

GERIATRICS
SCHOLARLY ACTIVITY
2007

Journal Publication

None

Scientific Paper Presentation (Non-Beaumont)

Uthamarajan S MD, Voytas J MD. Post Operative Orthopedic Transfers From Hospital To Nursing Home Subacute Unit. Are Guidelines for DVT Prophylaxis Being Met? E2006-106

Tabibi R MD, Toofanny N MD, Voytas J MD, Maddens MMD, Allen S MD, Chrisman M MS. Delirium In Hospitalized Elderly Patients: Are Physicians Making the Diagnosis? 2003-048, March 27, 2007.

Sharif A, MD, Voytas J, MD, Maddens M, MD, Lontorfos D, GNP, Harries B, BS. Knowledge is Power: Validation of Heart Failure Educational Program in Skilled Nursing Facility: Final Date Analysis E2007-005. American Journal of Geriatric Cardiology March/ April 2007.

Goyal P, MD, Voytas J, MD. Patients on Erythropoietin Therapy Discharged From Hospital to Nursing Home: Are Iron Stores Being Adequately Measured? E2006-090 May 3, 2007.

Awards

Sharif A, MD, Voytas J, MD, Maddens M, MD, Lontorfos D, GNP, Harries B, BS. Knowledge is Power: Validation of Heart Failure Educational Program in Skilled Nursing Facility: Final Date Analysis E2007-005. American Journal of Geriatric Cardiology March/ April 2007.
3rd Place Award

RESIDENT AND FELLOW SCHOLARLY ACTIVITY 2008

It is an ACGME accreditation requirement that all programs provide support and mentoring for research and other scholarly activities for their residents and fellows. Such activities and opportunities are expected to be an extension of a program's faculty research and academic activities, also an expectation of the ACGME.

It is our education and research strength that distinguishes Beaumont among the best non-university academic medical centers in the country. While there is a definite need for research expansion in many of our programs and departments, Beaumont should take great pride in the current extent of resident and fellow research. The following pages detail the several varieties of scholarly activity that occurred in 2008. As one reviews this portion of the annual report, please be aware of the following:

1. The activity list is for calendar year 2008.
2. Only publications and presentations that occurred in 2008 are included. Items that were "submitted for publication," were "pending publication," or were "in progress" in 2008 are not included. These items will be captured in future annual reports.
3. Resident/fellow names are in bold print.
4. Only those publications and presentations with resident/fellow participation and credits are included. A complete listing of all research-associated and other publications, including those of faculty only, can be obtained from the Research Institute.

Medical Education congratulates all residents and fellows on their scholarly achievements and thanks all faculty research supervisors and co-authors for their critically important support and mentoring.

PRESENTING ABSTRACTS

Beaumont Hospital, Royal Oak

38th Annual

Residents' and Fellows' Research Forum

June 11, 2008

Title: Fall Risk Assessment Scales: Where is the Bang for the Buck?

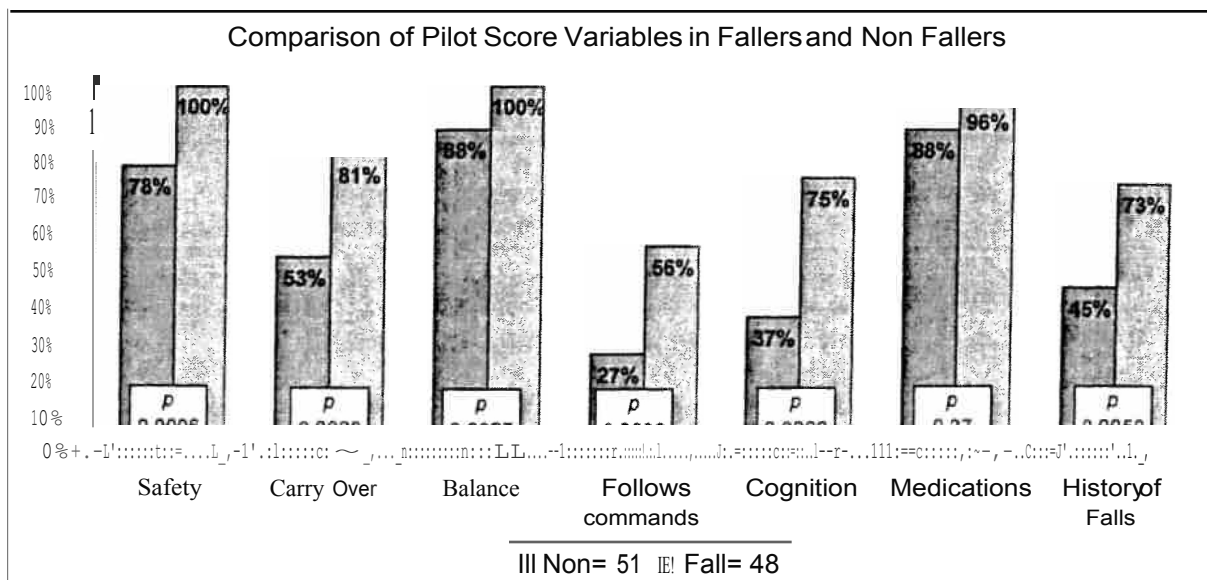
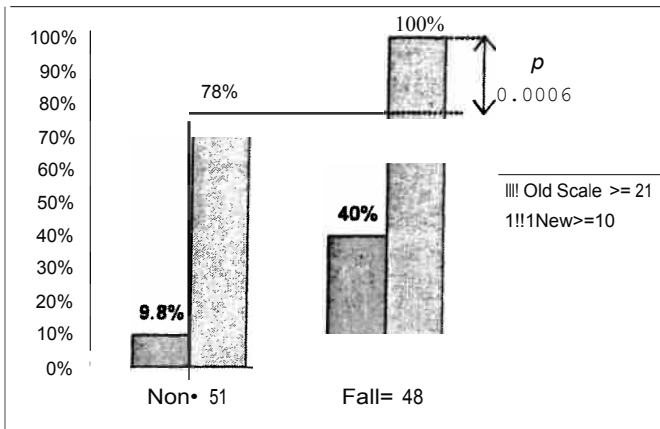
Author(s): Hayan Moualla, MD; Kim L. Hengy, RN; Shirley Evoe, RN; John Voytas, MD (Division of Geriatrics)

Introduction: Fall risk assessment scales (FRAS) are used to screen new admissions to nursing homes. Reliability of such tools has not been well established in nursing homes. The Objective of this study is to evaluate the reliability of a standard medicine-weighted, nursing administered FRAS against a new function-weighted, physical therapy administered FRAS.

