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Multimodal Needs Assessments for Curricular Refinement – Learner, Expert, EMR

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Multimodal Needs Assessments for Curricular Refinement: Learner, Expert, EMR

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BACKGROUND
- Internal Medicine Residents rotate through two medical ICUs: VCU MRICU and VA MICU
- The fellows and faculty rotate on a schedule separate from the residents; teams dynamically change in the rotation
- Residents have identified standardized curriculum coverage as a key area of need for their ICU learning

OBJECTIVES
- Explore the educational formats and resource preferences of house staff
- Identify ICU topics thought to be important by experts in the field
- Identify clinically relevant ICU topics
- Build an interactive, standardized cognitive aid that serves both as an instructional resource for house staff and a prompt for those teaching

METHODS
- Performed a learner-centered needs assessment exploring educational format preferences of house staff
  - Representative resident sample from different career tracks: generalist, hospitalist, and subspecialist
- Gathered expert opinion to prioritize important ICU learning needs
  - VA MICU and VCU MRICU faculty, fellows, and advanced practice providers
  - Three-round modified Delphi sort
- Determined which problems were most frequently encountered in the ICU
  - Collected and quantified 1 year of de-identified EMR data about reasons for MRICU consults
  - Coded by a single reviewer and listed in order of frequency
- Created a standardized document as a cognitive aid and resource for ICU curriculum coverage
  - Combine Expert Delphi and EMR query into one, easy to use resource

Learner-Centered Needs Assessment:
- Modified Delphi Sort
- EMR Query:

DATA SUMMARY

<table>
<thead>
<tr>
<th>Resident Assessment</th>
<th>Expert Modified Delphi Sort</th>
<th>EMR Query (in order of frequency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short talks preferred</td>
<td>Ventilator Basics</td>
<td>Respiratory Failure (hypoxic &amp; hypercapnic)</td>
</tr>
<tr>
<td>Handouts for outside learning</td>
<td>Ventilator Advanced</td>
<td>Sepsis</td>
</tr>
<tr>
<td>Shared framework</td>
<td>Sepsis</td>
<td>Shock</td>
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<td>Multimedia learning</td>
<td>Shock/Vasopressors</td>
<td>Obstructive Lung Disease</td>
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<tr>
<td>ICU Toxicology</td>
<td>Alcohol Withdrawal</td>
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<tr>
<td>Sedation/Delirium</td>
<td>Electrolyte Disorders</td>
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<tr>
<td>Gastrointestinal Hemorrhage</td>
<td>Gastrointestinal Hemorrhage</td>
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<tr>
<td>Antibiotics in the ICU</td>
<td>Cirrhosis</td>
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<tr>
<td>ARDS</td>
<td>Acute Liver Failure</td>
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<tr>
<td>Acid Base</td>
<td>Diabetic Ketoacidosis</td>
<td></td>
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<tr>
<td>Palliative Care</td>
<td>Acute Kidney Injury</td>
<td></td>
</tr>
<tr>
<td>Free Space for Rotation specific cases</td>
<td>Altered Mental Status</td>
<td></td>
</tr>
</tbody>
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CONCLUSIONS
- We successfully created a teaching curriculum to address a need identified by our residents
- There was a discordance between expert and EMR-identified topics
- Some topics are taught elsewhere in the learner’s residency
- Many ICU problems develop after admission/initial consult
- A two-week trial of the MRICU passport with non-EMR driven topics was performed
- Resident Feedback:
  - Generally well received
  - Passport would take time to be fully adopted in ICU routine
  - Liked linking the topics to an online education resource
  - Expectations met with short lecture, high yield fact sheets, and links to further information
- Faculty Feedback:
  - Passport served as a reminder of which topics had been covered and which were left to cover

FUTURE DIRECTIONS
- Discordance of topics will be reassessed for opportunities to include EMR-driven, high-yield clinically encountered topics
- Periodically review EMR for changes in practice and relevance
- In-services for faculty and residents will be required to establish standard use as well as buy-in
- Will evaluate the feasibility of launching an EMR query at the VA medical center
- Goal is for this to be adopted as the standard curriculum for teaching across all ICU learning environments

REFERENCES