac procedures were canceled because of lack of beds during the study period. Conclusion: There was no negative impact on clinical operations in the catheterization laboratory recovery room, and the short-stay unit was cost-effective. According to the rate of admission after recovery in the short-stay unit (5/183), patient selection was appropriate.
Source: CINAHL
Available in print at Lincoln County Hospital Professional Library

34. More patients, less payment: increasing hospital efficiency in the aftermath of health reform

Author(s) Litvak E., Bisognano M.
Citation: Health affairs (Project Hope), January 2011, vol./is. 30/1(76-80), 1544-5208 (Jan 2011)
Publication Date: January 2011
Abstract: A major issue for the US health care system will be accommodating the needs of the estimated thirty-two million Americans who will gain insurance coverage under the Affordable Care Act by 2019. For hospitals, a traditional response to this increased demand might be to add resources, such as more staff and beds. We argue that such actions would be unaffordable and unnecessary. Research has demonstrated that large gains in efficiency can be made through streamlining patient flow and redesigning care processes.
We argue that once managed efficiently, US hospitals, on average, could achieve at least an 80-90 percent bed occupancy rate—at least 15 percent higher than the current level—without adding beds at capital costs of approximately $1 million per bed. This article outlines a plan for hospitals to accommodate more patients without increasing beds or staff, and for policy makers to require hospitals to make these changes or provide incentives for them to do so.

Source: EMBASE

35. Analysis & commentary: More patients, less payment: Increasing hospital efficiency in the aftermath of health reform

Author(s) Litvak E., Bisognano M.

Citation: Health Affairs, January 2011, vol./is. 30/1(76-80), 0278-2715;1544-5208 (January 2011)

Publication Date: January 2011

Abstract: A major issue for the US health care system will be accommodating the needs of the estimated thirty-two million Americans who will gain insurance coverage under the Affordable Care Act by 2019. For hospitals, a traditional response to this increased demand might be to add resources, such as more staff and beds. We argue that such actions would be unaffordable and unnecessary. Research has demonstrated that large gains in efficiency can be made through streamlining patient flow and redesigning care processes. We argue that once managed efficiently, US hospitals, on average, could achieve at least an 80-90 percent bed occupancy rate—at least 15 percent higher than the current level—without adding beds at capital costs of approximately $1 million per bed. This article outlines a plan for hospitals to accommodate more patients without increasing beds or staff, and for policy makers to require hospitals to make these changes or provide incentives for them to do so. 2011 Project HOPE - The People-to-People Health Foundation, Inc.

Source: EMBASE

36. A paradigm shift for bed occupancy.

Author(s) Jones, Rod

Citation: British Journal of Healthcare Management, 2011, vol./is. 17/8(376-377), 1358-0574

Publication Date: 2011

Abstract: Acute care is expensive and, where appropriate, all possible alternatives should be employed to minimise costs. However, we do need to ask the question—is closing hospital beds actually costing more than it saves? [Introduction]

Source: HMIC

Available in fulltext from British Journal of Healthcare Management at EBSCOhost

37. Creating efficiencies in the acute care pathway: the rapid assessment, treatment and discharge approach.

Author(s) Bowers, Alexis, Aldouri, Elham

Citation: Mental Health Review Journal, 2011, vol./is. 16/2(50-55), 1361-9322

Publication Date: 2011

Abstract: PURPOSE: Despite contemporary mental health services shifting to a community-based model of care, acute inpatient care is still necessary for many patients experiencing an acute psychological crisis. As inpatient services cost the National Health Service nearly 600 million a year, initiatives to reduce time spent in hospital, whilst maintaining safety and quality, are being actively promoted on a national level. Mental health patients in Hertfordshire spend on average two weeks in hospital during their acute crisis. The aim of this study is to reduce bed occupancy rates by implementing a novel approach to inpatient management. DESIGN/METHODOLOGY/APPROACH: A pragmatic
controlled clinical trial design was used to address the aim of this study. FINDINGS: The results demonstrate that, compared to a functionalized inpatient ward (one with a designated inpatient consultant psychiatrist conducting a weekly ward round), it is possible to reduce bed occupancy rates without increasing demand on other wards. Furthermore, 28-day readmission rates and total admissions over seven days were reduced.