Materials and Methods: retrospective chart review of nursing home admissions from 10/1/2007 till 2/1/2008 yielding a cohort of 99 admissions. Each of the cohort participants had the standard scale performed per routine protocol and had the new scale performed by the physical therapy department on the day of admission. All cohort participants had full documentation of both FRAS results and age >62 yo. We compared the two scales for sensitivity and specificity in regard to prediction of falls. We also analyzed the seven components of the new FRAS for the same goal.

Results: 48 residents fell at least once during their admission, while the other 51 did not fall (NF). The new FRAS had a sensitivity of 100% (40% for the standard FRAS) and a specificity of 22% (90% for the standard FRAS). The PPV for the new FRAS was 56% (79% for the standard FRAS) and the NPV was 100% (61% for the standard FRAS). Analysis of the new FRAS items showed a correlation between balance (impaired) and safety awareness (impaired) of 100% in fallers compared with 88% and 78% respectively i~F (P values were 0.027 and 0.0006). All the remaining items of the new FRAS had statistically significant correlation with falling except for the number of prescribed medications.

Conclusion and Discussion: a function-weighted, therapist-administered FRAS recognizes fall prone residents in NH setting better than a medicine-weighted, nursing-administered FRAS. Balance and safety awareness seem to have a major correlation with falling. Medications number does not seem to correlate with falling.



Research involves human subjects: No Yes HIC Approval #: E2008-010
 Research involves animals: No Yes ACC Approval #: _____
 Research involves recombinant DNA or infectious agents: No Yes BC Approval #: _____
 Other Research: No Yes Medical Director Research Institute, RI Approval #: _____

Signatures: [Signature] * [Signature]
 Sponsor



BEAUMONT HOSPITAL
RESEARCH INSTITUTE

38th ANNUAL
RESIDENTS' AND FELLOWS'
RESEARCH FORUM
2008 PROGRAM

June 11, 2008
8:00 a.m. to 12:30 p.m.
Administration Building Auditorium

Does Body Mass Index (BMI) Correlate with Hospital Readmission Rates from a Skilled Nursing Facility Heart Failure Rehabilitation Unit?

Daniel A. Dino, MD, Umesh Tamhane, MD. John Voytas, MD FSGC*
 Division of Geriatrics, William Beaumont Hospital, Royal Oak, MI

Introduction: Heart Failure(HF) is the most rapidly growing cardiovascular disorder in the U.S. Its associated morbidity and mortality explain why HF is referred to as "the most important public health problem in cardiovascular medicine" . The significantly high readmission rates among the elderly population greatly impacts the allocation of healthcare resources. To make matters worse, the U.S. is in the midst of an escalating epidemic of obesity. Nearly 60% of the adult population of the U.S. is overweight or obese and the elderly population in the nursing homes is not immune from it. There is limited research examining the relationship between BMI and outcomes in the Institutionalized elderly population, more so from a skilled nursing facility heart failure rehabilitation unit.

Objectives; To determine the relationship of BMI and hospital readmission rates in elderly patients enrolled in a skilled nursing facility heart failure rehabilitation unit. To identify their baseline characteristics and different co-morbid illnesses.

Materials and Methods; 123 consecutive elderly patients (mean age 80 ± 6.8 yrs, range 67-101) admitted to a skilled nursing facility heart failure rehabilitation unit from July 2001 till September 2002 were included. BMI, co-morbid illnesses, and hospital readmission rates within 6 months were retrospectively analyzed by comprehensive review of the hospital charts.

Results; Females comprised the majority of the patients, 69 (56%). Caucasian was the predominant race, 115 (94%). 24 (20%) were readmitted to the hospital within 6 months. The average BMI was 27 ± 5.9 which is in the overweight category. When the BMI was divided into quartiles: 41 (33%) were overweight (BMI ~ 25 to ~29.9) and 32 (26%) were obese (BMI ≥ 30), only 21 (17%) were underweight (BMI ~ 21.9) and 29 (24%) had normal BMI (~ 22 to 24.9). A Pearson's Chi-square test did not reveal any relationship between BMI and hospital readmission rates ($p = 0.52$). The following co-morbid illnesses were significantly found to be related to increase BMI using the Wilcoxon rank test HTN ($p = 0.04$), OM ($p = < 0.0001$), and hyperlipidemia ($p = 0.05$). No consistent correlation was found between BMI and serum albumin levels.

Conclusion: The majority of the patients studied were overweight or obese. they were found to have significant co-morbid illnesses like OM, HTN, and hyperlipidemia. There was no correlation between BMI and hospital readmission rates among patients admitted to a skilled nursing facility heart failure rehabilitation unit

Research involves human subjects: No Yes Approval#: E2007-141

Research involves animals: No Yes ACC Approval #: _____

Research involves recombinant DNA or infectious agents: No Yes BC Approval#: _____

Other Research: No Yes Medical Director Research Institute _____

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Title: FOLEY CATHETER CARE DOCUMENTATION DURING TRANSFER FROM HOSPITAL TO NURSING HOME: ARE WE DOING A GOOD JOB?

Author(s): Christopher Williams, MD, MRCP(UK); John Voytas, MD, CMD, FACP; Kim Lewis-Hengy, RN, BSN; Shirley Evoe, RN, BSN.
Division of Geriatrics, Department of Internal Medicine, William Beaumont Hospital, Royal Oak, MI

Introduction: UTIs are the commonest cause of nosocomial infections. The majority of this is indwelling urinary catheter (IUC) associated. The CDC and CMS F-tag 315 guidelines recommend early discontinuation of IUCs to prevent UTIs. The barriers to this include physician unawareness with lack of documentation of catheter care, lack of system indicators and initiatives to monitor IUCs in hospitals. Our study proposes to assess the quality of continence care documentation during care transition from hospital to SNF.

