Identifying Barriers to MRI and Ultrasound Use in the Emergency Department

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Background

- Computed tomography (CT) has high diagnostic accuracy, but its use is not without risk. A typical CT study can reach radiation doses that have been shown to increase the risk of cancer. For this reason, guidelines have been developed that suggest the use of radiation-free imaging techniques such as magnetic resonance imaging (MRI) and ultrasound (US) when appropriate.
- Despite these guidelines, CT use remains high. The Cabana Model of physician adherence to practice guidelines describes seven general categories of barriers to successful guideline implementation. A complete understanding of barriers present is critical to designing successful interventions to improve compliance.

Purpose

• In order to improve guideline adherence, the specific barriers and facilitators must be understood. The primary objective of this study was to identify barriers and facilitators to guideline-adherent use of MRI and US in the Emergency Department (ED).

Methods

- Semi-structured focus groups were conducted with emergency physicians and radiologists.
- Focus groups were conducted at two hospitals in the City of Madison: one academic and one large private.
- Groups were moderated with discussion guides using open-ended questions. Discussions were audio recorded and transcribed for later analysis.
- Transcripts were analyzed using conventional content analysis to identify key themes.

Results

- Barriers identified:
 - Time in the department
 - Access to the study
 - Operator experience
 - Patient factors
 - Patient preference
 - Lack of guideline awareness
 - Guideline change
 - Lack of acceptance by other specialties
- Facilitators identified
 - 24/7 availability
 - Experienced technicians
 - Having a protocol in place
 - Flexibility in guidelines

Sequence of Behavior Change Knowledge Behavior Attitudes Barriers to Lack of Outcome Expectancy Lack of Familiarity External Barriers Guideline Physician Believes That Volume of Information Patient Factors Adherence Performance of Guideline Time Needed to Stay Informed Inability to Reconcile Lack of Agreement With Recommendation Will Not Guideline Accessibility Specific Guidelines Patient Preferences With Lead to Desired Outcome Guideline Recommendations Interpretation of Evidence Applicability to Patient Not Cost-Beneficial Guideline Factors Guideline Characteristics Lack of Confidence in Lack of Self-Efficacy Guideline Developer Presence of Contradictory Physician Believes that Guidelines He/She Cannot Perform Lack of Agreement With Guideline Recommendation Guidelines in General Environmental Factors "Too Cookbook" Lack of Time Lack of Resources Too Rigid to Apply Lack of Awareness Biased Synthesis Organizational Constraints Lack of Motivation/ Challenge to Autonomy Lack of Reimbursement Volume of Information Inertia of Previous Practice Not Practical Perceived Increase in Time Needed to Stay Informed Malpractice Liability Guideline Accessibility Routines

The Cabana Model of physician adherence to clinical practice guidelines

Conclusions

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• Our focus groups identified a number of barriers and facilitators to MRI and US use in the ED. These barriers and facilitators can be used to implement interventions to increase guideline adherence.

Limitations

 Focus groups were conducted at large hospitals in a single urban center.
Barriers and facilitators may be different in different regions and in smaller hospitals.

Next Steps

- Conduct focus groups at medium and small-sized hospitals in suburban and rural areas to gain a more complete understanding of the phenomenon.
- Design an intervention bundle targeted at reducing the identified barriers to guideline-adherent use of MRI and US in the ED.

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