

Quality & Safety at Hadassah - Progress Report

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Executive summary

In a fifth year of activity, from a variety of projects for clinical quality & safety being conducted at Hadassah, the present report focuses on evaluation of performance in the following areas: appropriateness of coronary revascularization; quality of elective surgery for inguinal hernia repair; reduction of neurosurgical shunt infections; quality of plastic surgery after mastectomy and hand-washing by medical staff. Progress is being made on previously started projects, including: improved glucose control for hospitalized patients; palliative care; patient's empowerment to improve effectiveness and safety of oral anticoagulation; perioperative prevention of clots; and improved patient's instructions after fractures. Special tasks include evaluation of performance by a specific surgeon. Other activities consist of workshops, presentations and publications at national and international platforms, including over 30 abstracts presented at the 2006 meeting of the Israeli Society for Quality in Medicine - including an Award-winning Poster and the development of a website for the Center.

In conclusion, diverse projects attempt to make healthcare at Hadassah more patient-centered, more evidence-based and more system-minded. While in some areas, noticeable improvements have been achieved, it is increasingly apparent that further successes require a systematic mode of monitoring and feedback.

The Center for Clinical Quality and Safety is a small team coaching students from the Faculty of Medicine on projects in quality. The Committee for Quality & Safety, oversees a variety of projects on patient's safety and satisfaction, many of which have been described in previous reports. The following pages describe progress made on specific projects.

APPROPRIATENESS OF CORONARY REVASCULARIZATION: ADHERENCE TO CLINICAL PRACTICE GUIDELINES

Project participants: Dr. Dalit Cayam-Rand, Prof. Amir Elami, Dr. Ronny Alcalai and Prof. Mayer Brezis (with the Heart Institute & the Department of Cardiothoracic Surgery)

Background: Coronary revascularization procedures have proven to be life-saving for some patients and have revolutionized the treatment of cardiovascular disease. Although these procedures are widely employed at Hadassah, no formal assessment of the appropriateness of their use has been done. With the development of clinical practice guidelines, appropriateness of use can be evaluated, leading to potential improvement in quality of medical care by reducing over-use, under-use and mis-use of interventional procedures.

Development of guidelines: Institutional guidelines were developed by a team of senior cardiologists and cardiac surgeons at Hadassah, in collaboration with the Center for Clinical Quality & Safety. The guidelines were derived from the recommendations by the American College of Cardiology and the American Heart Association and adapted on the basis of most recent literature. The guidelines were approved by the staffs of both the Heart Institute and the Department of Cardiothoracic Surgery at Hadassah. Six months after their approval, implementation of the guidelines was examined. Level of adherence to guidelines was determined on a scale of 1-5 - adapted from the methodology developed by the RAND Corporation and described in studies about quality of care.¹ Ratings of 1-4 were deemed appropriate and a rating of 5 was considered inappropriate. The number and percentage of patients with scores of appropriate and inappropriate were calculated.

¹ Leape LL, Hilborne LH, Schwartz JS, et al. The appropriateness of coronary artery bypass graft surgery in academic medical centers Working Group of the Appropriateness Project of the Academic Medical Center Consortium. Ann Intern Med 1996;125:8-18

Method: A prospective observational cohort included 318 patients who underwent coronary angiography at Hadassah between January 17 and March 8, 2005. Patient files and angiogram reports were analyzed for the following variables: patient presentation, number and type of coronary arteries involved, characteristics of lesions, previous procedures on the involved lesion, co-morbidities - such as diabetes mellitus or renal failure and in relevant cases, results of cardiac scans and left-ventricular function were assessed. Each case was assigned the appropriate care according to the guidelines. Comparison with care given allowed determination of level of appropriateness.

Results: As shown in the table below, during the period examined, the rate of overall inappropriateness for revascularization procedures was 5.7%. If corrected for those patients with abnormal coronaries (excluding 84 patients with normal coronaries), the rate of inappropriateness was 7.7%.

