

Editor's Note: The following are the Top Quality Improvement abstracts selected by the JGME and the Royal College of Physicians and Surgeons of Canada for the 2020 International Conference on Residency Education (ICRE). Underlined author names indicate presenting author at the conference.

Top Quality Improvement Winner

Weighed and Found Wanting: An Assessment of Inpatient Electronic Sign-Out List Quality

Introduction: Electronic sign-out lists (ESOLs) are important tools for handover and continuity of care. However, without appropriate training, their utility may be compromised. To identify areas for improvement in tool design and resident education, this study examined the quality of internal medicine ESOLs.

Methods: Between June and December 2019, we prospectively examined random samples of patient summaries contained within ESOLs of 9 internal medicine subspecialties at 3 academic hospitals. Descriptive statistics summarized whether ESOLs were updated in time for handover and included literature-based handover criteria (eg, code status). Chi-square testing allowed for bivariate analysis.

Results: A total of 566 patient summaries were evaluated. Of those not designated as “Alternate Level of Care,” 76% were not updated on the weekends. Between Monday and Thursday, 64% were not updated, compared to 31% on Friday ($P < .0001$). Code status was 3 times more likely to be reported when the ESOL template included a designated “Code Status” section (65% vs 21%, $P < .0001$). All templates lacked sections for allergies, current clinical status, and contingency plans. These items were reported in 1%, 8%, and 16% of summaries, respectively.

Conclusions: Internal medicine sign-out lists are often not updated and lacking in key handover criteria. Interestingly, ESOLs were more likely to be (1) updated on Friday and (2) inclusive of handover items that are denoted by the template. To optimize ESOL utility for handover, trainee input should be sought to further investigate why the identified deficits exist and how sign-out tool design may be leveraged for a solution.

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Evaluation of Internal Medicine Residents' Knowledge, Skills, and Attitudes Related to Quality Improvement and Patient Safety Education: Informing a Curriculum and Competency-Based Assessment

Introduction: A lack of evaluation has made the needs and efficacy of resident training in quality improvement and patient safety (QIPS) unclear. We sought to inform curriculum redesign by evaluating the perceived needs and effectiveness of an existing internal medicine (IM) resident QI/PS curriculum.

Methods: IM residents at Queen's University participated in a formal 1-year, repeating, QIPS curriculum consisting of 6 mandatory modules and rounds. A written knowledge test and Quality Improvement Knowledge

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Application Tool (QIKAT) survey was completed by residents in July 2019. Semi-structured interviews and qualitative thematic analysis was conducted with residents and faculty using a concurrent triangulated approach.

Results: Postgraduate year (PGY)-2 and PGY-3 knowledge test responses were blinded and scored by 2 residents (average interclass correlation coefficient = 0.83), with an average score of 51% ($n = 26$, $SD = 25.4$). Of the 38 PGY-2/PGY-3 residents' respondents, 28.9% were involved in a QI project; 63.2% and 28.9% felt proficient at identifying and improving care quality problems, respectively; and 13.2% believed they could implement change. Fifteen residents and 6 faculty interviews were conducted. Interview data analysis identified time as a key barrier to QIPS engagement. Barriers included a lack of knowledge, an overly complicated safe report process, and a lack of feedback from non-critical reports. There was uncertainty about how to negotiate QIPS standardization versus specialization.

Conclusions: Our results demonstrate that residents have limited perceived and measured formal QIPS knowledge and prefer active QIPS learning. Active learning, standardization of QIPS requirements, and improved reporting efficiency were identified as next steps to redesigning residency QIPS curriculum.

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Are Residents Practicing Safe Medical Care: A Retrospective Analysis of Civil Legal Cases

Introduction: Research has demonstrated a relationship between measures of health care quality and rates of civil legal actions against physicians. To understand the educational implications of these findings, we analyzed rates of civil legal actions involving resident physicians over time.

Methods: Retrospective analysis of closed civil legal cases involving ≥ 1 resident member of the Canadian Medical Protective Association, a national not-for-profit medico-legal defense organization with over 100 000 physician members. We performed a 25-year trend analysis (1993–2017) and a 10-year descriptive analysis (2008–2017).

Results: The proportion of residents named in civil legal cases decreased significantly from 31 per 1000 in 1993 to 23 per 1000 in 2017 ($P < .0001$). Between 2008 and 2017, 1901 residents were named in 1107 civil legal cases. In a subgroup analysis of residents whose specialty and training level were available ($n = 951$), surgical specialties were named most frequently ($n = 531$), followed by medical specialties ($n = 353$) and family medicine ($n = 84$). At the time of the index encounter that lead to being named in a civil legal case, 76.2% of residents were working on-service ($n = 725$) and 52.8% were on-call ($n = 502$).

Conclusions: This study is the first of its kind from Canada. Our findings reveal opportunities for educators and residents to better understand and manage medico-legal risk in the postgraduate training environment, and potentially enhance safe medical care in Canada.

