Crossing boundaries: what is needed to realize a comprehensive model of advance care planning?

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Background: Advance care planning (ACP) should optimally occur early and regularly over the course of an illness. Because patients with advanced illness are often cared for by multiple providers, effective ACP demands a level of coordination and information transfer across the healthcare system that has thus far proven difficult to achieve. We sought to identify the barriers and facilitators to an iterative and comprehensive model of ACP by characterizing the ACP experiences, practices, and perspectives of healthcare providers across settings and disciplines.

Methods: We conducted multidisciplinary focus groups with providers at a single VA medical center. Participants were purposively sampled by discipline from the internal medicine, geriatrics, palliative care, social work, and intensive care departments. The following topics were covered with the aid of a semi-structured guide: provider conceptualization of and approach to ACP with their patients, beliefs about the objectives of ACP, challenges to engaging in ACP, and beliefs about gaps in ACP and on ways to improve ACP. Focus groups were audiotaped, transcribed, and qualitatively analyzed into categories and themes using the method of constant comparison.

Results: Twenty providers (attending/resident physicians, nurses, chaplains, social workers) representing internal medicine, hospitalists, intensive care, geriatrics/continuing care, cardiology, and palliative care, participated in 2 focus groups (n=17) or individual interviews (n=3). Participants described divergent approaches to and definitions of ACP by specialty; e.g. while primary care providers described ACP as “life planning” and focused on eliciting their patients’ values for healthcare, intensivists described it as part of end-of-life care and focused on identifying code status. Participants across specialties agreed that information about their patient’s broader life goals and values would be more useful at guiding decision-making than the narrowly specified treatment choices used in most living wills. Participants also agreed that primary care providers were best-suited to lead and coordinate the ACP process but acknowledged that in light of increasing workload in primary care, there is a need to test more efficient approaches to ACP, including group visits and the use of non-physician facilitators.

Conclusions: Differences in providers’ understanding of and approaches to ACP may hinder a more seamless and coordinated model of ACP that happens regularly over the course of an illness. Healthcare providers across multiple specialties and disciplines recommend that primary care providers lead and coordinate ACP by eliciting information about patient values that can be usefully applied to a range of clinical scenarios. However, questions remain about how to do this efficiently and effectively, including how to usefully document and transfer qualitative information about patient values across providers, and how to design a more scalable approach to the time-intensive ACP process.
Perceived risk for type 2 diabetes among women with a history of gestational diabetes

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Background: Gestational diabetes (GDM) is a striking, yet modifiable risk factor for the development of type 2 diabetes mellitus (DM2). Nearly 50% of women diagnosed with GDM develop DM2 within 10 years of initial diagnosis. It is unclear whether or not most women with a history of GDM are aware of their increased risk for developing DM2 and the extent to which they seek primary care follow-up after delivery. Prior studies in this area are limited and have not included ethnic minorities, who are disproportionately affected by GDM.

Methods: We conducted structured interviews with women who were diagnosed with GDM during a recent pregnancy and were within 18 months of delivery; patients diagnosed with DM2 after delivery were excluded. We recruited participants from 4 obstetrics clinics (2 academic, 1 private, 1 community) and 1 endocrinology clinic affiliated with Prentice Women’s Hospital (Chicago, IL). A programmer analyst identified eligible patients through query of the Electronic Health Record (EHR) for positive glucose tolerance tests (GTT). Women rated their risk for DM2 over 10 years (4 point scale) and compared their risk to those of other women their age (5 point scale). Reasons for risk ratings were elicited (open-ended response). Women rated the effect of GDM on risk for DM2 (5 point scale). Interest in receiving wellness information from physicians was rated on a 3 point scale. Receipt of follow-up care and postpartum GTT were self-reported. Chi-square tests were used to test potential differences by race.

Results: Of 124 eligible patients, 74 women completed interviews (33 Caucasian, 34 Hispanic, and 7 African-American); mean age was 33.8 (SD 5.7). Ninety-one percent of women felt they had at least a slight chance of developing DM2, but only 12% perceived their risk to be high. Forty-one percent of women rated their risk for DM2 as higher than for other women their age; Hispanic women were less likely than African American or Caucasian women to perceive higher risk for DM2 (24% Hispanic, 52% Caucasian, 71% African-American, p=0.01). Most women believed that GDM increased their risk for DM2, but only 17% felt it increased their risk by a lot. Reasons for perceived higher risk included family history of DM2, elevated weight, and history of GDM. In contrast, reasons for perceived low risk included a healthy or improved lifestyle and lack of family history of DM2. Ninety-six percent of women reported seeing a physician after delivery (with 31% seeing a primary care physician other than their OB/GYN); yet, 45% of women reported not undergoing guideline recommended postpartum GTT. Sixty-three percent of women reported seeing a primary care physician at least once a year and 77% of women reported interest in receiving information on how to stay healthy from their primary care physician.