Overall inappropriateness rate: 5.7%
Corrected inappropriateness rate: 7.7%

Score	N (%)
1	271 (85.2%)
2	19 (6.0%)
3	6 (1.9%)
4	4 (1.3%)
5*	18 (5.7%)

- 1 – complete adherence to guidelines
- 2 – adherence to guidelines when both procedures are appropriate
- 3 – deviation from guidelines for medical reasons
- 4 – deviation from guidelines due to patient preference
- 5 – deviation from guidelines without notable reason

As shown in the table below, inappropriateness was found among specific subgroups of patients, with triple-vessel disease, diabetes mellitus or renal failure, and lesions in proximal left-anterior descending artery at high-risk for percutaneous coronary intervention (PCI).

Rates of appropriateness according to angiogram results			
Angiogram result	N	Appropriate	Inappropriate
Normal coronaries or insignificant disease	86	86 (100%)	0 (0%)
Single-vessel disease	99	95 (96%)	4 (4%)
Double-vessel disease	71	70 (98.6%)	1 (1.4%)
Triple-vessel disease (TVD)	62	49 (79%)	13 (21%)
TVD & diabetes or renal failure	20	7 (35%)	13 (65%)
Proximal LAD with high risk for PCI	17	10 (59%)	7 (41%)

Conclusions: The rate of complete deviation from guidelines is low. Possible explanations include: remaining controversy (despite general acceptance of the guidelines) about recommendations in specific subgroups of patients; "self-referral" by cardiologists and potential suboptimal discussion with the patient of all options prior to treatment.

These results are important in the light of recent reports suggesting that for patients with two or more diseased coronary arteries, surgery may be associated with better long-term survival than stenting.^{2,3}

These results were presented and discussed at a recent meeting of the Heart Institute. It was concluded that better information of patients about options including surgery is warranted.

² Hannan EL, Racz MJ, Wallford G, et al. Long-term outcomes of coronary-artery bypass grafting versus stent implantation. N Engl J Med 2005;352:2174-2183.

³ Taggart DP. Surgery is the best intervention for severe coronary artery disease. BMJ 2005;330:785-786.

EVALUATION OF QUALITY OF ELECTIVE SURGERY FOR INGUINAL HERNIA REPAIR IN ADULTS AND IN CHILDREN AT HADASSAH

Project participants: Dr. Tal Yemini, Dr. Mahmid Badriah, Dr. Yoav Mintz, Prof. Raphael Udassin, Prof. Avraham Rivkind and Prof. Mayer Brezis ((with the Departments of General and Pediatric Surgery, Ein Kerem and Mt Scopus)

Background: Elective repair of inguinal hernia is a common procedure. In evaluating performance for this frequent procedure, we sought to get an insight into the quality of general surgery both in adults and children at Hadassah.

Methods: The treatment of patients admitted in the year of 2005 for elective surgical repair of an inguinal hernia was reviewed. Excluded were patients with emergent, complicated or recurrent surgery and bilateral hernia in young infants. A telephone survey done 4-6 weeks after discharge from the hospital included questions related to patient satisfaction, pain, return to normal activity and complications such as infection. Data were compared to the literature when possible.

Results: Data regarding the treatment of 114 adults (age 14-87) and 102 children (age 2-6) were available for review. Satisfaction was high to very high in 94%, both for adults and children; 88% of adult patients and 95% of parents would recommend having such operation at Hadassah. Problems encountered related to waiting and relation with staff. In children, average time taking analgesics was 1 day and 3-4 days were needed before return to normal activity. In adults, average time taking analgesics was 5 days and 10-15 days were needed before return to normal activity, in concordance with reports in the literature.^{4,5} The tables below show the rate of complications in comparison with literature.

Rate of complications: infections

	Rate	95% CI*	Range reported in literature ⁶
Children	6%	2-13	0.7-14%
Adults	12%	7-20	

* CI, confidence interval

⁴ Bay-Nielsen M, Thomsen H, Andersen FH, Bendix JH, Sorensen OK, Skovgaard N, Kehlet H; Convalescence after inguinal herniorrhaphy. Br J Surg (2004 Mar) 91(3):362-7.

