Abstract Session C4:  Medical Education

Resident Provision Of Adequate Discharge Counseling: Results From 22 Trainee Programs  
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BACKGROUND: Discussions with patients at the time of hospital discharge require substantial skill and training. High quality and thorough execution of these discussions can improve satisfaction and quality of care. Using standardized patient (SPs), we assessed the quality of a discharge discussion provided by residents from a range of training programs and hospitals sites.

METHODS: Trainees completed a 15 minute SP encounter in which they were instructed to counsel a soon-to-be discharged patient hospitalized for a congestive heart failure exacerbation. A behavioral checklist was created to evaluate resident performance. SPs were trained to evaluate the quality of the resident performance in a uniform fashion. For analysis, behaviors were grouped into seven domains: "verbal professional demeanor," "non-verbal professional demeanor," "facilitating patient understanding," "medication reconciliation," "disease education," "follow-up arrangements review," and "assessing barriers to discharge plan". For each domain, we defined high performers as those residents who adequately performed all of the individual behaviors within that domain. For all trainees, bivariate analyses investigated relationships between high performance and gender and medical school training location (Foreign Medical Grads (FMG) versus USMDs). Sub-group analysis of USMDs investigated relationships between high performance and work in a field with a primary care component (internal medicine, family practice, pediatrics and obstetrics/gynecology). Likert scales were used for the residents to anonymously rate the quality, relevance, and authenticity of the encounter.

RESULTS: Our sample included 226 residents from 22 programs representing 10 hospitals. The majority were female (53%) and FMGs (65%). The median age group was 25-30. The residents were from internal medicine (58.8%), pediatrics (10.2%), obstetrics/gynecology (4.0%), family practice (2.7%), surgery (7.5%) and prelim/transitional (16.8%) programs. The proportion of high performers varied by domain: 92.9% for "verbal professional demeanor," 87.2% for "non-verbal professional demeanor," 31.0% for "facilitating patient understanding," 37.2% for "medication reconciliation," 35.8% for "disease education," 34.1% for "follow-up arrangements review," and 14.1% for "assessing barriers to discharge plan". Female gender was associated with high performance for "assessing barriers to discharge plan" (20.2% of women vs. 7.5% of men, p=.006). USMDs outperformed FMGs on verbal and non-verbal professional demeanor domains as well as "facilitating understanding" (98.7% vs. 89.8%, p=0.012; 93.7% vs. 83.7%, p=0.32; and 40.5% vs. 25.9%, p=0.023 respectively). Among USMDs, compared to other specialties, residents from programs with a primary care component had significantly more high performers in the domains of "facilitating understanding," "medication reconciliation" and "follow-up arrangements review" (54.1% vs. 30.0%, p=0.032; 48.6% vs. 25%, p=0.031; 43.2% vs. 22.5%, p=0.05 respectively). Most residents (79%) rated the encounter as realistic. Residents reported increased confidence (61%) as a result of the experience and found the topic useful (74%).

CONCLUSION: Participation in a discharge SP encounter can identify high and low performing residents on a number of domains. We found that while a substantial minority of residents always performed well, many did not. Furthermore, FMGs and non-primary care residents were significantly less likely to execute all behaviors adequately. SP encounters may be a helpful tool for identifying physician trainees poorly prepared to engage patients about their discharge plan.
BACKGROUND: Duty hour regulations, initially introduced in 2003 with further restrictions scheduled for release in 2011, were intended to improve patient safety and resident well-being. Surveys that have examined residents' perceptions of and experiences with the 2003 duty hours standards have generally reported that a more regulated work life is associated with improved training morale and a better work-life balance, but also reflect widespread concerns regarding sufficient time for educational opportunities and continuity of care. Many of the early reports were limited to a single or a small number of programs and had low response rates. We assessed the potential impact of regulations debated as part of the proposed 2011 ACGME duty hours by investigating internal medicine and surgery residents' perceptions of key elements of the proposed duty hour standards on quality of care as well as causes of medical errors.

METHODS: A voluntary resident questionnaire was administered following the October 2009 Internal Medicine In-Training® (IM-ITE) and Winter 2010 Surgery in-training examinations (ABSITE).