RESEARCH LIMITATIONS/IMPLICATIONS: Limitations relating to the study design and potential generalisability to similar services are discussed. Further studies to triangulate the data are suggested. PRACTICAL IMPLICATIONS: This novel approach to inpatient management provides exciting data that suggest patients can be moved along the acute pathway more efficiently. Recommendations for further studies are made in light of the findings. ORIGINALITY/VALUE: This paper will appeal to acute care clinicians, service managers, and commissioners of mental health services. It provides an evidence base for making efficiencies within the acute service whilst maintaining quality of care for patients.

Source: HMIC

38. Feasibility of establishing a regional weaning unit in Scotland: Modelling resource implications and costs

Author(s) Lone N.I., Sorensen D., Walsh T.S.

Citation: Thorax, December 2010, vol./is. 65/(A7-A8), 0040-6376 (December 2010)

Publication Date: December 2010

Abstract: Introduction: Intensive care (ICU) admission is usually mandatory for patients requiring mechanical ventilation (MV). A proportion of patients require prolonged MV (PMV). In other countries, specialised weaning units allow stable PMV patients to be discharged from the ICU. These units offer cost savings because of lower staff-to-patient ratios. A recent report of UK ICU services recommended that hospitals review the need for specialised weaning centres locally. Aims: To assess the feasibility of establishing a weaning unit in a Scottish health board region and to model the potential impact on ICU services. Methods All admissions to the three adult ICUs in our health board requiring PMV (>= 21 days MV) during a 2-year period (2005e2006) were extracted from the Scottish Intensive Care Audit Group database. Four hypothetical weaning units were modelled using different admission criteria, ranging from Unit-A, which required a prolonged period of stability prior to transfer from ICU to the weaning unit (7 days free of both cardiovascular support (CVS) and renal replacement therapy), to Unit-D (2 days free of CVS only). The date of eligibility for each PMV patient for each unit was determined. We used remaining length of stay (LOS) in ICU after eligibility to calculate occupancy rate, refusal rate and net cost saving, varying unit capacity from 1 to 8 beds. Results: During 2005e2006, 126 patients required PMV. Of these, the number eligible for transfer to a weaning unit varied from 101 (Unit-A) to 117 (Unit-D). Mean ICU LOS after reaching eligibility varied from 14.9 to 15.3 days. Occupancy rates for Unit-A ranged from 90.8% to 25.5% (1-bed to 8-bed unit) and for Unit-D from 93.3% to 30.5%. Refusal rates for Unit-A ranged from 88.1% to 0%, and for Unit-D 92.3% to 0%. The greatest cost saving was for Unit- D with 3 beds ( 344 025) (Abstract S9 Figure 1).(Figure presented) Conclusion: PMV patients use 25% of ICU bed-days in our region. Establishing a 3-bed weaning unit could lead to a reduction of 800 ICU bed-days, a net annual cost saving of 340 000, and acceptable occupancy (70%) and refusal (30%) rates. Establishing such a unit would be feasible in our health board region.

Source: EMBASE

Available in fulltext from Thorax at Highwire Press

39. Hospital bed occupancy: More than queuing for a bed

Author(s) Keegan A.D.

Citation: Medical Journal of Australia, September 2010, vol./is. 193/5(291-293), 0025-729X;1326-5377 (06 Sep 2010)

Publication Date: September 2010

Abstract: * Timely access to safe hospital care remains a major concern. Target bed-
occupancy rates have been proposed as a measure of the ability of a hospital to function safely and effectively. * High bed-occupancy rates have been shown to be associated with greater risks of hospital-associated infection and access block and to have a negative impact on staff health. * Clinical observational data have suggested that bed occupancies above 85% could adversely affect safe, effective hospital function. Using this figure, at least initially, would be of value in the planning and operational management of public hospital beds in Australia. * There is an urgent need to develop meaningful outcome measures of patient care that could replace the process measures currently in use.