⁵ Jones KR, Burney RE, Peterson M, Christy B; Return to work after inguinal hernia repair. Surgery (2001 Feb) 129(2):128-35

⁶ Yerdel MA, Akin EB, Dolalan S, Turkcapar AG, Pehlivan M, Gecim IE et al .Effect of single-dose prophylactic ampicillin and sulbactam on wound infection after tension-free inguinal hernia repair with polypropylene mesh: the randomized, double-blind, prospective trial. Ann Surg.33-26 :233 ;2001

Rate of complications: hematomas

	Rate	95% CI*	Range reported in literature ^{7,8}
Children	10%	5-18	11-15%
Adults	13%	8-21	

* CI, confidence interval

Discussion: The literature on surgical site infections (SSI) shows⁹ that the range of reported infection is quite variable, depending on the site of the study, its methodology (did the survey include post-discharge data? at a time infection often becomes apparent), its motivation (is it voluntary or mandatory?). For instance, voluntary reporting systems by US hospitals, such as NNIS¹⁰ or the National Surgical Infection Prevention Collaborative,¹¹ report rates of surgical site infections ranging from 0.8% to 5.2%. By contrast, the NHS (a mandatory reporting by UK hospitals) shows rates of 10-20%.

Of note, about 10% of adults were still having more pain after the surgery than before and about the same percent have not yet returned to work after 4-6 weeks. These results are consistent with the notion that patients with minimally symptomatic hernia may not need surgical repair.¹²

Conclusion: Performance of surgical repair at Hadassah is consistent with standards reported in the international literature. We could not find similar reports from other Israeli hospitals. Importantly, measurement of rate of infection and feedback to surgeons has recently been shown to be an efficient tool to improve performance and reduce infection rates.^{13,14}

⁷ Bailey IS, Karran SE, Toyn K, Brough P, Ranaboldo C, Karran SJ; Community surveillance of complications after hernia surgery. *BMJ* (1992 Feb 22) 304(6825):469-71

⁸ Neumayer L, Giobbie-Hurder A, Jonasson O, et al. Open mesh versus laparoscopic mesh repair of inguinal hernia. *N Engl J Med* 2004;350:1819-1827

⁹ Wilson AP, Gibbons C, Reeves BC, Hodgson B, Liu M, Plummer D et al. Surgical wound infection as a performance indicator: agreement of common definitions of wound infection in 4773 patients. *BMJ* 2004; 329: 720

¹⁰ National Nosocomial Infections Surveillance (NNIS) System Report, data summary from January 1992 through June 2003, issued August 2003. *Am J Infect Control* 2003;31:481-498.

¹¹ Dellinger EP, Hausmann SM, Bratzler DW, et al. Hospitals collaborate to decrease surgical site infections. *The American Journal of Surgery*. 2005;190(1):9-15

¹² Fitzgibbons RJ Jr, Giobbie-Hurder A, Gibbs JO, et al. Watchful waiting vs repair of inguinal hernia in minimally symptomatic men: a randomized clinical trial. *JAMA*. 2006;295:285-292.

¹³ Wilson APR, Hodgson B, M. Liu BM, D. Plummer, I. Taylor, J. Roberts, M. Jit, C. Sherlaw-Johnson: Reduction in wound infection rates by wound surveillance with postdischarge follow-up and feedback. *British Journal of Surgery* 2006;93:630-638

¹⁴ Eveline L. P. E. Geubbels , Nico J. D. Nagelkerke , A. Joke Mintjes-De Groot , Christina M. J. E. Vandenbroucke-Grauls , Diederick E. Grobbee , and Annette S. De Boer. Reduced risk of surgical site infections through surveillance in a network. *Int J Qual Health Care* 18: 127-133.