RESULTS: Responses were obtained from 18,272 (82%) internal medicine trainees, 3,710 (99.3%) senior-level surgery trainees and 3,878 (99.1%) junior-level surgery trainees. In general, surgical trainees thought that the 2011 ACGME changes would have little impact on the quality of patient care. The majority of senior and junior surgery trainees selected "not at all" or "to a small extent" the impact on quality of care on the following measures: reducing the cap from 80 hours per week (85% seniors, 79% juniors), limiting shift length to 16 hours (75% seniors, 63% juniors), requiring naps during 30 hour shifts (77% seniors, 64% juniors), enforcing the 80 hour rule each week instead of averaging over 4 weeks (74% seniors, 65% juniors), and increasing hours off after nights and extended shifts (66% seniors, 51% juniors). In contrast, the majority of the medicine trainees thought that most of these measures would "usually" or "always" impact patient care, for example increase hours off after nights and extended shifts (57%), limit shift length to 16 hours (53%), and require naps during 30 hour shifts (51%). More than half of the internal medicine trainees thought errors were "occasionally" or more often caused by: excessive workload (69%), resident fatigue (67%), inexperience or lack of knowledge (62%), incomplete handoffs (60%), and insufficient ancillary staff (54%). The majority of surgery trainees pointed to inexperience/ lack of knowledge and incomplete handoffs as the cause of adverse events. Inadequate supervision was "never" or "rarely" the cause of medical errors involving residents (72% surgery juniors, 74% surgery seniors, 56% internal medicine), nor was fatigue among surgical trainees (73% for surgery seniors, 60% for surgery juniors).

CONCLUSION: A survey among a national sample of surgical and internal medicine trainees with an extremely high response rate revealed that most surgical residents do not expect further restrictions on duty hours would have beneficial effects on quality of care while internal medicine residents were generally more favorable to these changes. These perceptions among trainees of surgical and medical specialties and their impact on training and quality of care should be taken into consideration when adjusting work hour regulations. Among surgical residents, the lack of a perceived relationship between fatigue and medical errors may help explain why they think duty hour restrictions are unlikely to improve quality of care.
Why Would House Staff Choose To Work Beyond The Hour Limits? Sarah J Nickoloff 1; Marilyn Schapira 2; Jeffrey Jackson 3; Jeff Whittle 4; Michael Frank 5; Kathryn Fletcher 6. 1Medical College of Wisconsin, Milwaukee, Wisconsin ; 2MCW, Milwaukee, Wisconsin ; 3Milwaukee VAMC/MCW, Silver Spring, Wisconsin ; 4Milwaukee VA Medical Center, Milwaukee, Wisconsin ; 5MCW, MILWAUKEE, Wisconsin ; 6Milwaukee VAMC/MCW, Milwaukee, Wisconsin. (Proposal ID # 12232)

BACKGROUND: The Accreditation Council for Graduate Medical Education (ACGME) announced new duty hour guidelines to begin July 1, 2011. The new guidelines will allow occasional exceptions to the rules in circumstances limited to "required continuity for a severely ill or unstable patient, academic importance of the events transpiring, or humanistic attention to the needs of a patient or family." It is unclear how often or in what situations house staff would consider using these exceptions. The purpose of our study was to quantify the frequency of these situations, and to describe circumstances in which house staff might consider using these exceptions.

METHODS: We conducted a cross-sectional survey study at a single academic tertiary care hospital. Participants were internal medicine housestaff on inpatient ward services during the study period. House staff were notified about participation via email and announcements at house staff meetings. The anonymous survey consisted of demographic questions and 4 questions pertaining to the duty hour exceptions. In these 4 questions, we asked each house officer to consider the 2 prior weeks of ward service and whether they would have used the anticipated exceptions, had they been allowed. Participants were also asked to provide a brief description of these situations. The study team reviewed these free text descriptions and identified themes using a grounded theory approach.

RESULTS: Fifty-one surveys out of 86 (59%) were returned. Interns and residents each accounted for 50% of the total. Thirty-five (69%) had encountered a situation in the last 2 weeks in which they wanted to stay longer than current duty hour rules allowed. The number of times participants wanted to stay in that period ranged from zero to "nearly everyday." Of those indicating that they would have stayed beyond the allowable hours, 55% would have broken the 24+6 hour rule; 33%, the 10 hour rule; and 12%, the 80 hour rule. The most common reason to want to stay was continuity for an unstable patient (n=30, 59%) of the respondents. Humanistic attention for the family/patient was cited by 19 (37%). Eleven (22%) participants identified an educational opportunity, and 14 (27%) chose "other." Descriptions of the situations which prompted house staff to want to stay spanned several themes: 1) Concern about workload for their own team and for the team covering overnight; 2) Patient acuity early that caused a redistribution of non-urgent work to the end of the shift; 3) Critical decision points inpatient care; and 4) The desire to preserve doctor-patient communication. Procedures were the major educational opportunity cited by house staff as a reason to stay.

