

Student Attitudes to Patient Safety in a Competency-Based Curriculum

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SHARED DISCOVERY
CURRICULUM

MICHIGAN STATE
UNIVERSITY

College of
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Background

- Medical schools around the country have incorporated specific patient safety training throughout their curricula.
- Evaluating the effectiveness of patient safety curricula is challenging as it typically includes evaluating attitudes in addition to behavior changes.

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Patient Safety and Implementation Science are a part of our curriculum template

- We have a "chief complaints and concerns" (C3) curricular structure
 - Approximately 90 C3 documents
 - Templated by the clinical problem-solving process
- Applies Necessary Science section includes specific patient safety and implementation science competencies for that C3

Chief Complaints and Concerns | Blood Pressure Concerns

Rationale
 Capstone Assessments
 Gathers Relevant Data
 History
 Physical Exam
 Develops Problem List/DDx
 Constructs Management Plan
 Laboratory/Imaging
 Non-Pharmacologic Management
 Pharmacologic Management
 Patient Education
 Applies Necessary Science
 Biological
 Psychological
 Social
 Considers Controversies/Complexities
 Guidelines/References/Overviews

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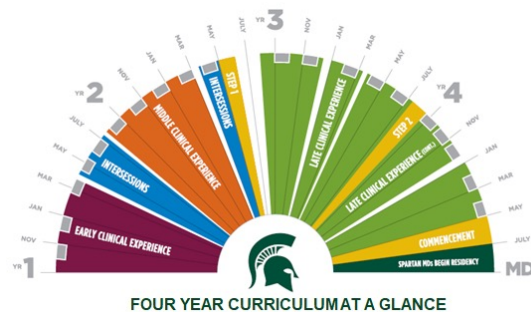
A curricular theme/stream

- Our students' necessary science and clinical learnings are determined by three curricular components
 - The **Early Clinical Experience** puts them in primary care offices 2 half days a week starting in week 9
 - Patient Safety objectives/resources/assignments in post-clinic small group/large group/simulation sessions
 - The **Middle Clinical Experience** places them in 12 rotations—some of which comprise portions of their clerkships and some of which put them with health care team members
 - Patient Safety objectives/resources/assignments in rotational small groups/large group/simulation sessions
 - The **Late Clinical Experience** contains clerkships and electives and Advanced Skills and Knowledge (ASK) courses
 - Patient Safety objectives/resources/assignments in each of 5 ASK curriculum segments

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Multiple years/multiple modalities

- The Shared Discovery Curriculum (SDC) integrates safety science learning with their classroom and clinical experiences
- They learn about safety in:
 - Weekly formative simulation sessions (years 1-2)
 - Laboratories (years 1-3)
 - Large group sessions (years 1-2)
 - Small group sessions (years 1-4)
 - Authentic patient care environments



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Sample small group objectives and resources

Patient Safety and Implementation Science

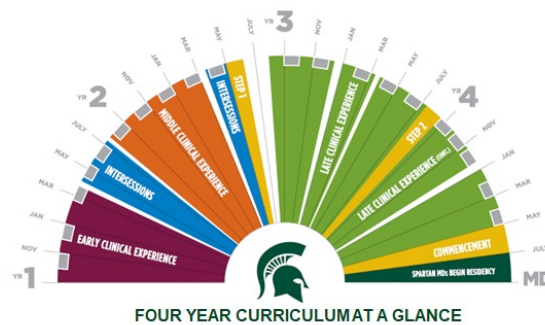
Use your training and assessment of scrupulous hand hygiene within the context of the world-wide problem of healthcare associated infections (HAI).