Materials and Methods: The IRB approved retrospective quality assurance study involved skilled nursing facility residents admitted from a hospital with IUCs between March and October 2007. N=139 patients were recruited retrospectively. 31 of these patients with no hospital data were eliminated. The distribution of the documentation was examined with Chi-square test. Age was examined using Wilcoxon rank test. Remaining variables were examined using a Fisher's exact test.

Results: Of the 108 patients retrospectively studied, 73(67.6%) had no documentation of continence care either in discharge summary or consult note. In the subset of postoperative patients, 21(65.6%) of the 32 patients had no such documentation. Age, gender or race bias was not evident. Among the services audited, lack of documentation was found in 65% of medical, 81% surgical, 47% orthopedic, 92% specialty and 70% geriatric patient data.

Conclusion: The quality of IUC documentation during transfers from hospital to SNF suggests need for system-wide improvement. System-based initiatives through staff protocols and electronic health information reminders are advocated for monitoring catheter use.

Discussion: 40% of the nosocomial infections affecting 600,000 patients a year are due to UTIs. Of this 66-86% are catheter associated. The incidence of bacteruria is directly related to the duration of catheterization with 3-10% developing significant bacteruria every day. Of this 25% develop UTI with 4% progressing to bacteremia. In spite of the complications associated with its use, the Foley catheter is useful temporarily in postoperative patients, urinary retention and in measuring outputs. Long-term indications include bladder outlet obstruction, decubitus ulcers and palliative care in bed bound patients. Prospective studies have shown the benefit of restricting catheterization postoperatively to patients with expected duration of surgery >5 hrs. In THR patients, the Foley catheters need to be restricted to patients >75 yrs, ASA class >3, obese or with urinary incontinence. In TKR patients, the catheter use needs to be restricted to patients age >80, obese or with urinary incontinence. These restrictions along with decatheterization on day 2 post-THR and day 1 post-TKR resulted in significant UTI and antibiotic use reduction.

The use of urinary catheters to manage bladder disorders such as UI and urinary retention comes to a focus in long term care settings. Historically, indwelling catheters have been used in the chronic, medically compromised elderly patient; the prevalence of long-term catheter use is greatest in residents with UI residing in skilled nursing facilities. These devices increase mortality and morbidity in both men and women. At least 40% of all infections seen in nursing homes are in the urinary tract system and 80% are due to urinary tract catheterization and instrumentation. While many approaches have been used to minimize catheter-induced UTI, elimination of catheter usage remains the best method. In an effort to manage and regulate the problem of urinary incontinence and IUC placement, The CMS issued surveyor guidance for UI and IUC in June 2005 collapsing Tags F 315 and F 316 into one Tag 315. Efforts to manage urological conditions such as the use of indwelling catheters and absorbent products, perineal hygiene and care, toileting, and bladder rehabilitation are areas of concern and have become the subject of revised regulations. The intent of recent changes to the Centers for Medicare and Medicaid Services surveyor guidance (F 315) for incontinence and urinary catheters is to ensure that indwelling catheters are not used without medical justification and removed as soon as clinically warranted.

Since the acute care facilities are primary source for patient admissions to nursing homes, the management of Foley catheter needs adequate and complete transfer documentation for continuing care. In various studies, the rate of unwarranted catheter use ranged from 20-50%. The most effective strategy for prevention of catheter associated UTIs (CAUTI) is early discontinuation. The barriers to this include physician unawareness of catheter placement, lack of system based indicators and initiatives to follow-up on IUC placement. Our study is the first to assess the adequacy of the transfer documentation to establish necessity for Foley catheter placement and completion of transfer orders for continuing continence care in a community teaching hospital setting. The study finds significant lack of documentation of IUC use in the electronic data during transfers to SNFs. A disturbing prevalence of this trend was found to be similar among the postoperative subset of patients and the various services audited indicating need for intervention. Studies have shown benefit in the use of assigned nursing staff to monitor and follow-up on the Foley catheter placements and also have also shown benefit in the use of EHR reminders of IUC use in patients. A follow-up system-wide audit with these interventions is suggested to study its effect on IUC care documentation and avoidance of unnecessary IUC use.

Research involves human subjects: No Yes HIC Approval#: 2008-038

Research involves animals: No Yes ACC Approval #:

Research involves recombinant DNA or infectious agents: No Yes BC Approval #:

Research _____ ~ Director Research I _____ R. App 7
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GERIATRICS

Journal Publications

Tamhane U, Voytas J, Aboufakher R, Maddens M. Do Hemoglobin and Creatinine Clearance Affect Hospital Readmission Rates from a Skilled Nursing Facility Heart Failure Rehabilitation Unit? JAMDA March 2008; 9: 194-198.

Tamhane U, Allen S, Maddens M, CMD. Pseudo-obstruction Due to Foreign Body: Importance of Good Physical Examination. JAGS May 2008; 56 (5) 952-953

Abstracts

Dino DA, Tamhane U, Voytas J. Does Body Mass Index (BMI) Correlate with Hospital Readmission Rates from a Skilled Nursing Facility Heart Failure Rehabilitation Unit? Poster presented at the Annual Meeting, Society of Geriatric Cardiology, Chicago, IL March 29, 2008

Moualla H, Lewis-Hengy K, Evoe S, Voytas J. Fall Risk Assessment in Nursing Homes: Reliability and Most Predictive Factors-Physical Therapy Designed Scale vs. Medically Designated Scale for the Elderly. accepted for presentation Gerontologic Society of America 61st Annual Meeting November 21-25, 2008, National Harbor, Maryland

Williams C, Lewis-Hengy K, Evoe S, Voytas J. Quality of Foley Catheter Management Documentation During Care Transitions. accepted for presentation Gerontologic Society of America 61st Annual Meeting November 21-25, 2008, National Harbor, Maryland

Scientific Poster Presentations

Dino DA, Tamhane U, Voytas J. Does Body Mass Index (BMI) Correlate with Hospital Readmission Rates from a Skilled Nursing Facility Heart Failure Rehabilitation Unit? Poster presented at the Annual Meeting, Society of Geriatric Cardiology, Chicago, IL March 29, 2008