Conclusions: Most women with a history of GDM perceive themselves to be at risk for DM2, but few perceive themselves to be at high risk; Hispanic women were least likely to perceive their risk as higher than that of their peers. GDM is felt to increase risk for DM2, but only mildly. After pregnancy, women commonly obtain follow-up in primary care, and may benefit from a coordinated handoff from obstetric care to improve continuity of care and ensure continued emphasis on the importance of diabetes prevention.
Trends in and Correlates of Awareness of a Prediabetes Diagnosis among US Adults

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Background: An estimated 1 in 3 US adults have prediabetes, an asymptomatic condition associated with an elevated risk for developing type 2 diabetes. This risk can be significantly reduced through lifestyle modification or pharmacotherapy. An important first step in engaging these high-risk patients in programs shown to be effective such as the Diabetes Prevention Program (DPP) is to ensure that they are aware of their prediabetes diagnosis. Although the main DPP results were published in 2002 and have been widely disseminated, we lack information on current rates of awareness of a prediabetes diagnosis, and correlates of such an awareness. The objective of this study was to describe recent trends in and factors associated with awareness of a prediabetes diagnosis among US adults.

Methods: We conducted repeated and pooled cross-sectional analyses of data from the nationally-representative 2005-2006, 2007-2008, and 2009-2010 continuous National Health and Nutritional Examination Survey (NHANES). The analytic sample (n = 2,178) was comprised of adults without diabetes who met the American Diabetes Association (ADA) criteria for prediabetes used from 2005 to 2010: a fasting plasma glucose of 100 to 125 mg/dL or a 75 gram oral glucose tolerance test 2-hour glucose of 140 to 199 mg/dL. In the repeated cross-sectional analysis we estimated a univariate logistic regression model to examine the relationship between NHANES cycle and awareness of a prediabetes diagnosis. In the pooled cross-sectional analysis, we used multivariable logistic regression to estimate associations between individual, insurance, and access characteristics and awareness of a prediabetes diagnosis.

Results: Among US adults with prediabetes from 2005 to 2010, only 5.0% (95% CI, 4.2 to 6.0) were aware of a prediabetes diagnosis. There was a slightly higher prevalence of awareness in 2009-2010 (6.5%, 95% CI, 4.7 to 8.3) compared to 2007-2008 (4.1%, 95% CI, 2.7 to 5.5; P = 0.04). In multivariable logistic regression, adults who met one or more ADA criteria for screening for diabetes did not have greater awareness than those who did not meet any ADA criteria [adjusted odds ratio (AOR) 1.99, 95% CI, 0.36 to 11.13; P = 0.42]. However, adults with at least 2 chronic conditions that are not ADA criteria for diabetes screening (e.g., asthma or arthritis) had greater awareness than those without a chronic condition outside of the ADA diabetes screening criteria (AOR 2.51, 95% CI, 1.17 to 5.40; P = 0.02). Additionally, adults with at least 2 outpatient health care visits in the last year had greater awareness than those without any outpatient utilization in the last year (AOR 2.84, 95% CI, 1.17 to 6.92; P = 0.02).

Conclusions: Despite a slight recent increase, fewer than 1 in 10 US adults with prediabetes are even aware that they have this condition, meaning that an estimated 58 million Americans do not know that they have prediabetes. Individuals with few chronic conditions or little outpatient utilization are even less likely to be aware of a prediabetes diagnosis. This lack of awareness means that millions of Americans who could benefit from strategies proven to reduce rates of progression to diabetes may lack the knowledge and motivation to engage in evidence-based programs.
Through a Gender Lens: A View of Gender and Leadership Positions in the Department of Medicine at an Academic Medical Center

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Background: Despite increasing numbers in academic medicine, women remain underrepresented in top leadership positions. To better understand women’s leadership roles, we compared the numbers and types of leadership positions held by women faculty to those held by men in the Department of Medicine (DOM) at a single academic medical center.