Source: EMBASE

40. Emergency department throughput, crowding, and financial outcomes for hospitals.

Author(s) Handel DA, Hilton JA, Ward MJ, Rabin E, Zwemer FL Jr., Pines JM

Citation: Academic Emergency Medicine, 01 August 2010, vol./is. 17/8(840-847), 10695663

Publication Date: 01 August 2010

Source: CINAHL

Available in fulltext from Academic Emergency Medicine at EBSCOhost

41. Hospital capacity planning: from measuring stocks to modelling flows.

Author(s) Rechel B, Wright S, Barlow J, McKee M

Citation: Bulletin of the World Health Organization, 01 August 2010, vol./is. 88/8(632-636), 00429686

Publication Date: 01 August 2010

Abstract: The metric of “bed numbers” is commonly used in hospital planning, but it fails to capture key aspects of how hospital services are delivered. Drawing on a study of innovative hospital projects in Europe, we argue that hospital capacity planning should not be based on beds, but rather on the ability to deliver processes. We propose using approaches that are based on manufacturing theory such as “lean thinking” that focuses on the value that different processes add for the primary customer, i.e. the patient. We argue that it is beneficial to look at the hospital, not from the perspective of beds or specialties, but rather from the path taken by the patients who are treated in them, the respective processes delivered by health professionals and the facilities appropriate to those processes. Systematized care pathways seem to offer one avenue for achieving these goals. However, they need to be underpinned by a better understanding of the flows of patients, work and goods within a hospital, the bottlenecks that occur, and translation of this understanding into new capacity planning tools. Copyright © 20010 World Health Organization

Source: CINAHL

Available in fulltext from Bulletin of the World Health Organization at EBSCOhost

42. UTILIZATION of 7 clinical decision units in Ontario’s pilot program

Author(s) Vermeulen M.J., Leaver C.A., Guttmann A., Rowe B.H., Schull M.J.

Citation: Canadian Journal of Emergency Medicine, May 2010, vol./is. 12/3(257), 1481-8035 (May 2010)

Publication Date: May 2010
Abstract: Introduction: Clinical decision units (CDUs) within emergency departments (EDs) have been proposed as a means of improving patient flow by reducing length of stay (LOS) and/or the need for admission in selected patient groups. In 2008, the Ontario Ministry of Health introduced physician funding for CDUs in 7 EDs. We undertook a preliminary evaluation of this pilot program. Methods: We conducted a retrospective analysis of unscheduled ED visits at all 7 CDU pilot sites in the first 11 months of implementation (October 2008 to September 2009) using routinely collected administrative data and key informant interviews, examining trends in CDU utilization and occupancy (measured as the percentage of designated CDU bed-hours occupied in each 24-hour period) as well as ED visit characteristics of CDU and non-CDU patients. Results: CDU admissions comprised 3.2% of ED visits (range across sites 1.8%-4.7%); the average daily number of CDU patients was 4.2 (2.2-5.7); occupancy was 47.6% (22.4%-72.8%). CDU patients were older (mean [SD] age 56.4 [21.6] v. 44.5 [24.5]) and were typically triaged as higher acuity (43.5% v. 21.3% resuscitation/ emergent) than non-CDU patients. For CDU patients, the median (IQR) and 90th percentile ED LOS, including CDU LOS, were 12.9 (8.8-19.4) and 26.3 hours, respectively; median (IQR) CDU LOS was 8.2 (4.8-14.1) hours. CDU patients were more likely to be admitted than non-CDU patients (19.8% v. 15.2%). The most common indications for CDU admission were chest pain (17.2%) and abdominal pain (9.0%). Among non-CDU patients, up to 6.9% were potentially eligible for admission to the CDU (based on a predefined indication for CDU admission and an ED LOS of > 6 hours). Conclusion: CDU utilization varied substantially and there appears to be potential for increasing use. In general, CDU patients were older and more acute/complex than non-CDU patients. The next phase of this study will examine the overall impact of the pilot program with respect to ED crowding, ED revisit and short-term admission rates.