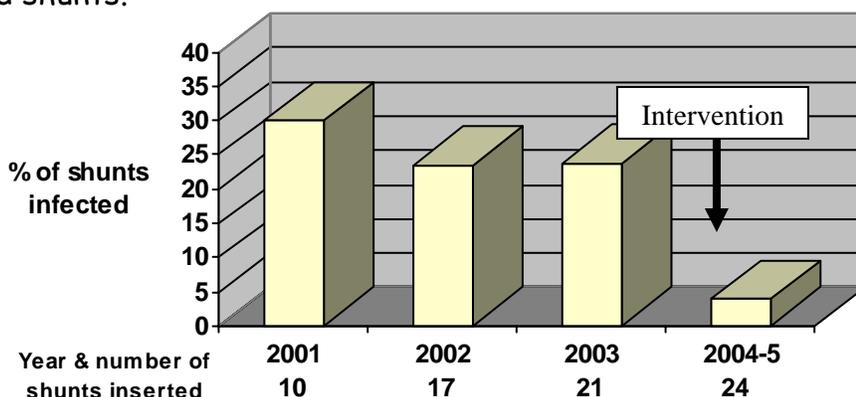
CAN WE REDUCE NEUROSURGICAL SHUNT INFECTIONS?

Project participants: Dr. Ido Paldor, Dr. Zvi Israel, Prof. Colin Block and Prof. Mayer Brezis (with the Departments of Neurosurgery and Infectious Diseases)

Background: Hydrocephalus (intracranial accumulation of cerebrospinal fluid due drainage obstruction) is a neurosurgical condition treated by the insertion of a shunt (draining fluid from the ventricles). Infection remains a serious complication of shunt insertion, with a high mortality rate. Shunts coated with antibiotics have recently been suggested to reduce the rate of infection.¹⁵

Methods: A survey of the rate of shunt infection at the Department of Neurosurgery was designed, including data regarding the type of surgery, co-morbidity, clinical and microbiological evidence of infection. In the year of 2004, antibiotic-coated shunts were introduced for routine use in a prospective trial period.

Results: The rate of shunt infection is shown in the chart below, before and after the intervention based on the introduction of antibiotic-coated shunts.



It appears that this intervention has reduced the rate of infection from an average of nearly 25% to less than 5%. Mortality from infection was around 50% before the intervention; no death has occurred after the intervention.

Conclusion: This preliminary analysis suggests that it is possible to reduce neurosurgical shunt infections as recently reported by others.¹⁶

¹⁵ Zabramski JM, Whiting D, Darouiche RO, Horner TG, Olson J, Robertson C, Hamilton AJ. Efficacy of antimicrobial-impregnated external ventricular drain catheters: A prospective, randomized, controlled trial. *J Neurosurg* 98:725-730, 2003.

¹⁶ Sloffer CA, Augspurger L, Wagenbach A, Lanzino G. Antimicrobial-impregnated External Ventricular Catheters: Does the Very Low Infection Rate Observed in Clinical Trials Apply to Daily Clinical Practice? *Neurosurgery* 56:1041-1044, 2005.

QUALITY OF RECONSTRUCTION SURGERY AFTER MASTECTOMY

Project participants: Dr. Ravit Yanco, Dr. Matan Cohen, Dr. Ehud Kleiner, Dr. Helen Green, Dr. Avraham Neuman (with the Department of Plastic Surgery)

Background: Plastic reconstruction surgery after mastectomy for breast cancer is an important part of management, with potential considerable impact on quality of life for those women. Various modalities of surgery (immediate or delayed) use several types of tissue expanders or implants. It was an initiative of the Department to examine the outcomes of those procedures.

Methods: The results of management were reviewed for 146 women who had undergone reconstructive surgery after mastectomy between the years 2000-2005. The data collected included type of surgery/implants, co-morbidity, mode of cancer treatment (radiation and/or chemotherapy), seniority of surgeon (Resident or Senior), and occurrence of complications - defined as mild (such as pain, delayed healing, infection or hematomas) or severe (such as need for readmission or re-operation, for instance for prosthesis failure).

Results: The rate of complications is shown in the table below.

Rate of surgical complications in breast reconstruction

Type of Complication	Type of implant			Seniority of surgeon	
	"Anatomical"	"Round"	"Expander"	Resident	Senior
Mild	67%	40%	48%	63%**	45%
Severe	39%*	18%	10%	23%	15%

*p=0.01 for anatomical vs. other types of implants; **p<0.05 vs. Senior

Severe complications occurred more often with one type of implant ("anatomical"). Mild complications were frequent, occurring in nearly half of women. Complication rate was higher for residents in comparison to senior surgeons. While 75% of women had undergone immediate reconstruction, the rate of complications was not different than for those having a delayed procedure.