Beaumont Resident and Fellow Research Forum Presentations

Moualla H, Lewis-Hengy K, Evoe S, Voytas J. Fall Risk Assessment Scales: Where is the Bank for the Buck?" William Beaumont Hospital, Resident/Fellow Research Forum, June 11, 2008

Dino DA, Tamhane U, Voytas J. Does Body Mass Index (BMI) Correlate with Hospital Readmission Rates from a Skilled Nursing Facility Heart Failure Rehabilitation Unit? William Beaumont Hospital, Royal Oak, Michigan

Awards

Christopher Williams, M.D. accepted to participate at the Futures Program (full sponsorship), AMDA National Symposium, Salt Lake City, Utah March 6-9, 2008, William Beaumont Hospital, Geriatric Fellowship Program

Junaed Haq, M.D. accepted to participate at the Futures Program (full sponsorship), AMDA National Symposium, Charlotte, North Carolina March 5 - 8th, 2009, William Beaumont Hospital, Geriatric Fellowship Program

HEMATOPATHOLOGY

Abstracts

Douglas V, Jaiyesimi I, Malysz J, Ravipati A, Tang B, Venuturmilli P, Wong OC. Clinical and Pathological significance of FDG PET in follicular malignant lymphoma. *Journal of Clinical Oncology* 2008; 26:15S 19517:2008 (Suppl)

Beaumont Resident & Fellowship Research Forum Presentations

Tonialatoya Eley, MD, Mohammad Alsawab, MD; Jozef Malysz, MD; Vonda Douglas-Niktin, MD. Evaluation of Peripheral Blood Flow Cytometry as a Screening Tool for Non-Hodgkin Lymphoma. *Arch Pathol Lab Med*. 2008; 132:1461 :A28

Jozef Malysz, MD; A. M. Blenc, MD; M. D. Smith, MD; B. Tang MD; O. C. Wong, MD; R. P. Zekman, DO; B. Ravipati, MD; I. Jaiyesimi, DO; V.K. Douglas-Niktin, MD. Correlation of Pathologic Grading, Ki-67 Expression, and Fluorine-18 2-Fluoro-2-Deoxy-D-Glucose-Position Emission Tomography Results With Bone Marrow and Splenic Involvement in Patients With Follicular Lymphoma. *Arch Pathol Lab Med*. 2008;132;1464:A43

INFECTIOUS DISEASES

Journal Publications

de Sanctis JT, Oostendorp SB, Boyanton Jr. BL, Robinson-Dunn B, Hughes M, Olson KE, Sims, MD. An Unusual Cause of Vertigo with Positive 14-3-3 Protein in Cerebrospinal Fluid. *Infect Dis Clin Pract* 2008 (Oct).

de Sanctis JT, Cumbo-Nacheli G, Dobbie D, Baumgartner D. HIV-Associated Nematode Rod Myopathy: Role of Intravenous Immunoglobulin Therapy in two persons with HIV/AIDS. *The Aids Read* 2008; 18(2):90-4.

Swami A, Carpenter CF, Rocher L. Disseminated Mycobacterium haemophilum Infection in a Renal Transplant Recipient Complicated by Immune Reconstitution and Hypercalcemia. *Infect Dis Clin Pract* 2008 (Oct).

Chapters

de Sanctis JT, Carpenter CF. Candidiasis. In: Schlossberg D, ed. *Clinical Infectious Diseases*. Cambridge University Press, First edition, 2008: 1179-86.

Carpenter CF, Swami A. Appendicitis. In: Bartlett JG, Auwaerter PG, Pham PA, ed. *Johns Hopkins University Antibiotic Guide*. <http://www.hopkins-abxguide.org> 2008.

Carpenter CF, Swami A. Cholangitis. In: Bartlett JG, Auwaerter PG, Pham PA, ed. *Johns Hopkins University Antibiotic Guide*. <http://www.hopkins-abxguide.org> 2008.

Carpenter CF, Swami A. Cholecystitis. In: Bartlett JG, Auwaerter PG, Pham PA, ed. *Johns Hopkins University Antibiotic Guide*. <http://www.hopkins-abxguide.org> 2008.



BEAUMONT HOSPITAL
RESEARCH INSTITUTE

39th ANNUAL
RESIDENTS' AND FELLOWS'
RESEARCH FORUM
2009 PROGRAM

June 10, 2009
8:00 a.m. to 12:30 p.m.
Administration Building Auditorium

!!!!!!: Pain control among patients admitted to nursing home. How are we doing?

Author(s): Katherine Adams, MD; John Voytas, MD, CMD, FACP; Shirley Evoe, RN; Kim Lewis-Henley, AN
 Division of Geriatrics, William Beaumont Hospital, Royal Oak, MI

Introduction: Pain control among patients in sub acute rehabilitation units has important clinical and regulatory implications. The initial pain assessment score is a part of MOS-The Minimum Data Sets.

The objectives of study were 3: To assess initial pain score based on a standardized Pain Assessment Form with scores 1-10, with a score above 5 indicating severe pain. 2- To compare initial pain score among patients admitted with diagnoses grouped into three categories: medical, surgical and trauma. 3- Is the pain control improving over time?

Materials and Methods: Retrospective chart review of nursing home admissions from acute care hospitals between August 1 and November 1, 2008 yielding a cohort of 50 patients, admitted with pm pain medications. The data collected included diagnoses, pain score prior to any pm pain medication, pain score one hour after a dose, date, and time. The data were collected over 14 days, and beside grouping into 3 different categories related to medical diagnosis, also grouped pain score prior to and post medication dose up to 5 days since admission and 6 days and beyond.

