STANFORD SCHOOL OF MEDICINE
Stanford University Medical Center

Diagnostic Errors in Pediatric Cardiac Intensive Care

THANK YOU FOR YOUR PARTICIPATION!

Please read each question carefully and provide the best response(s). Please try to answer all questions and click 'Done' when you have finished the survey. Remember, your responses are CONFIDENTIAL.

Survey completion will take approximately 30 minutes.

* 1. Please indicate your provider classification:

- Registered Nurse
- Clinical Fellow
- CVICU Hospitalist
- CVICU Nurse Practitioner (NP)
- Physician Assistant (PA)
- Faculty/Attending Cardiac Intensivist
- Other (cardiology consultant, ICU consultant, etc)

* 2. What is your gender?

- Male
- Female

* 3. How long have you been employed in your current position?

- Less than 1 year
- 1-5 years
- 6-10 years
- Greater than 10 years

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* 4. Please read the following list of clinical activities, and rank the top three in order of their potential for errors. A ranking of “FIRST” would indicate that the activity has the highest frequency of errors.

An error is defined as an act of commission (doing something wrong) or omission (failing to do the right thing) that leads to an undesirable outcome of significant potential for such an outcome. Errors may or may not cause harm to a patient.

Please rank the TOP THREE ACTIVITIES in order of FREQUENCY OF ERRORS by clicking on one button per column below:

	FIRST	SECOND	THIRD
Evaluation and diagnosis-related activities, such as history and physical, and/or obtaining diagnostic tests and consultations	○	○	○
Medication-related activities, such as prescribing, dispensing or administering of medications	○	○	○
Monitoring-related activities, such as follow-up on laboratory or diagnostic studies or close follow-up of acutely or chronically ill children	○	○	○
Non-surgical procedure-related activities, such as chest tube placement or venipunctures	○	○	○
Prevention-related activities, such as hand washing, medication reconciliation, or vaccination status	○	○	○

* 5. Rank the TOP THREE ACTIVITIES in order of MOST POTENTIAL TO HARM A PATIENT, regardless of frequency, by clicking on one button per column below.

	FIRST	SECOND	THIRD
Evaluation and diagnosis-related activities, such as history and physical, and/or obtaining diagnostic tests and consultations	○	○	○
Medication-related activies, such as prescribing, dispensing or administering of medications	○	○	○
Monitoring-related activities, such as follow-up on laboratory or diagnostic studies or close follow-up of acutely or chronically ill children	○	○	○
Non-surgical procedure-related activities, such as chest tube placement or venipunctures	○	○	○
Prevention-related activities, such as hand washing, medication reconciliation, or vaccination status	○	○	○

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* 6. Thinking about a pediatric CVICU similar to yours, please read the following list of breakdowns in the diagnostic process associated with diagnostic errors (delayed, wrong or missed diagnoses), and rank the top three most common in your opinion.

Diagnostic errors are defined as errors that occur when a diagnosis is:
Unintentionally delayed (sufficient information was available earlier but the correct diagnosis was not made until later),
Wrong (another diagnosis was made before the correct one), or,
Missed (no diagnosis was ever made) as judged from the eventual appreciation of more definitive information.

Please rank the TOP THREE most common breakdowns by clicking on one button per column below:

	FIRST	SECOND	THIRD
Failure to gather available medical information through history and physical and/or review of previous charts	○	○	○
Problems with ordering, performance or interpretation of diagnostic/laboratory tests	○	○	○
Failure to follow-up on abnormal diagnostic/laboratory test results	○	○	○
Delays in diagnostic studies related to the severity or complexity of patient's condition or illness	○	○	○
Delays in intervention related to the severity or complexity of patient's condition or illness	○	○	○

Other (please specify)

* 7. The medical literature has classified diagnostic errors (delayed, wrong or missed diagnoses) into different categories.

Please rank the TOP THREE in order of FREQUENCY of occurrence by clicking on one button per column below:

	FIRST	SECOND	THIRD
Cognitive errors as in inadequate data gathering or faulty medical decision-making	○	○	○
System-related errors, as in equipment problems, organizational issues (faulty policies/procedures), or problems in communication (hand-offs, care coordination)	○	○	○
Interplay of cognitive and system-related factors	○	○	○
“No-fault” errors such as those involving rare disease or unusual presentations of diseases, or those related to patient/caregiver nonadherence	○	○	○

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* 8. System-related factors such as a problematic work environment may lead to diagnostic errors.