- Discuss as a group about how to solve the problem of faulty and/or inconsistent hand hygiene performance.
 - World Health Organization (2009). [Chapter 7: Transmission of Pathogens by Hands](#). *WHO Guidelines on Hand Hygiene in Health Care: First Global Patient Safety Challenge Clean Care is Safer Care*.
- Understand the scope of HAIs and their costs in morbidity, mortality, and expense.
 - World Health Organization | [Health Care–Associated Infections Fact Sheet](#)
- Discuss how hand hygiene practices among health-care workers and adherence to recommendations may influence the rates of Health Care Associated Infections.
 - World Health Organization (2009). [Chapter 16: Hand Hygiene Practices Among Health-Care Workers and Adherence to Recommendations](#). *WHO Guidelines on Hand Hygiene in Health Care: First Global Patient Safety Challenge Clean Care is Safer Care*.
 - Moore, L. D., Robbins, G., Quinn, J., & Arbogast, J. W. (2021). [The Impact of COVID-19 Pandemic on Hand Hygiene Performance in Hospitals](#). *American Journal of Infection Control*, 49(1), 30–33.
- List a few characteristics of High Reliability Organizations and discuss how these may be useful to improve adherence to hand hygiene performance.
 - Gamble, M. (2013) [5 Traits of High Reliability Organizations: How to Hardwire Each in Your Organization](#) | Becker's Hospital Review website
- Learn some basics about safety science and a culture of safety.
 - Agency for Healthcare Research and Quality. [10 Patient Safety Tips for Hospitals](#). Online content last reviewed June 2018. AHRQ, Rockville, MD.
- Describe the mechanism by which hand washing and hand sanitizers reduce various pathogens (bacteria, enveloped virus, non-enveloped virus) on the skin. *(To accomplish this objective you need general knowledge on bacterial and viral structure. You will continue to learn more about this in subsequent weeks of the ECE).*
 - [Bacterial Structure Overview](#) | Microbiology Society website
 - [Viral Structure Overview](#) | Microbiology Society website
 - About handwashing: Jabr, F. (2020). [An Old Friend Remains as Reliable as Ever](#). *New York Times*, Late Edition (East Coast); New York, N.Y. 17 Mar 2020: D.8.

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Purpose of study

- To determine differences in attitudes to patient safety between first- and third-year students
- To assess effectiveness of the patient safety curriculum



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Methods

- We surveyed 380 medical students during summer semester of 2020.
 - 193 first- and 187 third-years
- We used the Attitudes to Patient Safety Questionnaire ([APSQ](#))
 - 33 questions
 - Self-reported knowledge, attitudes and beliefs regarding core principles of patient safety and prevention
 - Most of the questions are 7-point Likert scale from strongly disagree to strongly agree with a neutral option.

Example Items:

- My training is preparing me to understand the causes of medical errors.
- I am confident I could talk openly to my supervisor about an error I had made, no matter how serious the outcome had been for the patient.
- The number of hours doctors work increases the likelihood of making errors.
- It is not necessary to report errors which do not result in adverse outcomes for the patient.

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Methods

- The survey was delivered online using the Qualtrics survey platform.
 - Completion of the survey counted toward students' course grades.
 - Students uploaded an automated e-mail confirming completion to their electronic portfolios.
 - Content of responses was anonymous.
 - Participation was close to 100%.
- Cochran-Mantel-Haenszel test (SPSS) was employed to test the differences in answers between the two cohorts of students.

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Results

- For 24 items, there was no difference in the patterns of responses from first- and third-year students
- For 9 items, there were statistically significant differences

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No differences for most questions

Question	P-value
I have a good understanding of patient safety issues as a result of my training	0.092
Comfortable reporting any errors other people had made, no matter how serious the outcome	0.072
Confident could talk openly to my supervisor about an error I made if it resulted in harm to my patient	0.099
Shorter shifts for doctors will reduce medical errors	0.178
By not taking regular breaks during shifts doctors are at increased risk of making errors.	0.519
Number of hours doctors work increases the likelihood of making medical errors.	0.718
Even the most experienced and competent doctors make errors.	0.248
A true professional does not make mistakes or errors.	0.180
Most medical errors result from careless nurses.	0.173
If people paid more attention at work, medical errors would be avoided.	0.668
Most medical errors result from careless doctors.	0.801
Medical errors are a sign of incompetence	0.811
It is not necessary to report errors which do not result in adverse outcomes for the patient.	0.315
Responsibility to disclose errors to patients only if they result in patient harm.	0.115
Better multi-disciplinary teamwork will reduce medical errors.	0.303
Patients have an important role in preventing medical errors.	0.351
Encouraging patients to be more involved in their care can help to reduce medical errors	0.136
Patient safety issues cannot be taught and can only be learned by clinical experience when qualified.	0.774