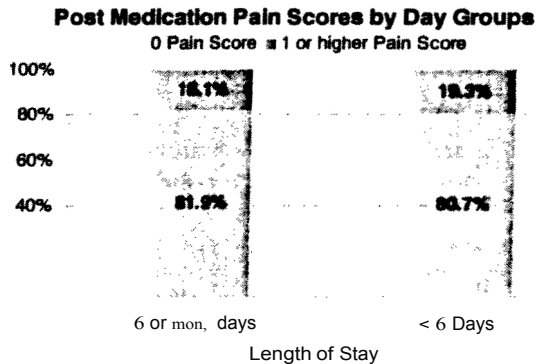
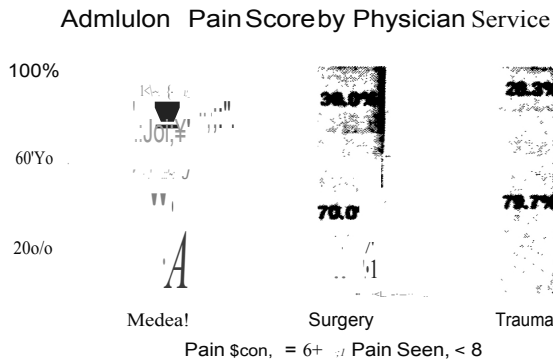
Results: First and second objectives: High percentage of patients in all diagnostic categories had initial pain score 6 or above, on a scale 1-10; among medical patients 65.52 %, surgical patients 69.98 %, and trauma patients 79.79%. See: Graph 1. Good pain control was achieved for 80.75% doses at level zero first 5 days. Six days and beyond post medication score at zero for 81.87 % of doses. See: graph 2 and 3.

A third objective was met as there was a smaller variation between pre and post medication pain scores as the time progresses: within first 5 days -5.11, (st. dev. 1.7), and -4.99 (st.dev.1.52) six days and beyond, indicating less severe pain with time. See Graph 4.

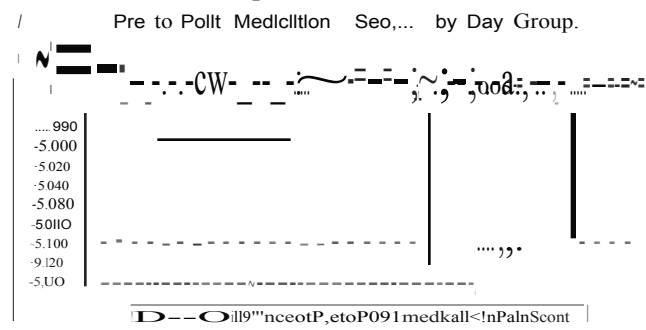
Conclusion and Discussion: Patients transferred to sub acute rehabilitation unit from acute care hospitals have considerable level of pain regardless of admitting categories, medical, surgical or trauma. Excellent pain control is achieved with pm medications as measured one hour after each dose. With time the pain level fluctuates less as measured pre and post doses. All patients were not receiving scheduled analgesics initially despite high pain level on admission. Subsequently pain management was modified, if the pain score remained at moderate to severe level.

Graph #1

Graph #2



Graph#3



Research involves human subjects: No Yes HIC Approval #: E2009-002

Research involves animals: No Yes ACC Approval #:

Research involves recombinant DNA or infectious agents: No Yes BC Approval #:

Other Aesea~ Yes Medical Director Resean:h

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Print name: Katherine Adams

Print name: John Voytas

!!!i INSULIN SLIDING SCARE, DOES IT EXIST IN THE NURSING HOME?

Author(1): Junaed UJ Hag MO, John Voytas MD CMD FACP- Division of Geriatric Medicine

Introduction; The insulin sliding scale is a very frequently used method to help control blood sugar levels in patients in nursing home settings. Many of the patients on sliding scale may not have blood sugars that are well controlled, and physicians many times may be unaware of the lack of glycemic control as coverage will be as per sliding scale. We wanted to look and see how many patients on sliding scales had adverse events defined as blood sugars less than 60 or greater than 400. Secondly we wanted to see how often nursing intervention in terms of orange juice or glucagon was required for sliding scale patients. Finally we wanted to see how often physicians make adjustments to the sliding scale based on adverse events.

Material and Method A total of 57 patients were included in the study, which were admitted to the nursing care facility. The study was a retrospective design that included all patients that were on a sliding scale at the time of their first medication monthly renewal.

Results; Of the total of 57 patients that were included in the study, 30% encountered adverse events on the sliding scale. Permanent adjustments to their scales were made 41 percent of the time. Of the 30 percent that had adverse outcomes seventy percent had hyperglycemic events. Nursing intervention was only required in seven percent of the patients. HGAIC was checked on a total of 19 percent of the patients.

Conclusion and Discussion; Patients required multiple adverse outcomes in order for any permanent adjustments to be made in their permanent sliding scale. The number of patients that had hyperglycemic events was greater than those that had hypoglycemic events.

It is clear from the findings that adverse events are very common on patients on sliding scales at nursing care facilities. The rate of adjustments on patients who have repeated adverse outcomes although is less than fifty percent. More than half of patients that are encountering adverse outcomes did not have any permanent adjustments to their sliding scale. Insulin sliding scales may have a more beneficial role in nursing home settings if there is more regular follow up on patients blood sugars on a weekly basis. If physicians note a trend in repeated adverse outcomes in terms of glycemic control, adjustments to the scale may prevent further adverse outcomes in the future.

It is also clear that patients on SSI do not have adequate coverage on a regular basis. As per our findings thirty percent of the patients that were on a SSI did have repeated adverse outcomes. One can conclude from these results that a great number of patients that we will be starting on SSI in nursing home setting will have adverse outcomes during their stay.

Greater education at both the level of the physician, as well as at the level of nursing is required and may help prevent persistence of adverse events on patients on sliding scales. More inservices for nurses on the floor may help better educate nurses as to when physicians may need to be notified of persistently high blood sugars that are covered within the sliding scale. Physicians may benefit from trying to design a greater structure as to how often they follow up on their patients on sliding scale coverage.

As is discussed in other recent literature on the sliding scale, there is no clear evidence to support the beneficial use of sliding scales in nursing home settings. This method is a reactive and retrospective way to manage blood sugars. There are no standardized clinical protocols for SSI regimens. It has also been shown in recent literature that basal bolus insulin regimens are superior in controlling blood sugars compared to SSI.

As a general rule, it appears from our study that physicians starting their patients on SSI in nursing home setting should regularly follow up on patients logs of recent blood sugars to try to evaluate and see how much insulin is required, and then attempt to put patients on regular fixed insulin schedules on daily basis. This will better help patients overall control of blood sugars.

Research involves human subjects: No Yes HIC Approval#: E2009-004
Research involves animals: No Yes ACC Approval#:
Research involves recombinant DNA or infectious agents: No Yes BC Approval #: __

Other Research: No Yes Medical Director Approval: In ~

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Title: DVT Prophylaxis on Transfer From Hospital to Nursing Home: How well are we doing?