Methods: We queried Division Directors and Administrators in the DOM at The Johns Hopkins University SOM in 2012. Survey information included financial compensation attached to each leadership position (% FTE and/or salary supplement) and leadership position selection process. The DOM Chair provided rank, gender, and age information for each faculty member. We assigned leadership positions to one of three tiers (Upper, Middle, or Lower) based on perceived contribution to career advancement (visibility) and salary support. Upper–tier positions were highly visible (Chair, Division Director, Associate Dean) and compensated. Middle-tier positions were less visible and compensated (e.g., Fellowship Director). Lower-tier positions were less visible and not compensated (e.g., Clinical Director). We generated summary statistics (means, proportions) for the demographic characteristics of faculty and characteristics of the leadership positions. Chi-square testing was used to compare proportions.

Results: In May 2012, there were 435 DOM faculty: 160 (36.8%) women and 275 (63.2%) men. The percentage of women at the Asst. and Assoc. ranks was similar to men (45.4% v 54.6% and 39% v 61%, respectively). Among Full Professors, women were underrepresented compared to men (18.2% v 81.8%). Women were more likely to be at the Assoc. and Full Professor ranks for fewer years compared to men (4.2 y v 7.9 y and 7.4 y v 11.6 y, respectively, p<0.05 for both). 208 faculty members held 272 leadership positions. Women were as likely to hold a leadership position as men (46.3% and 48.7%, p=0.62). Asst. Professor women were more likely to hold a leadership position compared with Asst. Professor men (38.3% v. 24.8%, p=0.04). 25 positions were Upper-Tier, of which only 5 (20%) were held by women compared to 20 (80%) held by men (p<0.0001). About one-third of Middle-Tier (36.1%) and Lower-Tier (35.6%) positions were held by women. Most women (82.5%) who held a leadership position held only one position, with fewer men (74.3%) holding only one position (p=0.18). Most positions received either salary support or a salary supplement (83.6%). There was no difference in compensated positions (Upper- and Middle-Tier v. Lower-Tier) by gender overall (p=0.88). However, when examined by rank, Assoc. Professor women were more likely to have a Lower-Tier position compared with Assoc. Professor men (26.7% v. 11.8%, p=0.07). Median salary support (% FTE) was 17% (IQR 5%, 25%) and did not differ by gender. Chair or chief appointment accounted for the majority of leadership position selection (84%).

Conclusions: Despite women holding leadership positions proportionate to their representation in the DOM, they were less likely to hold Upper-Tier positions that traditionally lead to the highest leadership roles such as department chair or medical school dean. Overrepresentation in noncompensated roles at the lower ranks may actually be detrimental to women, in particular as these roles may take away from other activities that contribute to advancement. More research needs to be done on the exact types of “leadership roles” women accept.
Patterns of Hospice Care Among Veterans and Non-Veterans

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Background: Historically, hospice use by military Veterans lagged behind that of non-Veterans. Responding to this disparity, in 2002-2003, the Veterans Health Administration (VHA) expanded Veterans’ access to end-of-life care services, and rates of hospice use increased substantially. Meanwhile, general US hospice patterns have shifted in recent decades, moving beyond the traditional focus on treating patients with cancer living at home. We compared Veteran and non-Veteran hospice users to determine whether demographics, primary diagnosis, location of care, and service utilization differed for these two populations.

Methods: Using data from the 2007 National Home and Hospice Care Survey (NHHCS), administered by the National Center for Health Statistics, we identified 1415 male hospice users (95% of Veterans in NHHCS were male). We used chi-square and t-tests to compare Veterans and non-Veterans by demographic characteristics, primary diagnosis, and location of hospice care. We used multivariate regression to assess whether differences in primary diagnoses and location of care between Veterans and non-Veterans existed after adjustment for demographic and clinical factors. We also compared measures of service utilization—length of stay (LOS) in hospice and number of visits by hospice nurses, social workers, and home health aides—between Veterans and non-Veterans, using multivariate regression. All analyses accounted for the complex sampling design; results were weighted to reflect national estimates.