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Overall trends in responses

- First and third years had generally positive attitudes toward safety
 - Role of teamwork to reduce errors
 - Involving patients in their care
 - Error not related to competence
 - Importance of reporting errors

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Attitudes toward duty hours

- Students overall agreed that:
 - Shorter shifts for doctors will reduce medical errors
 - By not taking regular breaks during shifts doctors are at an increased risk of making errors
 - The number of hours doctors work increases the likelihood of making medical errors

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Knowledge

- Overall students felt they had knowledge about:
 - Factors influencing patient safety
 - Ways of speaking up about error
 - What should happen if an error is made
- But were more neutral regarding:
 - Different types of human error
 - Factors contributing to human error
 - The role of healthcare organization in error reporting

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Overall agree

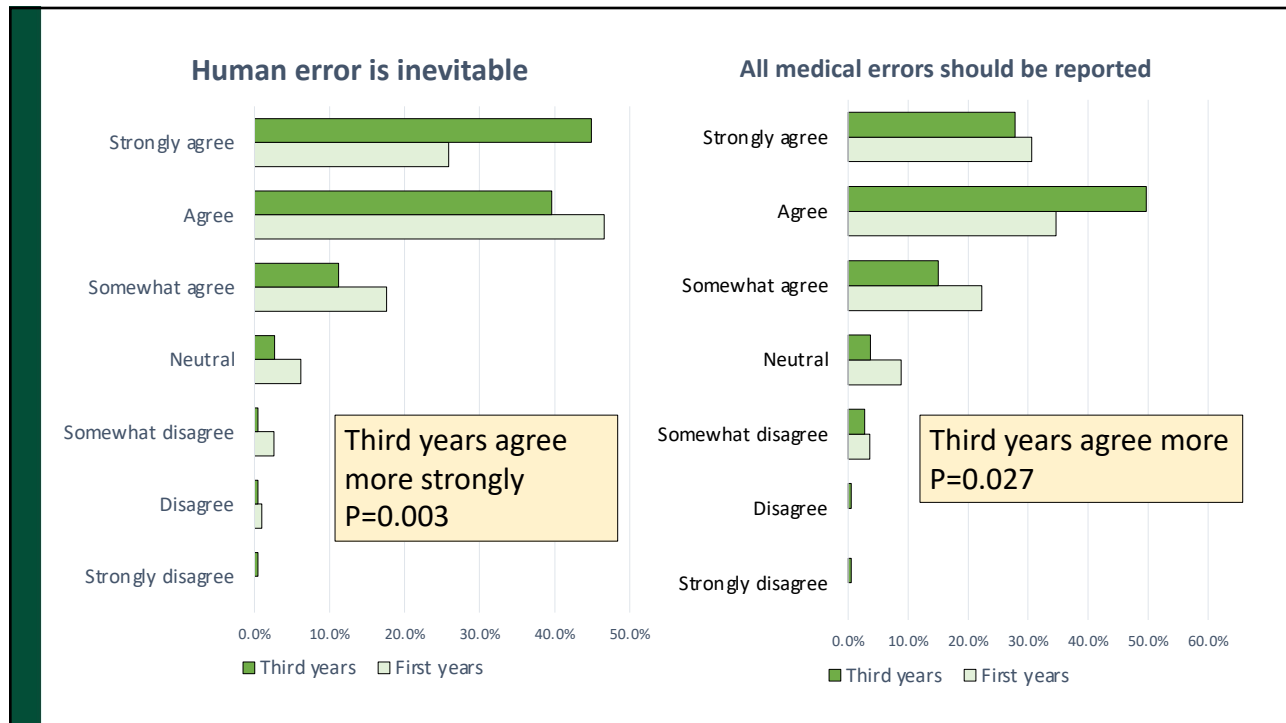
- Shorter shifts for doctors will reduce medical errors
- By not taking regular breaks during shifts doctors are at an increased risk of making errors
- The number of hours doctors work increases the likelihood of making medical errors
- Even the most experienced and competent doctors make errors
- Better multi-disciplinary teamwork will reduce medical errors
- Teaching teamwork skills will reduce medical errors
- Patients have an important role in preventing medical errors
- Encouraging patients to be more involved in their care can help to reduce the risk of medical errors occurring
- Factors influencing patient safety
- Ways of speaking up about error
- What should happen if an error is made