Author(s); Jignesh Patel M.D. John Voytas MD, CMD, FACP. Division of Geriatrics; William Beaumont Hospital, Royal Oak, MI.

Introduction; Current 2008 ACCP guidelines suggest a grade (1A) recommendation for thromboprophylaxis in medical patients admitted to hospital with an acute medical illness. Studies however have demonstrated a lack of carryover of these recommendations to real world practice, with as much as 60% of high risk medical hospitalizations not receiving appropriate prevention for VTE. No studies to date have addressed concerns of thromboprophylaxis in high-risk medical patients upon transfer from hospital to sub acute nursing home rehabilitation units.

Objective:

- How often do complex medically ill elderly patients transferred from hospital to a sub acute nursing home unit arrive on thromboprophylaxis?
- How often nursing home physicians recognize VTE risk and begin thromboprophylaxis.

Materials

- IRB approved retrospective quality assurance study involved skilled nursing residents admitted after >3 days of hospitalization between August and December 2008 were included.
- N = 50 medically ill elderly patients with highest risk VTE were selected based on our inclusion criteria which include >3 established risk factor.
- INCLUSION CRITERIA: In addition to Age > 65 (elderly) + Acute Hospitalization for > 3 days, we included other high-risk medical conditions like: CHF, COPD, CKD, Morbid obesity, Malignancy, Rheumatologic/inflammatory disease, Respiratory/non-respiratory infection, chronic smoker, ICU admission.
- EXCLUSION CRITERIA: Patient already on long term Anticoagulation because of A. fib or preexisting DVT/PE or Mechanical valve, High risk for bleeding including recent gastrointestinal bleeding, Bleeding disorder, Intracranial Hemorrhage, documented Uncontrolled hypertension [>200/120 on >3days], Thrombocytopenia [Platelets <100,000], Coagulopathy, age< 65, Hospice enrolled, H/O Multiple Fall, Clinically relevant Hepatic/Renal impairment, Recent surgery / orthopedic procedure.

Results

Variable	Mean	Std Dev	Median	25th Pctl	75th Pctl	Minimum	Maximum
Age	84	7	85	80	89	65	97
Hospital Stay(days)	8	4	7	6	9	3	20

- 35/50 (70%) were not given prophylaxis on discharge.
- 33/50 (66%) were not given prophylaxis by NH physician.

VTE Prophylaxis	Frequency	Percent
Prophylaxis given on hospital discharge	15	30%
Prophylaxis not given on hospital discharge	35	70%
Prophylaxis given by NH Physician [including 2 started new]	17	34%
Prophylaxis not given by NH Physician	33	66%

Conclusion and Discussion

- Compared with the international ENDORSE study where 40% of patients admitted to hospital with an acute medical illness received ACCP-recommended VTE prophylaxis, our study showed 30% of high risk medical patients discharged to a sub acute rehabilitation unit arrived on prophylaxis, and only an additional 4% received VTE prophylaxis from the nursing home physician.
- Potential Reasons why prophylaxis is underused in "At-Risk" medically ill patients: 1) Clinicians unawareness of potential VTE risk, 2) Not a 'one specialty' responsibility, 3) Heterogeneous population, 4) Perceived difficulties in risk assessment, 5) Perceived bleeding risk, 6) Perceived fall risk / morbidity.
- This study shows a need for an improvement in screening VTE risk and prophylaxis upon transition of patients from hospital to nursing home. Implementing reminder systems for physician, or automatically screening patients upon admission to nursing home might improve VTE prophylaxis in this compromised population.
- Limitation: This study was not able to determine VTE prophylaxes during acute hospitalization as patients were transferred from several different hospitals and all MARS were not available.

Research involves human subjects: No Yes IC Approval#: E2009-010

Research involves animals: No Yes ACC Approval #: _____

Research involves recombinant DNA or infectious agents: No Yes BC Approval#: _____

Other Research: No Yes Medical Director Research # _____

Signatures:

Jignesh Patel
Submitting Author Signature

John Voytas
r Signature

Printname: Jignesh Patel M.D.

Printname: John Voytas MD

RESIDENT AND FELLOW SCHOLARLY ACTMTY
2009

It is an ACGME accreditation requirement that all programs provide support and mentoring for research and other scholarly activities for their residents and fellows. Such activities and opportunities are expected to be an extension of a program's faculty research and academic activities, also an expectation of the ACGME.

It is our education and research strength that distinguishes Beaumont among the best non-university academic medical centers in the country. While there is a definite need for research expansion in many of our programs and departments, Beaumont should take great pride in the current extent of resident and fellow research. The following pages detail the several varieties of scholarly activity that occurred in 2009. As one reviews this portion of the annual report, please be aware of the following:

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2. Only publications and presentations that occurred in 2009 are included. Items that were "submitted for publication," were "pending publication," or were "in progress" in 2009 are not included. These items will be captured in future annual reports.
3. Resident/fellow names are in bold print.
4. Only those publications and presentations with resident/fellow participation and credits are included. A complete listing of all research-associated and other publications, including those of faculty only, can be obtained from the Research Institute.

Medical Education congratulates all residents and fellows on their scholarly achievements and thanks all faculty research supervisors and co-authors for their critically important support and mentoring.

GERIATRICS

Abstracts/Posters:

Adams K, Voytas J, Evoe S, LewisHenley K. Pain management on transfer from hospital to nursing home: How well are we doing? William Beaumont Hospital Research Forum, June 9, 2009.

Campbell C, Harrison B, Ferrari M, **Maddens M**, Whall A. Retrospective evaluation of cognitive features associated with impulsivity related to falls in hospital older adults. Beaumont Hospital - Royal Oak 6th Annual Nurse's Week Poster Presentations. Royal Oak, MI, May 4-8, 2009.

Haq J, Voytas J. The Insulin Sliding Scale: Does it exist in the nursing home? William Beaumont Hospital, Research Forum, June 9, 2009.

Patel J, Voytas J. DVT Prophylaxis on transfer from hospital to nursing home: How well are we doing? William Beaumont Hospital Research Forum, June 9, 2009.