Please rank the TOP THREE system-related factors in order of FREQUENCY by clicking on one button per column below:

	FIRST	SECOND	THIRD
Inadequate care coordination, teamwork and/or communication across clinical sites or providers.	○	○	○
Personnel issues, such as staffing or training/orientation to work site	○	○	○
Cultural issues, such as chain of command deficiencies	○	○	○
Work environment issues, such as inter-personal conflict	○	○	○
Inadequate supervision of trainees	○	○	○
Technical problems, such as equipment not available or not working	○	○	○
Unavailability of subspecialist expertise when needed	○	○	○
Inadequate information systems to facilitate access to clinical data	○	○	○
Unavailability of resources such as diagnostic testing due to financial/insurance reasons	○	○	○

Other (please specify)

* 9. Please read the following list of cognitive factors that may lead to diagnostic errors (delayed, wrong, or missed diagnoses), and rank the top three factors in order of their frequency of occurrence in your opinion.

Please rank the TOP THREE in order of FREQUENCY by clicking on one button per column below:

	FIRST	SECOND	THIRD
Inadequate data-gathering or work-up, such as incomplete history and physical	○	○	○
Inadequate data assessment such as failure to pursue a correct diagnosis once an initial (but incorrect) diagnosis has been made	○	○	○
Inadequate knowledge base	○	○	○
Inadequate recognition of critical information previously documented in the chart	○	○	○

* 10. Medical decision-making may be affected by other factors. Please RANK THE TOP THREE medical decision-making errors in order of frequency by clicking on one button per column below.

	FIRST	SECOND	THIRD
Being misled by advice or anticipated advice from other physicians	○	○	○
Being too focused on one diagnosis or treatment plan	○	○	○
Being misled by a normal history and physical, laboratory result or imaging study	○	○	○
Having an attitude towards the patient either of dislike or of fondness	○	○	○
Overconfidence about one's own diagnostic ability	○	○	○

Other (please specify)

* 11. Please read the following list of miscellaneous factors that may lead to diagnostic errors (delayed, wrong, or missed diagnoses), and rank the top three factors in order of their frequency of occurrence in your opinion.

Please rank the TOP THREE in order of FREQUENCY by clicking on one button per column below:

	FIRST	SECOND	THIRD
Health literacy of the patient/family	○	○	○
Inexperience of the provider	○	○	○
Interruptions/pages	○	○	○
Language barriers	○	○	○
Parental pressure	○	○	○
Provider insensitivity to cultural/ethnic differences	○	○	○
Provider overreliance on memory	○	○	○
Time/workload issues	○	○	○
Your emotions such as personal issues affecting your work	○	○	○

Other (please specify)

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* 12. Please read the following list of conditions that are potentially associated with diagnostic errors (delayed, wrong or missed diagnoses), and rank the top three conditions in order of their frequency of misdiagnosis.

Please rank the TOP THREE in order of FREQUENCY by clicking on one button per column below:

	FIRST	SECOND	THIRD
Medication side effects	○	○	○
Sepsis	○	○	○
Endocarditis	○	○	○

	FIRST	SECOND	THIRD
Pulmonary hypertension	○	○	○
Arrhythmia	○	○	○
Primary heart failure (including cardiomyopathies)	○	○	○
Pulmonary overcirculation/congestive heart failure (due to aortopulmonary connection(s))	○	○	○
Pneumothorax	○	○	○
Pleural/Pericardiac effusion	○	○	○
Valvar regurgitation or stenosis	○	○	○
Atrial or ventricular shunts (including baffle leaks)	○	○	○
Outflow tract obstruction (non-valvar)	○	○	○
Systemic or pulmonary venous obstruction (including baffle and cavopulmonary anastomosis)	○	○	○
Circulatory Shock	○	○	○
Adrenal insufficiency	○	○	○
Stroke	○	○	○
Seizure	○	○	○
Pneumonia	○	○	○
Psychiatric disorders (including delirium)	○	○	○
Viral illness diagnosed as a bacterial illness	○	○	○

Other (please specify)

* 13. Evaluate the following statements. IN YOUR EXPERIENCE, please select the BEST response to the following possible SEQUELAE as a direct or indirect result of diagnostic errors.