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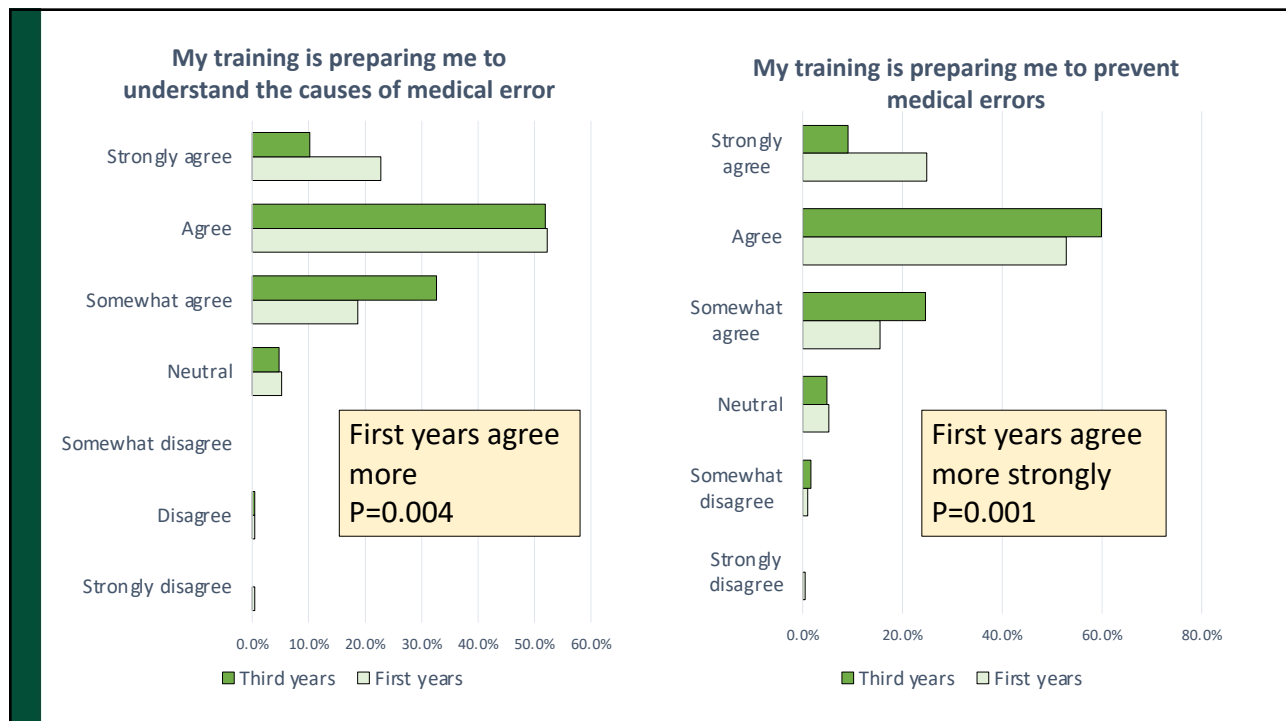
More neutral

- If people paid more attention at work, medical errors could be avoided
- Doctors have a responsibility to disclose errors to patients only if they result in patient harm
- Patient safety issues cannot be taught and can only be learned by clinical experience when qualified
- Different types of human error
- Factors contributing to human error
- The role of healthcare organization in error reporting