Ferrari M, Harrison BE, Wulff J, Campbell C, **Maddens ME**, Whall AL. Predictive factors associated with impulsivity related falls in hospitalized, older adults. The Gerontological Society of America. Gerontologist 2009; 49(81-2);94.

Research Presentations:

Dino D, **Voytas J.** Idiopathic pulmonary vein thrombosis in a 95 year old female. American College of Physicians, Traverse City, MI, September 26, 2009.

Peer-Reviewed Articles:

VoytasJ. Predictors of 30 day hospital readmission in nursing home residents. JAMDA D-09-00178, 2009.

Website Contributions, Videoclips, or other Multi-Media Contributions:

VoytasJ. Truth and consequences, falls prevention: Maximizing safety and quality of life throughout the continuum of care. November 18, 2009, Royal Oak MI.

BEAUMONT HOSPITAL
RESEARCH INSTITUTE

40th ANNUAL
RESIDENTS' AND FELLOWS'
RESEARCH FORUM
2010 PROGRAM

June 9, 2010
8:00 a.m. to 12:30 p.m.
Administration Building Auditorium

PRESENTING ABSTRACTS

Beaumont Hospital

40th Annual

Residents' and Fellows' Research Forum

Is Prehospital Anticoagulation Use an Independent Risk Factor for Increased Morbidity and Mortality in Hospitalized Elderly Patients with Hip Fracture?

Linda Plizga, DO, and John Voytas, MD*

Division of Geriatrics
Department of Internal Medicine

Introduction:As the mean age of the U.S. population increases, the prevalence of chronic conditions and concomitant use of pharmaceuticals to treat these chronic conditions will increase. One of these medical therapies, used to treat chronic cardiac conditions that may put an individual at risk for stroke, is the anticoagulant, warfarin (Coumadin). Since the same population at increased risk for stroke due to cardiac or vascular conditions is one that is at increased risk for falls due to decreases in mobility, flexibility, and sensory perception, the possible benefit of anticoagulation must be carefully weighed against the possible risk of increased complications should the patient sustain a musculoskeletal injury. To date, there have been no studies that have attempted to quantify the increased risk for patients over age 65 on anticoagulation at the time of a hip fracture. This study was designed to examine the differences in length of stay, time to surgery, use of blood products, occurrence of delirium, and rate of in-hospital mortality in elderly patients who were on warfarin at the time of hip fracture versus patients not on anticoagulation.

Materials and Methods:A retrospective chart review was conducted of patients who entered William Beaumont Royal Oak Hospital with diagnosis of hip fracture from January 1, 2008 through December 31, 2008. All patients were at least 65 years of age with a maximum age of 99. The mean was 83.7 years with a standard deviation of 7.24 years; the median age was 84 years. The sample consisted of 271 females (74.45%) and 93 males (25.55%). Subjects who were receiving anticoagulation treatment with warfarin at the time of admission were identified, and admission INR was recorded. Orthopedic operative notes were reviewed to ascertain time to surgery. Daily physician orders were reviewed to assess for presence of delirium and to establish number of units of blood products transfused. Note was made of any in-hospital mortality. To check data quality, frequency tables were obtained for categorical variables and descriptive summaries were obtained for length of stay, time to surgery, units of blood products, and admission INR. There were 40 patients who were on anticoagulation therapy with warfarin at the time of hospitalization and 324 patients who were not. The warfarin use groups were compared on sex and age. The groups were similar on both characteristics. All statistical analyses were performed using The SAS system for Windows version 9.2.

Results:Patients who were on anticoagulation therapy had longer lengths of stay as compared to patients not on treatment, and this difference was statistically significant (10.30 ± 5.12 days in the warfarin group vs. 8.98 ± 6.83 days in the no-anticoagulation group; $p = .0084$). Patients on warfarin therapy typically had longer time to surgery (2.71 ± 2.31 days vs. 1.94 ± 1.74 days for no warfarin; $p = .0093$). The patients who were not on warfarin prehospital typically tended to receive slightly fewer units of blood products (packed red blood cells, fresh frozen plasma, or platelets). This difference was not statistically significant ($p=.109$) using the Wilcoxon Rank Sum Test. Patients who came into the hospital on warfarin were more likely to become delirious during their hospital stay (no warfarin: $109/323 = 33.75\%$; warfarin: $22/40 = 55\%$; $p=0.0095$; odds ratio: 2.40; 95% confidence interval for odds ratio: (1.24, 4.66).). There is no evidence to suggest that patients who came into the hospital on warfarin were more likely to die during their hospital stay. The sample size is not large enough to conclude whether prehospital warfarin use reduces or increases mortality during hospital stays. Mean admission INR for patients receiving anticoagulation was 2.45; median 2.35 (range 1.00-5.10; $n=40$).

Conclusion and Discussion: Prehospital anticoagulation use in elderly patients admitted with hip fracture is associated with longer total length of stay, longer time to surgery, and increased incidence of delirium during hospitalization. A larger sample size is needed to determine if risk of mortality during hospitalization is increased. Judicious assessment of benefits versus risks of anticoagulation is essential before initiating therapy with warfarin in an elderly population already at increased risk for hip fracture.

NON - PRESENTING ABSTRACTS
IN ALPHABETICAL ORDER BY AUTHOR

Beaumont Hospital
40th Annual
Residents' and Fellows' Research Forum

Comparing Two Methods to Determine Prognosis in Hospice Patients with a Principal Diagnosis of Dementia

Gela Pala, MD, Ana M. Capatina-Rata, MD, Amapuri DeGuia, MD, Michael Maddens, MD

Division of Geriatrics
Department of Internal Medicine

Introduction

Hospice enrollment in the US is dependent on the physician's certification of the patient's life expectancy being six months or less. Researchers have developed predictive models that are disease specific. The objective of this research was to compare the prognostication power of two dementia related scales. One scale was the Medicare Dementia prognosis worksheet (as developed by the Michigan assigned fiscal intermediary) and the other was the Mortality Risk Index Score (as developed by S. Mitchell et al.). The study was done prospectively, in patients admitted to hospice and followed for 1 year post-admission, or until death, discharge or transfer.