	0-5 occurences per year	5-10 occurences per year	10-20 occurences per year	20-30 occurences per year	>30 occurences per year
No Harm (absence of harm with sufficient information to determine)	○	○	○	○	○
No Detectable Harm (Not able to ascertain harm but harm may exist)	○	○	○	○	○
Minimal Temporary Harm (Harm resulting in no permanent injury and is minimal in severity)	○	○	○	○	○
Minimal Permanent Harm (e.g., scar)	○	○	○	○	○
Moderate Temporary Harm (Harm lasting a limited time only but does not require additional surgery, procedure, or resuscitation measures)	○	○	○	○	○
Severe Temporary Harm (No permanent injury yet causing great discomfort, injury and/or distress (e.g., additional procedure, surgery, resuscitation))	○	○	○	○	○
Moderate Permanent Harm (e.g., chronic renal insufficiency post acute renal failure)	○	○	○	○	○
Severe Permanent Harm (e.g., permanent loss of organ function)	○	○	○	○	○
Death (due to error, not related to the natural or expected course of the patient's condition or illness)	○	○	○	○	○

* 14. Concerning possible “provider-based” solutions to diagnostic errors (delayed, missed or wrong), please RANK THE TOP THREE in order of LIKELY EFFECTIVENESS by clicking on one button per column below:

	FIRST	SECOND	THIRD
Asking for informal second opinions from same specialty colleagues	○	○	○
Close follow-up of patients to ensure that the diagnosis is correct (rapid follow-up)	○	○	○
Empowering patients and families to be vigilant about the possibility of diagnostic errors	○	○	○
Improving teamwork between all members of the health care team	○	○	○
Increasing time spent in clinical encounters	○	○	○
More training in clinical reasoning skills	○	○	○

Other (please specify)

* 15. Concerning system-based solutions, please RANK the TOP THREE in order of LIKELY EFFECTIVENESS by clicking on one button per column below:

	FIRST	SECOND	THIRD
Access to electronic medical records (EMR) which provides comprehensive patient data	○	○	○
Diagnostic decision support tools: Internet, electronic medical reference texts, electronic decision-support tools	○	○	○
Establishing a peer review process for randomly selected patient records	○	○	○
Establishing feedback pathways to communicate changes in diagnoses to previous providers	○	○	○
Increased access to and availability of consultants and experts	○	○	○

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* 16. I believe that structural changes in residency/fellowship programs resulting from the 80-hour work week or other ACGME mandates have contributed to an increase in diagnostic errors (delayed, wrong, or missed diagnoses) in pediatrics since 2003.

- ○ Strongly agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly disagree
- ○ Not applicable

* 17. Did you receive training in NURSING, PHYSICIAN ASSISTANT or MEDICAL SCHOOL on the significance of and factors that may lead to diagnostic errors (delayed, wrong or missed diagnoses)?

Please choose all that apply.

- [ ] Yes, in an informal curriculum
- [ ] Yes, in a formal curriculum
- [ ] No
- [ ] I do not remember

* 18. Did you receive training in your CLINICAL CURRICULUM, RESIDENCY or FELLOWSHIP on the significance of and factors that may lead to diagnostic errors (delayed, wrong or missed diagnoses)?

Please choose all that apply.

- [ ] Yes, in an informal curriculum
- [ ] Yes, in a formal curriculum
- [ ] No
- [ ] I do not remember

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* 19. If you have completed nursing school, physician assistant training, residency and/or fellowship, how many years have you been in practice?

- ( ) Not applicable
- ( ) Answer in number of years (*e.g., 5)*

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* 20. Please indicate the allocated percentage of TOTAL WORK time you spend in these areas (to total 100%)

Research	
Teaching	
Administration	
Clinical	

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21. For the purposes of calculating the number of responses by institution (the top three institutions will receive a monetary gift to the institution's intensive care unit), please indicate your affiliation. This question is not mandatory:

- Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago
- Boston Children's Hospital, Boston
- C.S. Mott Children's Hospital, Michigan
- The Hospital for Sick Children, Toronto
- Lucile Packard Children's Hospital, Stanford