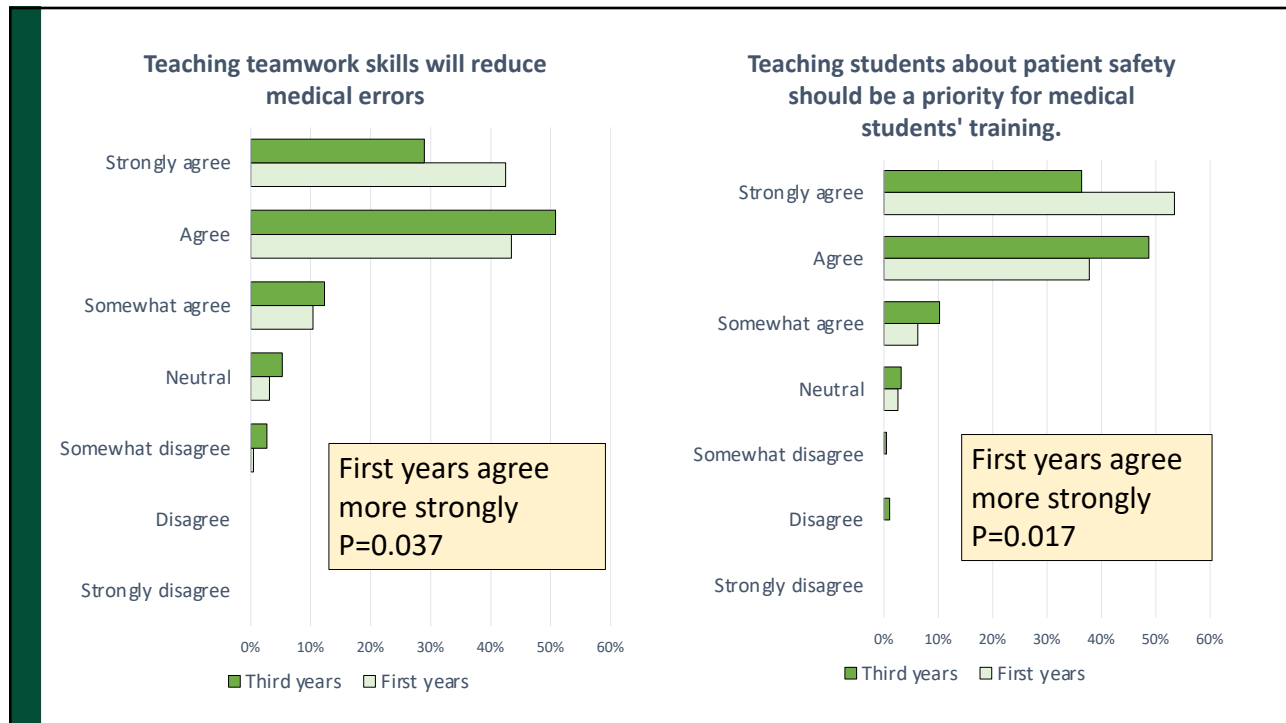
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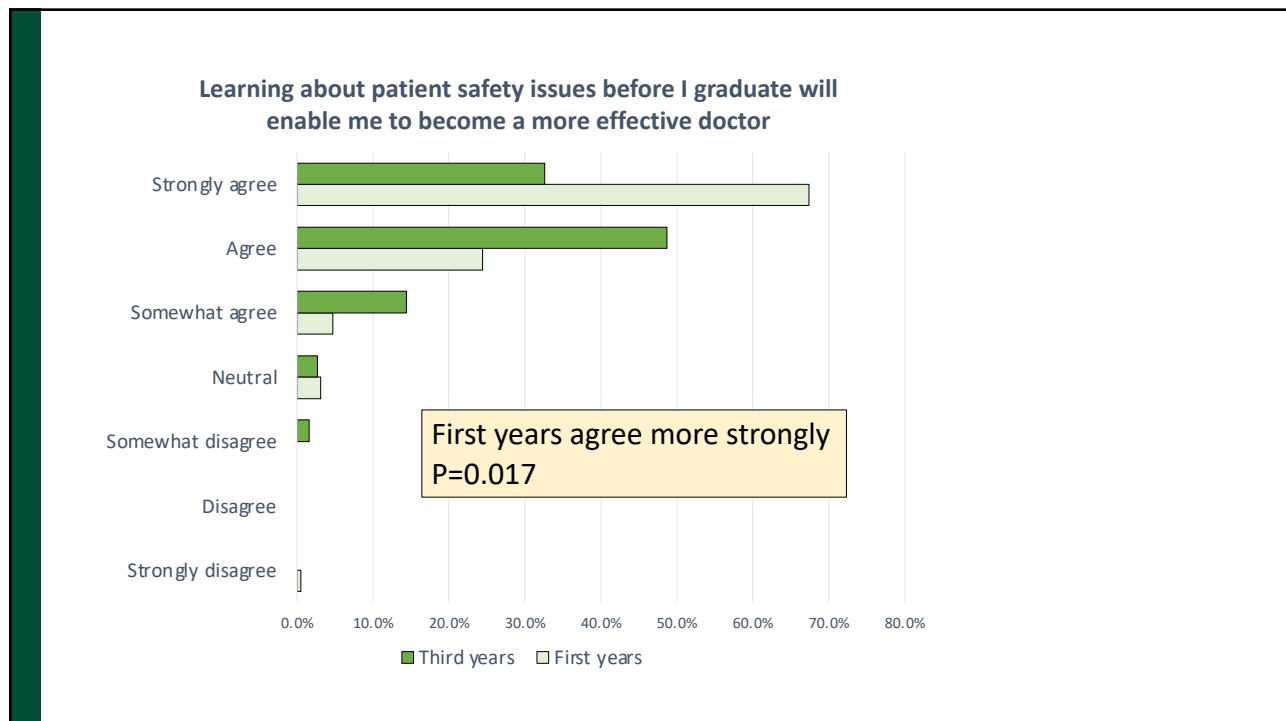
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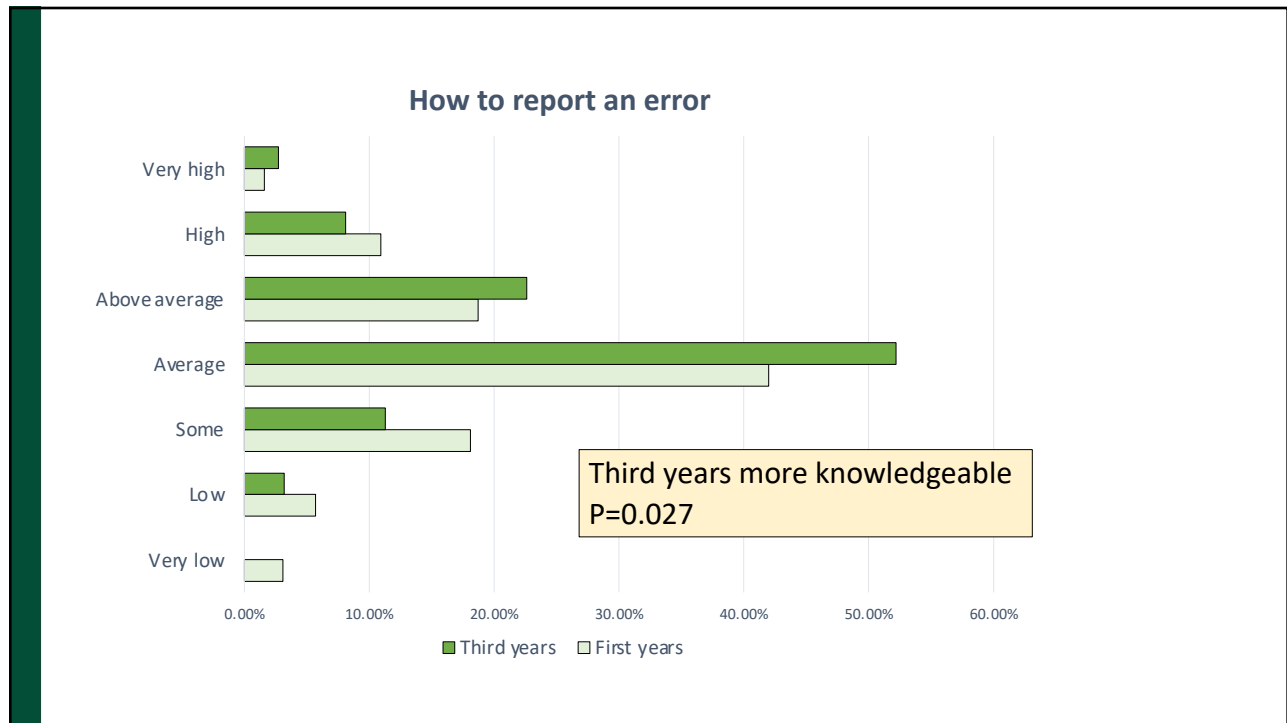
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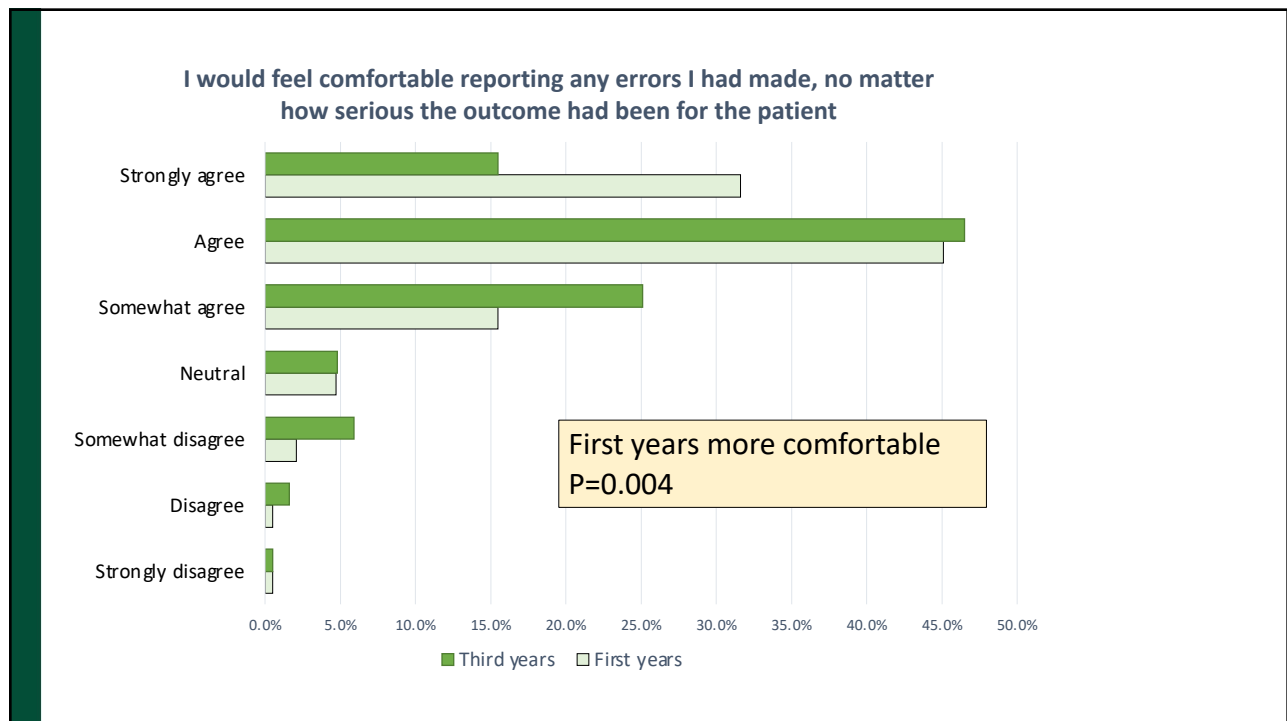
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Conclusions

- Our patient safety curriculum aims to empower students to embrace their role and responsibility for patient safety.
- Our students train in operational clinical sites from their first semester, interacting within systems that have varying cultures, policies and procedures.
- **First and third-year students generally agreed with core patient safety concepts and strategies.**
- **We saw a decline in enthusiasm in key areas among third years.**
- The trend was significant and merits further investigation to determine possible interventions to reverse this pattern.

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The challenge is AUTHENTICITY

- Medical schools have long recognized how challenging it is to change attitudes and behaviors related to patient safety.
- Determining the ability of the curriculum to influence versus interactions in operational health care settings allows us to focus our resources appropriately.
- **Is safety a central value of our actual patient care environments?**
 - Is it about who is right or what is right?
- **How do we navigate challenges across hundreds of clinical sites across the state?**



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Selected References

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Oates K, Wilson I, Hu W, et al. Changing medical student attitudes to patient safety: a multicentre study. *BMC Med Educ*. 2018; 18:205. <https://doi.org/10.1186/s12909-018-1313-0>

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