Conclusion: These results, including fairly high rates of complications, are consistent with outcomes reported in the USA.¹⁷

¹⁷ Henriksen TF, Fryzek JP, Hölmich LR, et al. Reconstructive breast implantation after mastectomy for breast cancer: clinical outcomes in a nationwide prospective cohort study. Arch Surg. 2005;140:1152-1159.

HAND-WASHING BY MEDICAL STAFF

Project participants: Dr. Dror Cantrell, Prof. Zvi Stern, Prof. Colin Block & Prof. Mayer Brezis (with the Department of Clinical Microbiology)

A survey of hand-washing by physicians between patient contacts at Hadassah show great variation in compliance to hygiene guidelines: from 80-96% adherence (in pediatrics & neonatal unit) to 50-80% (in internal medicine and some surgical wards) and to 30% or less (in other surgical wards, orthopedics and ER). Adherence was significantly lower (28%) when no sink was present in the patient's room than when it was (61%). These rates are not substantially different from those reported elsewhere: compliance with hand hygiene remains poor in most institutions — often in the range of 40 to 50 percent.¹⁸ This relates to a multiplicity of factors, including the additional time needed for hand-washing (with water and soap) and drying between each patient contact by physicians. Improved hygiene and reduced cross-infection rates have been observed with the introduction of alcohol-based gels.¹⁹ Solutions to the problem of hand hygiene were discussed in a recent issue of the *New England Journal of Medicine*:²⁰

"The system is partly to blame. First, staff members must not be so seriously overworked that they do not have time to perform important standard procedures. Second, many hospitals do not have programs to ensure that caregivers are adequately educated — that they know exactly how much alcohol to apply, how long to rub their hands together, and which skin surfaces are most important to cover. Once educated, caregivers should also have their hand-hygiene competency assessed and certified. And then they must have reliable access to alcohol-based antiseptics at the point of care, which requires a foolproof system for refilling dispensers before they have run dry. Dispensers must be functional and must reliably deliver the appropriate amount of alcohol. Although the alcohol-based rubs in current use are gentle on the hands, lotions should also be easily accessible, in case of irritation. Clearly, the resolution of such system issues is not terribly complicated; in the realm of hand hygiene, near-perfect reliability should be achievable."

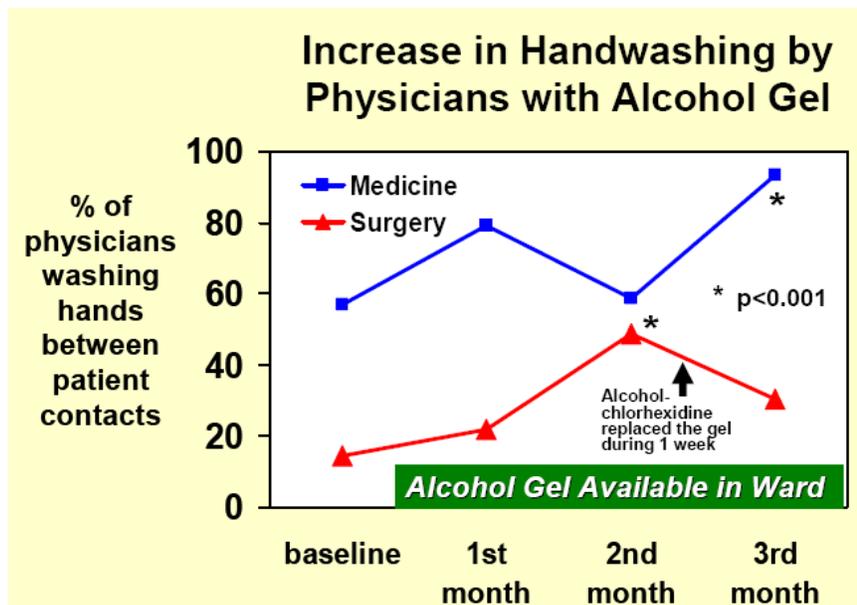
¹⁸ Pittet D, Mourouga P, Perneger TV. Compliance with handwashing in a teaching hospital. *Ann Intern Med* 1999;130:126-30.