Source: EMBASE

43. Evaluation of a pilot service to reduce the length of stay of patients with diabetes

Author(s) Neupane S., Mathews A.A., Krishnan S.M.

Citation: Diabetic Medicine, March 2010, vol./is. 27/2 SUPPL. 1(147), 0742-3071 (March 2010)

Publication Date: March 2010

Abstract: Objectives: A significant proportion of hospital beds in the NHS are occupied by patients with diabetes. These patients stay longer irrespective of the cause of admission thereby increasing bed occupancy and financial burden to the NHS. Our aim was to assess the impact of regular specialist diabetes team input in reducing Length Of Stay (LOS). Methods: A pilot service by the specialist diabetes team, consisting of a consultant diabetologist and a diabetes specialist nurse was rolled out from July 2008. This involved formal weekly ward rounds for inpatients with diabetes in medical, surgical and orthopaedic wards. A retrospective audit of all diabetes inpatients from January 2008 to January 2009 was conducted. Data was collected electronically from the hospital coding database. Results: A total number of 1727 episodes of inpatient admissions with diabetes were identified. The 1062 day case episodes were excluded. 11% had Type 1 diabetes and 89% had Type 2 diabetes. During the study period the average LOS of the remaining 665 episodes was 8.06 days (Range - 1 to 135). 6 months prior to this pilot service the average LOS was 8.5 days. The average LOS reduced to 7.6 days, during the 6 months after commencing the service. Average LOS for common diabetes related admissions were: diabetic ketoacidosis - 5 days, hypoglycaemia - +/- days, and diabetic foot ulcer - 28 days. Conclusion: Our audit clearly demonstrates that a regular weekly ward round by the specialist diabetes team significantly reduces length of stay of inpatients with diabetes. This reduction in the bed occupancy in turn will have considerable positive impact on resources of NHS.

Source: EMBASE

Available in fulltext from Diabetic Medicine at the ULHT Library and Knowledge Services' Journal collection

Available in fulltext from Diabetic Medicine at EBSCOhost
44. Public hospital bed crisis: Too few or too misused?

Author(s) Scott I.A.

Citation: Australian Health Review, 2010, vol./is. 34/3(317-324), 0156-5788;0159-5709 (2010)

Publication Date: 2010

Abstract: *Increasing demand on public hospital beds has led to what many see as a hospital bed crisis requiring substantial increases in bed numbers. By 2050, if current bed use trends persist and as the numbers of frail older patients rise exponentially, a 62% increase in hospital beds will be required to meet expected demand, at a cost almost equal to the entire current Australian healthcare budget. *This article provides an overview of the effectiveness of different strategies for reducing hospital demand that may be viewed as primarily (although not exclusively) targeting the hospital sector increasing capacity and throughput and reducing readmissions or the non-hospital sector facilitating early discharge or reducing presentations and admissions to hospital. Evidence of effectiveness was retrieved from a literature search of randomised trials and observational studies using broad search terms. *The principal findings were as follows: (1) within the hospital sector, throughput could be substantially improved by outsourcing public hospital clinical services to the private sector, undertaking whole-of-hospital reform of care processes and patient flow that address both access and exit block, separating acute from elective beds and services, increasing rates of day-only or short stay admissions, and curtailing ineffective or marginally effective clinical interventions; (2) in regards to the non-hospital sector, potentially the biggest gains in reducing hospital demand will come from improved access to residential care, rehabilitation services, and domiciliary support as patients awaiting such services currently account for 70% of acute hospital bed-days. More widespread use of acute care and advance care planning within residential care facilities and population-based chronic disease management programs can also assist. *This overview concludes that, in reducing hospital bed demand, clinical process redesign within hospitals and capacity enhancement of non-hospital care services and chronic disease management programs are effective strategies that should be considered before investing heavily in creating additional hospital beds devoid of any critical reappraisal of current models of care.