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High-Value, Cost-Conscious Care Attitudes in the Graduate Medical Education Learning Environment: A Variation of Views That Residents Misjudge

Introduction: Training residents in delivering high-value, cost-conscious care (HVCCC) is crucial for sustainable health care. A supportive learning environment is key. Yet, stakeholders' attitudes toward HVCCC

in residents' learning environment are unknown. We aimed to measure stakeholders' HVCCC attitudes in residents' learning environment, compare these with resident perceptions of their attitudes, and identify factors associated with attitudinal differences among each stakeholder group.

Methods: We conducted a survey of 312 residents, 305 staff physicians, 53 administrators, and 1049 patients from 66 hospitals across the Netherlands between June 2017 and December 2018. Respondents answered the Maastricht HVCCC Attitude Questionnaire, an adaptation of the Rochester Questionnaire, consisting of 3 subscales: high-value care, cost incorporation, and perceived drawbacks. Residents estimated HVCCC attitudes of other stakeholders. We used multilevel analyses to analyze our data.

Results: HVCCC attitudes differed on all subscales: staff physicians and administrators reported more positive HVCCC attitudes than residents ($P \leq .05$), while patients' HVCCC attitudes were less positive ($P \leq .05$). Residents underrated staff physicians' ($P < .001$) and overrated patients' HVCCC attitudes ($P < .001$). Residents' and staff physicians' increasing age was associated with more positive HVCCC attitudes ($P \leq .05$). Residents perceiving more autonomy had more positive HVCCC attitudes ($P \leq .05$). Patients experiencing lower health quality associated with having less positive HVCCC attitudes ($P < .001$).

Conclusions: Attitudes toward HVCCC vary among stakeholders in residents' learning environment, and residents misjudge HVCCC attitudes of staff physicians and patients. Staff physicians and administrators can support residents' insight by sharing and displaying their positive views on HVCCC, teaching them patient-centered communication, and granting them autonomy in clinical practice. Older staff physicians are the best role models.

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Curriculum Needs for Teaching Quality Improvement and Patient Safety to Residents

Introduction: Understanding and developing programs that foster quality improvement and patient safety (QIPS) is a key factor in enhancing the field of QIPS. This study aimed to identify: (1) QIPS topics and teaching methods, (2) QIPS curriculum gaps, and (3) the anticipated needs of our postgraduate residency training programs.

Methods: A participatory approach was used to develop the needs assessment questionnaire. The questionnaire was divided into 10 sections. Seventy-six postgraduate medical education (PGME) program directors (PDs) were invited to complete the questionnaire.

Results: Thirty-nine PDs completed the questionnaire (10 CFPC; 29 RCPSC). Sixty-two types of teaching activities were identified (48 formal and 14 informal). The most common QIPS training topics were identified as general patient safety (documentation and safe handover strategies) and QI models (systems to identify and mitigate risks to patients). Participants described 4 factors that affected the delivery of QIPS training. These were organized into 4 main categories: resources, educational context, content knowledge, and learning environment. While several different needs were identified, there was consensus for faculty-wide QIPS needs such as QI, medication choice, prescribing, dosing, and disclosure.

Conclusions: This needs assessment revealed a variety of QIPS topics and teaching methods occurring in the PGME programs. Several of the QIPS topics currently delivered by residency programs were recognized as high-priority learning needs and gaps by other residency programs. Findings will inform the development and implementation of a PGME-wide QIPS curriculum. Further investigation is needed to explore the effectiveness of current teaching methods and how to optimally teach QIPS to address learners' needs.

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Quality Improvement and Patient Safety: Development and Implementation of a Postgraduate Medical Education Wide Initiative

Introduction: Quality improvement and patient safety (QIPS) have been assigned a higher profile in CanMEDS 2015, CanMEDS-FM 2017, and in new accreditation standards. This prompted efforts at Dalhousie University to create a vision for integrating QIPS into postgraduate medical education (PGME). The purpose of this study is to report on a needs assessment survey of program directors and to describe the implementation of a PGME-wide QIPS program.

Methods: A QIPS task force was formed, and a literature review performed. An electronic survey was distributed to all Dalhousie PGME program directors. Twelve program directors were interviewed individually to collect additional feedback. The results were used to develop a “road map” of recommendations with a graduated timeline.

Results: Forty-three participants responded to the program director survey. The most frequently reported barriers to delivering QIPS content were “limited/lack of faculty expertise” (64.3%), “competing demands for faculty” (57.1%), and “competing educational demands for residents” (57.1%). The top 3 content areas identified as being high priority to meet learning needs of residents were “patient safety incident analysis/root cause analysis,” “quality improvement methodologies,” and “culture of patient safety.” A common theme from narrative comments suggested improving integration of QIPS teaching into daily clinical care. The task force released recommendations in February 2018; the structure of subsequent interventions and the evaluation strategy will be described.

Conclusions: A PGME-wide initiative for QIPS has been successfully developed and implemented. The recommendations made and ongoing evaluation of work in QIPS will be described.

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