¹⁹ MacDonald A, Dinah F, MacKenzie D, Wilson A. Performance feedback of hand hygiene, using alcohol gel as the skin decontaminant, reduces the number of inpatients newly affected by MRSA and antibiotic costs. *J Hosp Infect.* 2004;56 :56 –63

²⁰ Goldman, D. System Failure versus Personal Accountability -- The Case for Clean Hands *N Engl J Med* 2006 355: 121-123

"Imagine, then, a hospital that has perfected its hand-hygiene system and monitors it regularly to detect failures. If a caregiver in such an institution neglects to perform hand hygiene when leaving the bedside in any case except a life-threatening emergency, it is no longer logical to blame the system." When a doctor can reduce the spread of antibiotic-resistant bacteria by simple hand hygiene, repeated violation of such a practice could be viewed as a failure of personal accountability.

An intervention, at Hadassah, to improve compliance in wards found to have poor performance of hand-washing, included dispensing alcohol gel and organizing lectures to ward staff by a senior infectious disease specialist. The observations depicted in the chart below show an increase in hand-washing in two departments (one of Medicine, one of Surgery).



Of note (in the lower part of the chart), the type of the alcohol rub appears to matter: accidental replacement in Surgery, of the alcohol gel by another alcohol-based antiseptic (without gel) was disliked by the staff, probably because the gel component helps decrease irritation of skin with repeated alcohol application.

Conclusion & future plan: Hadassah central management has declared this year "the year for prevention of infections". A special committee for Infection Prevention is currently designing a system-wide intervention that would include: dispensing alcohol gel, education and feedback with periodic monitoring of adherence. This project could have considerable impact on the difficult and costly problem of cross-infections by bugs increasingly resistant to multiple antibiotics.

PROGRESS ON PREVIOUSLY STARTED PROJECTS

Progress in being made on several projects described in previous reports.

1) Improved glucose control for hospitalized patients with diabetes. The intervention, important for the prevention of infections and other in-hospital complications, is now being systematically applied to all intensive care units at both Hadassah hospitals. This intervention will require a nurse on part-job to educate teams about the new algorithms for insulin management in acute care setting.

2) Improvement of palliative care. The new Law passed in Israel on the care at the end-of-life obligates palliative care for both patients and their families. A half-day conference was recently held at Hadassah with national experts on the Law and with discussion of actual cases for the education of nurses and physicians. A six-week workshop on palliative care for wards team will also take place at Hadassah in September 2006.

3) Patient's empowerment (self-monitoring and self-management) improves the effectiveness and the safety of oral anticoagulation. A kit for both patients and family physicians has now been produced as hard copies (also available at the website of the Center - see below). The implementation of this training is being extended to other departments.

4) Perioperative prevention of clots. Our observations have now been published in the International Journal of Quality in Health Care.²¹ A follow-up of this intervention, with the help of a part-time nurse, has shown maintained improvement in most wards and yet, adherence to guidelines is still suboptimal. Until electronic monitoring and reminder is being possible, the place of such a nurse for continued education, monitoring and feedback, should be considered.

5) Improved patient instructions at discharge after hip or forearm fractures. Because osteoporosis is highly prevalent in patients with these types of fracture, further fractures can be effectively prevented by life-style interventions (exercise and smoking cessation) and medications (bisphosphonates or vitamin D).²² A leaflet with such explanations is now being tested and this project is in progress.

²¹ Grupper A., Grupper A., Rudin D., Drenger B., Varon D., Gilon D., Gielchinsky Y., Menashe M., Mintz Y., Rivkind A. and Brezis M. (2006) Prevention of perioperative venous thromboembolism and coronary events: differential responsiveness to an intervention program to improve guidelines adherence. Int J Qual Health Care 18(2), 123-6.