Results: Among 483 Veteran and 932 non-Veteran male hospice users, representing 287,620 hospice enrollees nationally in 2007, Veterans were significantly older than non-Veterans (mean age 77.0 vs. 74.3 years, p=0.02). Most Veteran and non-Veteran hospice users were non-Hispanic whites (81.7% and 82.0%, p=0.72) and married (70.1% vs. 61.0%, p=0.10), respectively. Veteran hospice users were significantly more likely to live at home while receiving hospice (68.4% vs. 57.6%, p=0.047), although this difference was not statistically significant after adjustment for demographic and clinical factors (p=0.06). Cancer was a more common diagnosis among Veterans in hospice than non-Veterans (56.4% vs. 48.4%), but this difference was not statistically significant (unadjusted p=0.07, adjusted p=0.06). In analyses adjusting for demographic and clinical factors, mean hospice LOS was significantly longer for Veterans than non-Veterans (60 vs. 48 days, p=0.0499). In adjusted analyses, the number of nurse or social worker visits did not differ by veteran status (both p>0.10), but Veterans received significantly fewer visits from home health aides than non-Veterans (1 every 3.3 days vs. 1 every 2.0 days, p=0.005).

Conclusions: In a nationally-representative cohort of male hospice users, Veterans were older than non-Veterans, but other characteristics were similar. We found suggestive evidence that Veterans may be more likely than non-Veterans to have cancer and receive hospice at home (a more traditional pattern of hospice use), though these differences were not statistically significant. The longer LOS for Veterans suggests that Veterans are being referred to hospice earlier than non-Veterans, perhaps as a result of the VHA’s efforts to expand awareness of and access to hospice. However, Veterans had fewer home health aide visits than non-Veterans. Further study is needed to understand the sources of this difference and to assess if it is associated with worse experiences among Veteran hospice users.
Decline in Internal Medicine Residents’ ACLS Experience in the Modern Training Era

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**Background:** Trainees must demonstrate competence in Advanced Cardiac Life Support (ACLS) to become board-certified in Internal Medicine. Duty hour restrictions may hinder the development of competence by minimizing exposure to “real world” codes. Our study seeks to quantify Internal Medicine residents’ exposure to “real world” codes at a large academic training center and determine the relationship between that exposure and residents’ confidence in code team leadership.

**Methods:** We performed a cross-sectional email survey of second and third year Internal Medicine residents at the University of Colorado Denver, a large multi-site academic training center. Survey questions assessed the number of codes the residents had led in the past 12 months, their level of confidence in leading in-hospital codes on a 1-10 scale (10 being most confident), and when they most recently received ACLS training or a refresher course. A Spearman correlation coefficient was used to analyze the relationship between the number of codes the resident led in the last 12 months and self-reported confidence in ACLS leadership. Mean differences in self-rated confidence were compared among residents who had exposure to ACLS training in the last 1-6 months, 6-12 months, and over twelve months ago using Tukey’s studentized range test.

**Results:** A total of 71 residents responded for an overall survey response rate of 78%. The mean number of codes run in the previous year was 3.4 with less than 10% of residents running more than seven codes (SD 3.1; range 20). The mean confidence level was 6.1 (SD 2.0; range 9). Self-reported confidence was strongly correlated with “real world” code experience ($R^2$ 0.71; $p < 0.0001$). Time since last ACLS training did not significantly affect level of self-reported confidence ($p = 0.078$).

**Conclusions:** Our results suggest that Internal Medicine residents have limited exposure to “real world” code scenarios and that the amount of exposure is highly variable. The mean number of codes run annually (3.4) was lower than described in prior research. In a study by Hayes et. al. in 2007, 80% of surveyed Internal Medicine residents reported attending 1-5 codes per month during their 3-4 months of inpatient service. Our upper level residents complete 4-7 inpatient months annually. Thus, the average number of codes led per month was 0.6, well below the level reported by Hayes et. al. in 2007. The ideal number of codes one must lead to gain competence is not known. The mean confidence level in our cohort (6.1 out of 10) was also relatively low for such a critically important skill set. Self-reported confidence scores were highly correlated with “real world” code experience; however, this finding must be interpreted cautiously in the context of our study, as we did not directly assess competence. Previous research has demonstrated that there is not a direct correlation between confidence and competence in regards to ACLS leadership skills. Nevertheless, our results suggest that traditional residency training may provide inadequate opportunity to gain the ABIM-required competence in ACLS. In 2007, Wayne et. al. demonstrated that simulation-based training with deliberate practice was superior to traditional residency training in developing competence in ACLS leadership. Our study indicates that exposure to “real world” codes in traditional residency training has declined in the era of duty hour restrictions; therefore, the need for simulation-based training is even more pronounced.