CONCLUSION: Nearly 70% of house staff identified at least one time in the preceding 2 weeks in which they wanted to exceed current duty hour limits. The majority involved providing continuity for an acutely ill patient, however the doctor-patient relationship, humanistic attention to patients and workload were also commonly cited. We conclude that after July 1, situations will routinely arise during which housestaff will want to stay beyond duty hours. This may occur more frequently than anticipated by the ACGME. Training program leadership should be prepared to educate current and incoming house staff about these potential situations and have plans in place for dealing with such circumstances.
Four- vs Two-Week Rotations For Medicine Ward Attending Physicians: A Cluster Randomized Cross-Over Trial

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BACKGROUND: Rotations for medicine ward attending physicians have become shorter. Whereas month-long rotations had been standard, two-week rotations are now the norm. One driver for this change is the perception that shorter rotations improve physicians' work-life balance. Yet the psychological impact of rotation duration on physicians is not known. Nor is it known how rotation duration impacts patients or trainees.

METHODS: We conducted an unblinded, cluster randomized cross-over trial on the general medicine inpatient teaching service of a 450-bed public hospital during the 2009 academic year. We allocated random sequences of four- and two-week rotations to attending physicians who were scheduled for at least 6 weeks of inpatient service. All patients who were discharged from enrolled physicians' ward services throughout the study period constituted clusters, and each cluster comprised a random series of four- and two-week cluster-periods. The primary outcome was unplanned visits to our health care system within 30 days of discharge. Secondary outcomes were unplanned readmissions to our hospital within 30 days of discharge (a subset of our primary outcome) and length of hospital stay. In addition, attending physician performance and work-life balance were measured on the last day of each rotation with confidential questionnaires. Resident questionnaires comprised 5 domains of attending physician performance: patient care, professionalism, clinical judgment, teaching skills, and feedback of resident performance. Attending physician questionnaires comprised 3 domains of work-life balance: life stress using 4 items from the Cohen Perceived Stress Scale; emotional exhaustion using 9 items from the Human Services Survey of the Maslach Burnout Inventory; and perceived control in the workplace using 8 items from the Clinic Provider Survey of the Physician Worklife Study II. We generated summary scores for each questionnaire by transforming the sum of domain-specific z-scores into a single z-score; 1 z-score unit is equal to 1 standard deviation. We constructed multilevel models for each outcome, treating attending physician and the interaction term attending physician-by-cluster-period as random effects. Models were hierarchically three-tiered with either patients or questionnaires (level 1) nested within cluster-periods (level 2) that were nested within attending physicians (level 3).

RESULTS: Attending physicians (n=62) completed a median of 3 rotations (range 2 to 8) per physician. Median duration between rotations was 10 weeks (interquartile range 4 to 14 weeks). Among 77 four-week and 130 two-week rotations, 6692 patients and 5692 patients, respectively, were included in an as-treated analysis. The unadjusted proportions of patients with 30-day unplanned visits was the same among patients from either four- or two-week rotations (25%, 95% CI 24 to 26%). The similarity of these proportions did not change in multilevel models that adjusted for clustering and allowed direct within physician comparisons of four-week vs two-week rotations (odds ratio [OR] 0.98, 95% CI 0.90 to 1.07). Secondary outcomes of 30-day readmissions (OR 1.0, 95% CI 0.88 to 1.12), length of stay (0% change, 95% CI -4 to 3%), and residents' perception of attending physicians' performance (+0.01 SD, 95% CI -0.06 to +0.04 SD) were also not statistically different between four- and two-week rotations. Attending physicians' reported work-life balance, however, worsened with four-week rotations (-0.4 SD, 95% CI -0.6 to -0.3 SD); this effect remained after adding attending physician characteristics to the multilevel model. Whereas years of experience, sex, number of dependents, and the interaction term sex-by-number of dependents had no statistical association with work-life balance, being a hospitalist (0.7 SD 95% CI 0.3 to 1.0) and a graduate of an international medical school (0.6 SD 95% CI 0.2 to 1.0) were associated with better work-life balance.

CONCLUSION: Shorter attending physician ward rotations did not affect 30-day unplanned revisits, length of hospital stay, or evaluations of attending physicians' performance. Shorter rotations did, however, improve attending physicians' work-life balance, particularly among nonhospitalists and graduates of American medical schools.
Medical Students' Knowledge and Perceptions Caring for LGBT Patients

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BACKGROUND: Studies have documented homophobia in medicine among physicians and nurses. The 1994 AMA policy statement indicates a commitment to educating physicians on LGBT health that should start in medical school (1994). Furthermore, Healthy People 2010 specifically recognizes that the LGBT community experiences unique health disparities. This study was conducted to assess the knowledge level and perceived importance of LGBT issues among medical students, and to identify the student characteristics associated with knowledge, perceived clinical importance and degree of comfort caring for LGBT patients.