²² Majumdar SR, Rowe BH, Folk D, et al. A Controlled Trial To Increase Detection and Treatment of Osteoporosis in Older Patients with a Wrist Fracture. Ann Intern Med. 2004;141(5):366-373.

EVALUATION OF SPECIFIC PATIENT CARE

Evaluation of performance by a specific surgeon

At a special request by hospital management, Dr. Rami Oren, from the Center of Clinical Quality & Safety, evaluated the performance by a surgeon at the department Urology, being considered for tenureship at Hadassah. Analysis made use of administrative data about length of stay and re-admissions (as a measure of complications), need for recurrent operation (as a measure of suboptimal initial surgery) and mortality, adjusted for the complexity and type of initial diagnosis.

Several tables of data covering 3 years from September 2002 to November 2005 were received from the computer department. After overcoming problems of matching for correct patient ID and after defining main diagnostic groups for severity of conditions, a total of 3455 operations were reviewed and comparison were made between the results of this particular surgeon (physician A) and the other surgeons at the department of Urology.

It was found that physician A performed high-risk, complex operations 2.5 more frequently than other surgeons. Nevertheless, it was also observed that post-surgical length of stay for physician A's patients was shorter by 3-4 days compared to other high complexity patients ($p=0.01$). Patients managed by physician A showed a first-month mortality rate of 1 out of 339 (0.28%) not different from the rate of the rest of the urological team over the same period: 7 out of 2164 (0.32%).

The bottom line was that physician A performs at least as well as, and probably even better than the other surgeons of the Urology department. This attempt, for the first time at Hadassah, to assess the quality of care by a single physician using administrative data, requires special caution before applying such modality to decision-making. This report however can be a good starting point for creating more powerful computerized systems for quality assessment, in the Urology department as well as other departments and institutes, at Hadassah.

WEBSITE OF CENTER

A website, freely accessible on the internet, prepared and maintained by Ms. Lois Gordon, is now giving detailed accounting of the various activities of the Center for Clinical Quality & Safety:

www.hadassah.org.il/departments/quality

Hadassah Medical Organization

Home > Medical Services > Health Services > Center for Clinical Quality & Safety

Center for Clinical Quality & Safety

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[Do Patients Recall and Understand Communicated Information Upon Discharge From The ER?](#)

[Failure in Information Transfer From the Laboratory to the Patient- Can We Improve?](#)

[Pain Management in the ER](#)

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- [United States Department of Health and Human Services](#)
- [Virginians Improving Patients Care and Safety](#)

List of Publications by the Center of Clinical Quality & Safety
since opening of the center in year 2002

Quality of Care in Emergency Medicine

Cohen M.J., Pollak A., Weiss A.T. and Brezis M. (2006) Availability bias in the management of myocardial infarction. *Quarterly J Medicine* 99(1), 64-5.

Stalnikowicz R., Mahamid R., Kaspi S. and Brezis M. (2005) Undertreatment of acute pain in the emergency department: a challenge. *Int J Qual Health Care* 17(2), 173-6.

Hendler K., Donchin Y. and Brezis M. (2003) Do patients recall and understand communicated information upon discharge from the emergency department? *Isr Med Assoc J* 5(11), 6-838 and MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Leibenson M. (2003) A pre and post intervention study of parental satisfaction and quality indices in the Hadassah Ein-Karem Pediatric Emergency Room. MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Mehamid R. (2003) Pain management in the ER. MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Rishpon A. (2005) Failure in information transfer from the laboratory to the patient- can we improve? Urinary tract infection in the Emergency Department as a model. MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Quality of Care in Internal Medicine

Kayam-Rand D. (2006) Evaluating the appropriateness of coronary revascularization procedures at Hadassah Hospital: adherence to clinical practice guidelines. MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Golan I. (2003) Knowledge & decision-making regarding gastrostomy endoscopy in the incompetent elderly. MPH thesis, Braun Hebrew University-Hadassah School of Public Health & Community Medicine.