Methods

We reviewed charts of 104 patients that were admitted to Beaumont hospice with the principal diagnosis of dementia. In our investigation we examined both the Medicare Dementia prognosis worksheet {LMRP} which is performed upon admission to the hospice as well as the Mortality Risk Index Score {MRIS}, which was done 2-4 weeks after the patient's admission. We excluded from the study the patients that died within 2 weeks from admission and patients whose diagnosis was changed to a different disease after record review. Out of 104 subjects 98 were eligible. 85 had the Mortality Risk Index Score complete and 88 had the Medicare Dementia prognosis worksheet complete. MRIS was considered positive if the value was equal or more than 6. We compared the predictive ability of these two scales by examining their respective sensitivity {Sn}, specificity {Sp}, positive predictive values {PPV} and negative predictive values {NPV}. A positive outcome of either the LMRP or MRIS scale signified that the patient's life expectancy was less or equal to 6 months (test positive) where as a negative outcome signified life expectancy greater than six months (test negative).

Results

The study found that for LMRP the Sn was 60%, Sp was 43%, PPV was 65% and NPV was 38%. With respect to MRIS, the study found that the Sn was 87%, Sp was 41.9%, PPV was 72% and NPV was 65%.

Conclusion

These findings suggest that both scales had comparable low specificity but that the MRIS scale is more sensitive than the LMRP scale and also has better PPV and NPV. We conclude that the MRIS can be extrapolated to a hospice population and offer a slightly better prognostication capability. The clinical utility of the scales as applied to a population of patients already enrolled in hospice care remains debatable.

In-Hospital Falls: The Utility of CT Imaging of the Brain in the Rapid Evaluation of Hospitalized Falls

Brian Muckey, MD, and John Voytas, MD

Division of Geriatrics
Department of Internal Medicine

Introduction: There has been an increased interest in the prevention of falls experienced by hospitalized patients. Quality assurance programs and research have focused on identifying at-risk populations and the initiation of fall prevention procedures. This is due, in part, by the announcement that the Centers of Medicare and Medicaid will no longer pay for preventable complications of hospitalizations, including fall-related injury. There has been little research dedicated to the evaluation and management of hospitalized patients who suffer a fall. CT imaging of the brain is frequently utilized to diagnose cerebral injuries related to falls. There is limited data to verify the efficacy of this diagnostic test in the identification of injury related to, or which may have precipitated, hospitalized falls.

Materials and Methods: All hospitalized patients who fall at William Beaumont Hospital are evaluated by the Rapid Response Team. The Rapid Response Team maintains a database of all evaluations. Using the Rapid Response Database, all patients who fell from January 1, 2009 through June 30, 2009 were identified. The electronic medical record and rapid response record were then used to obtain information including: age, sex, witnessed versus not witnessed fall, documented head trauma, documentation of focal neurological deficit, CT imaging of the brain, the use of antiplatelet or anticoagulation medications, aPTT, and INR.

Results: A total of 468 fall events were documented over the 6 month period. Of these events, CT imaging of the brain was performed in 215 cases (45.94%). The mean age of the study population was 67.41 years. There was an increase frequency in performance of CT imaging in those with advanced age, not witnessed falls, documented head trauma, focal neurological findings, and use of antiplatelet and anticoagulant agents. Acute findings were identified on 11 CT examinations (5.1%). Findings included acute intracranial hemorrhage (6 events, 2.8%) and other findings including acute or evolving infarction or cerebral edema (5 events, 23%).

Conclusion and Discussion: CT imaging of the brain is a useful diagnostic test in the evaluation of falls occurring during hospitalization. Acute findings which would potentially change the continued management of patients were found in 5.1%. The study lacked sufficient power to identify patient populations at higher risk of having acute findings. Although not statistically significant, there was an increase in the number of acute findings with advanced age. There were no acute findings in any patients under the age of 50. Of the 11 CT scans with positive findings, 6 (54.5%) occurred in patients over the age of 80. Further studies with larger populations will better identify high-risk groups and improve utilization of CT imaging of the brain in the evaluation of falls.

Compliance of Medications after Discharge in the Elderly (COMADE) Study

Jobin Varughese, MD, Elie Mulhern, MD, John Voytas, MD*, David Lick, MD, Eithnee Barton, DO,
Joanna Haveman, MD, Trevor Ripley, MD, Tony Kastoon, MD, Jose Manju, RN

Division of Geriatrics
Department of Internal Medicine

Background: Hospitalization of elderly patients usually results in changes to their medication regimen. Patients may be confused with these changes when they go home. Non-adherence to the medication changes may result in poor clinical outcomes, including re-hospitalization, worsening of chronic medical conditions and complications related to the medications themselves.

Objectives: To document adherence to medication changes in the elderly after discharged home from the hospital.

Methods: We visited elderly patients in their homes 1-2 days after discharge from the hospital, and asked them to show us all the medications they took since they were discharged from the hospital. We documented a complete list of all medications including herbal and over-the-counter medications; we also documented medication dosing and frequency. We then compared this list to the medication regimen documented in the medication reconciliation form at the time of discharge from the hospital.

Results: We visited 45 patients, 24 females and 21 males. Average age was 76 years (range 65-94). Average length of hospital stay was 4.31 days, and the average number of chronic disease documented at time of hospital discharge was 6.9. The mean number of prescription medications taken by the patients was 9.98 and the mean number of herbal medications/vitamins was 1.83. Only 3 patients adhere 100% to the discharge medications regimen, 36 patients (80%) took at least one extra medication, 20 (44%) patients missed taking at least one medicine, 20 (44%) patients used the wrong dose of at least one medicine, 19 (42.2%) patients took at least one medicine at incorrect frequency, and 27 (60%) patients took at least one vitamin or herbal medicine that was not listed on their discharge medication list. With regards to class of medications, those most commonly taken in addition to what was on their discharge medication regimen included cardiac (19%) and pulmonary (12%).

Conclusion: In this study, we documented significant non-adherence to medication changes in the majority of elderly patients after hospital discharge. In order to address this issue, we find there is a need to add new processes during hospital discharge of elderly patients. This should be targeted at decreasing the risk of non-adherence to medication after the transition from the hospital to home. This includes a new, patient friendly, medication reconciliation system, and educating patients and family members about the importance of adherence to medication changes.