BACKGROUND

Internal Medicine (IM) Residency Program at East Carolina University did not have a formal curriculum for Quality Improvement and Patient Safety (QIPS). ACGME milestones on systems-based practice assess residents’ knowledge and skills in QIPS activities. We created a QIPS curriculum for IM residents to develop this competence and to foster a stronger culture of safety and quality.

METHODS

The QIPS curriculum is created as an experiential learning model with 4 essential elements, namely theory, QI workshop, mentored QI project, and safety experiences designed with set milestones for each PGY level. Theory training includes online modules, lectures, mock root cause analysis (RCA) exercise, and readings. A 3-day QI workshop translates this theoretical knowledge into practical application, using fun games, real life QI examples, and group exercises. QI team formation, project selection, and matching with a QI mentor are done according to residents’ interests. Resident teams present their QI projects at IM conference twice yearly. Regarding safety experiences, residents are trained not only to log safety events in institutional event reporting system but also to dissect these events at monthly event reports (Quality Monday) and M&M conferences. Structured reporting system such as learning from defect (LFD) and RCA using fish bone diagram are utilized to encourage system thinking. Identified issues are recorded, addressed, and reported in a monthly QIPS newsletter. The QIPS chief resident monitors and evaluates resident participation and progress with QIPS activities which are filed with residency leadership semiannually. Residents’ successes are recognized and celebrated through different platforms.

IMPROVEMENTS

Since the inception of the QIPS curriculum in July 2021, the number of safety events filed by IM residents has doubled. Residents’ participation in monthly event report has improved both quantitatively and qualitatively. Using LFD format, event report is transformed from a frustrated venting session to a structured discussion with actionable items to identify system issues and improve patient care. We have done nine M&M conferences compared to two last academic year. There are ten ongoing QI projects focused on different areas such as value-based care, resident education, and wellness. This curriculum generated not only system level changes such as improvement in discharge medication reconciliation and a new order set for follow-up blood culture, but also program level change such as incorporating ultrasound guided peripheral IV-line placement training in the Sim Lab curriculum.

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>2020-2021</th>
<th>2021-2022</th>
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<tbody>
<tr>
<td>Number of resident QI projects</td>
<td>2</td>
<td>10</td>
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<tr>
<td>Number of Mortality and Morbidity conferences</td>
<td>2</td>
<td>9</td>
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*Medicine floors include 2N Progressive Care, 2N Medicine, 3E Medicine, 2S Medicine, 2E Medicine

IMPROVEMENTS

System Level Changes in 2021-2022
- Implementation of a follow-up blood culture order set in electronic order entry system
- Pharmacy policy change for the inpatient initiation of buprenorphine for opioid use disorder
- Implementation of an opioid withdrawal order set for non-pregnant patients
- Modification of a current admission order set to reduce an inappropriate PPI use
- Shortening of the default duration of intravenous fluid orders from 30 days to 48 hours
- Hypertensive urgency treatment order set to reduce intravenous antihypertensive use
- Thrombophilia workup order set to reduce unnecessary lab orders
- Discharge medication reconciliation
- Intraoperative heparin algorithm adjustment
-试点项目在2S中，由Dr. Manning领导
- Intraoperative heparin algorithm adjustment
- Pilot project in 2S in which a pharmacist reviews discharge medication reconciliation done by primary team

SIGNIFICANCE

QIPS education during residency helps residents adopt safety habits and QI mindsets during early career stage. Development of the knowledge and skills of residents in QIPS will promote the delivery of safe, effective, patient centered, timely, efficient, and equitable care for patients throughout the rest of their careers.

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