Cohen M. (2004) To determine quality of treatment of myocardial infarction. MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Gottesman S. (2004) Influence of simple structured communication on families' satisfaction with end-of-life decision-making for the elderly. Masters in Nursing thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Sharon A. (2005) Evaluation of the utility of hospitalization in the internal medicine wards at Hadassah Hospital - from the perspective of the patient. MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Feuchwanger M. (2004) Quality of communication between Hadassah Hospital and family physicians. Survey of perceived needs by family physicians after discharge from Internal Medicine. MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Tauber R. (2005) Can we improve the cardiac patient's partnership in his/her recovery? MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Ishay-Gigi K. (2006) To what extent rheumatology patients on steroids get advice and support to exercise and what is the association between exercise and steroid side effects in these patients? MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Surgery

Grupper A. and Brezis M. (2005) Resistance to use of perioperative beta-blockers: a no-man's land. *Arch Intern Med* 165(3), G-347.

Grupper A., Grupper A., Rudin D., Drenger B., Varon D., Gilon D., Gielchinsky Y., Menashe M., Mintz Y., Rivkind A. and Brezis M. (2006) Prevention of perioperative venous thromboembolism and coronary events: differential responsiveness to an intervention program to improve guidelines adherence. *Int J Qual Health Care* 18(2), 123-6.

Brezis M. and Oren A. (2005) Surgical mortality, hospital quality, and small sample size. *JAMA* 293(5), 553.

Birnstock A. (2005) Evaluation of the informed consent process in the Department of Surgery, Hadassah University Hospital Ein-Karem. MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Yosef Y. (2005) Evaluation of antibiotic prophylaxis for surgical site infections at Hadassah Hospital - Ein Kerem. MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Farkash A. (2006) What is the desirable rate of a "white appendix"? MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Obstetrics & Gynecology

Mankuta D., Leshno M., Menasche M. and Brezis M. (2003) Vaginal birth after cesarean section: trial of labor or repeat cesarean section? A decision analysis. *Am J Obstet Gynecol* 189(3), 714-9.

Malkiel A. (2003) Can we improve the content and quality of information delivery prior to amniocentesis? MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Bishlish S. (2004) Evaluation of the informed consent process in the Department of Obstetrics and Gynecology, Hadassah Hospital, Ein-Karem. MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Weinstein R. (2006) Implementation of new guidelines for prophylaxis of postpartum venous thromboembolism at Hadassah University Hospital - surveillance of adherence to guidelines and adverse events. R MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Radiology

Shaham D., Heffez R., Bogot N.R., Libson E. and Brezis M. (2006) CT pulmonary angiography for the detection of pulmonary embolism: interobserver agreement between on-call radiology residents and specialists (CTPA interobserver agreement). *Clin Imaging* 30(4), 266-70.

Mizrahi M., Mintz Y., Rivkind A., Kisselgoff D., Libson E., Brezis M., Goldin E. and Shibolet O. (2005) A prospective study assessing the efficacy of abdominal computed tomography scan without bowel preparation in diagnosing intestinal wall and luminal lesions in patients presenting to the

emergency room with abdominal complaints. *World J Gastroenterol* 11(13), 1981-6.

Gromvitz Y, (2003) Validity of radiologic examinations in detecting findings in trauma patients- comparisons between residents and specialists. MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Hefetz R. (2004) Interobserver variability between radiology residents and specialists in the interpretation of spiral computed tomography for the diagnosis of pulmonary embolism at Hadassah University Hospital, Ein Kerem. MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Shaham A. (2004) Interobserver variability between radiology residents and specialists in the interpretation of abdominal CT for the diagnosis of acute abdomen at Hadassah University Hospital, Ein Kerem. MD thesis, Faculty of Medicine of the Hebrew University of Jerusalem.

Cross-Institutional Projects

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Conclusion

Further activities of Quality & Safety at Hadassah include workshops and lectures for students and staff as well as presentations of projects at several major institutions outside Jerusalem. This year, Hadassah presented over 30 abstracts at the meeting of the Israeli Society for Quality in Medicine and one of them received a best poster Award.

In conclusion, diverse projects attempt to make healthcare at Hadassah more patient-centered, more evidence-based and more system-minded. While in some areas, noticeable improvements have been achieved, it is increasingly apparent that further successes require a systematic mode of monitoring and feedback.

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