What is known about the topic There is a growing demand for inpatient care in Australia, with presentations to public hospital emergency departments increasing by 4.9% per year over the last 5 years and admission numbers increasing by 3.6% per year. Increasing numbers of hospital beds may give only short-term reprieve in lowering bed occupancy rates if little attention is given to improving hospital efficiency by internal process redesign or by decreasing demand for acute hospital beds by improving capacity of the non-hospital sector to manage sub-acute illness and chronic disease. What does this paper add This article provides a narrative meta-review of the evidence of effectiveness of various reform strategies. The key findings are that, within the hospital sector, patient throughput could be substantially improved by: outsourcing public hospital clinical services to the private sector where appropriate; implementing whole-of-hospital reforms, which facilitate more flexible and dynamic bed management (especially where it relates to systems of care for acutely ill patients); separating acute from elective beds and services; increasing the numbers of day-only admissions; and curtailing ineffective or marginally effective clinical interventions. However, the potentially biggest gains in hospital productivity will come from improved access to residential care, rehabilitation services and domiciliary support for hospitalised patients who no longer require acute inpatient care, combined with decreased need for hospitalisation as a result of population-based chronic disease management programs led by primary care agencies, and acute care and advance care planning within residential care facilities. What are the implications for practitioners A public debate must start now on how the healthcare system and the role within it of hospitals should be re-configured in managing future population healthcare needs in a sustainable way. In the meantime, all hospitals must consider implementing reforms with potential to improve their productivity and reduce access block for those who really need acute hospital care. 2010 AHHA.

Source: EMBASE

45. Reducing room turnaround time at a regional hospital.

Author(s) Brown EC, Kros J
Abstract: Room turnaround time is a vital measure of performance for a number of service industries. For hospitals, reducing the room turnaround time leads to increased revenues as well as increased patient satisfaction. If a room is ready sooner, a waiting patient is required to spend less time in the emergency department. This article explores one hospital's approach to reduce room turnaround time. Process-mapping techniques as well as heuristic approaches integrated into an existing bed-tracking system are examined. The article also explores the practical steps the hospital took to improve room turnaround time. Infection control is a requirement for any hospital; therefore, an examination of the current room-cleaning procedures is included to verify that the improved room turnaround time did not come at the expense of infection control. Using initial data from 2004 and current data from 2008, the magnitude of the reduction in room turnaround time is analyzed.
52. Limitations of the HRG tariff: excess bed days.

Author(s) Jones R

Citation: British Journal of Healthcare Management, 01 August 2008, vol./is. 14/8(354-355), 13580574

Publication Date: 01 August 2008

Source: CINAHL

Available in fulltext from British Journal of Healthcare Management at EBSCOhost

Modelling costs of bed occupancy and delayed discharge of post-stroke patients

M Barton, S McClean, L Garg … - … (WHCM), 2010 IEEE …, 2010 - ieeexplore.ieee.org

Abstract Stroke is the major cause of disability in the UK, costing the economy £7 billion per annum. Prolonged length of stay (LOS) in hospital is considered to be an inefficient use of resources and is in part due to bed blocking. We present results of survival analyses …

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L. Evers, J.M. Oostrum, A.P.M. Wagelmans - 2010 - repub.eur.nl

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Sep 20, 2010 – Modelling costs of bed occupancy and delayed discharge of post-stroke patients. Maria Barton¹, Sally McClean¹, Lalit Garg², Ken Fullerton². ¹ School of ...

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www.kingsfund.org.uk/projects/reducing-acute-care-bed-utilisation
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Dec 14, 2011 – COPIES OF MEDICARE COST REPORTS ... Our experience working with Virginia Hospital Bed Utilization data files allows us to query and package the data ...

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