METHODS: Conducted in 2010, this was a cross-sectional cohort study of all four years of medical students. Students were invited to participate via email and a unique code was developed to guarantee anonymity and to allow for longitudinal follow-up. 390 students out of 709 completed the survey (55% response rate). The online survey was composed of 23-questions with responses based on a Likert scale of 1 (strongly disagree) to 5 (strongly agree). Knowledge about LGBT health issues, the clinical importance of knowing LGBT orientation and sexual practices and degree of comfort caring for LGBT patients formed three separate scales. Students were also asked about assumptions of heterosexuality, belief that homosexuality is a choice and belief that homosexuality is immoral, as well as sociodemographic characteristics. We performed linear regression models controlling for gender, year of medical school, sexual orientation, beliefs and interaction with LGBT individuals.

RESULTS: Thirty percent of medical students believe, or are uncertain, that sexual orientation is a choice; 49% assume that a patient is heterosexual. Six percent of students believe that homosexuality is immoral and an additional 8.2% are unsure or declined to respond. The mean knowledge score was 3.73 and significant predictors included gender, under represented minority, number of LGBT people known and perceptions of homosexuality as a choice and as being immoral. The mean score for clinical importance of knowing if a patient is LGBT was 4.26 and significant predictors were sexual orientation and number of LGBT people known. The mean score for degree of comfort caring for LGBT individuals was 4.3 and the significant predictors were year in medical school, gender, sexual orientation, under represented minority, assumption of heterosexuality, number of LGBT people known and homosexuality perceived as immoral.

CONCLUSION: Students present to Medical School with very specific ideas and beliefs that can affect their learning and patient care. Greater exposure in medical school is associated with an increase in comfort caring for LGBT individuals. Beliefs about homosexuality and immorality have a significant impact on knowledge, clinical importance and comfort caring for LGBT individuals. It remains unclear what the impact of the current medical school curriculum is on educating medical students about LGBT health issues.
BACKGROUND: The ACGME recently finalized duty hour restrictions to be implemented by July 2011. The new standards require programs to ensure that residents are managing their "time before, during and after clinical assignments." With the increasing use of electronic health records (EHR), it is possible for residents to continue to participate in clinical or educational activities after leaving the hospital, potentially above and beyond duty hour limits. There is no study examining the magnitude of this phenomenon. Therefore, our study aims to quantify the extent and type of out-of-hospital work reported by Internal Medicine residents at two Midwestern teaching hospitals with EHRs.

METHODS: An anonymous one-page survey was created to assess clinical activities that could be performed from home via telephone, internet, or remote access of EHR. These activities included checking labs, reviewing records, placing orders, communicating with ward teams, managing clinic patients and conducting activities such as independent didactics and research. Residents were asked to use a graded scale to rate the frequency of these activities during their last inpatient service month. Residents were also asked if they ever performed these activities on days off or on post-call days. Paper surveys were distributed to Internal Medicine residents at mandatory housestaff meetings at two Midwestern teaching hospitals in June 2010. The surveys were entered into an Excel database and analyzed using STATA 10.0. Site-adjusted ANOVA & logistic regression was utilized to assess differences by site or residency training year.

RESULTS:
Seventy-three percent of surveys were completed, 51% by interns. There was no difference in response rates between the two sites. Ninety-three percent of residents reported checking labs from home at least once, with 45% doing so frequently, and two thirds doing so on a post-call day. Sixty-nine percent of residents reported ordering inpatient labs from home, with 37% doing so on a post-call day. Furthermore, regarding time spent communicating with team members from home, 66% of residents report paging their cross-covering teams at least once in the last month; only 5% frequently, and 39% on the post-call day. Clinic management was often done from home: 78% of residents reported calling clinic patients from home, 85% reported checking labs from home at least once in the past month, 33% did so frequently, and 23% did so on their post call day. Regarding didactics/research, nearly all (99%) of residents reported researching patients' illnesses from home, and just under 50% did so on a post-call day. Likewise, 83% of residents reported doing research outside of the hospital, one-third doing so frequently. Regarding days off, 45% of residents reported coming to the hospital at least once on their day off to conduct clinical activities and two-thirds reported doing so for educational activities. When compared to interns, residents reported more out-of-hospital time preparing for conference (resident 56% vs. intern 21%, p = 0.003), emailing attendings (resident 28% vs. intern 6%, p = 0.015), and contacting cross-covering teams post-call (resident 56.2% vs. intern 30% p = 0.035).

CONCLUSION: As residents' in-hospital time is restricted, it is important to understand out-of-hospital work activity. EHRs have allowed many residents to complete clinical tasks from home, and these activities are not captured by resident duty-hour reports. Moreover, this work is sometimes taking place on designated days off or on post-call days, when residents are most fatigued. Further study is needed to describe the extent of this practice and whether it poses a safety risk. Understanding these risks have implications both for patient safety and resident well-being, and may necessitate improved resident education on in-hospital time management and patient handoffs.