

Supplemental Material

Strategies Used to Increase Patient Safety Event Reporting and Factors Addressed by Strategies

Article	Strategies Used					Factors Addressed by Strategies Used		
	Messages	Behavioral Modeling / Training	Survey s/ Interviews	Incentives	Disciplinary Actions	Predisposing Factors (ie, Personal)	Enabling Factors (ie, Environmental /System)	Reinforcing Factors (ie, Rewards/ Punishments)
Appelbaum NP, Dow A, Mazmanian PE, Jundt DK, Appelbaum EN. The effects of power, leadership and psychological safety on resident event reporting. <i>Med Educ.</i> 2016;50(3):343-350. doi:10.1111/medu.12947			X			X	X	
Ashar BH, Rice TN, Sisson SD. Physicians' understanding of the regulation of dietary supplements. <i>Arch Intern Med.</i> 2007;167(9):966-969. doi:10.1001/archinte.167.9.966			X				X	
Basu A, Gopinath D, Anjum N, Hotchkies S. Feedback in incident reporting - More needed. <i>Clin Gov.</i> 2009;14(1):38-41. doi:10.1108/14777270910933451			X					X
Bent PD, Bolsin SN, Creati BJ, Patrick AJ, Colson ME. Professional monitoring and		X					X	

Anton A, Wright J, Braithwaite M, Sturgeon G, Locke B, Milne C, et al. Creating a COVID-19 action plan for GME programs. *J Grad Med Educ.* 2020;12(4):399–402.

critical incident reporting using personal digital assistants. <i>Med J Aust.</i> 2002;177(9):496-499								
Boike JR, Bortman JS, Radosta JM, et al. Patient Safety Event Reporting Expectation. <i>J Patient Saf.</i> 2013;9(2):59-67. doi:10.1097/pts.0b013e3182676e53		x	x			x	x	
Bump GM, Coots N, Liberi CA, et al. Comparing Trainee and Staff Perceptions of Patient Safety Culture. <i>Acad Med.</i> 2017;92(1):116-122. doi:10.1097/ACM.0000000000001255			x			x	x	x
Bussel II, Abrahamyan A, Staehle W, Loj J, Patton J. Attitudes of physicians in training regarding reporting of patient safety events. <i>J Clin Outcomes Manag.</i> 2015;22(11):508-511		x	x			x	x	
Coffey M, Thomson K, Tallett S, Matlow A. Pediatric Residents' Decision-Making Around Disclosing and Reporting Adverse Events: The Importance of Social Context. <i>Acad Med.</i> 2010;85(10):1619-1625.			x			x	x	

doi:10.1097/acm.0b013e3181f046a6								
Cox LM, Logio LS. Patient safety stories: A project utilizing narratives in resident training. <i>Acad Med.</i> 2011;86(11):1473-1478. doi:10.1097/ACM.0b013e318230efaa		x				x	x	x
Coyle YM, Mercer SQ, Murphy-Cullen CL, Schneider GW, Hynan LS. Effectiveness of a graduate medical education program for improving medical event reporting attitude and behavior. <i>Qual Saf Heal Care.</i> 2005;14(5):383-388. doi:10.1136/qshc.2005.013979		x	x			x	x	x
DeSalvo DJ, Greenberg LW, Henderson CL, Cogen FR. A learner-centered diabetes management curriculum: Reducing resident errors on an inpatient diabetes pathway. <i>Diabetes Care.</i> 2012;35(11):2188-2193. doi:10.2337/dc12-0450		x					x	
Desbiens NA. Use of a residency program incident reporting system as an educational tool. <i>J Contin</i>	x	x					x	x

Anton A, Wright J, Braithwaite M, Sturgeon G, Locke B, Milne C, et al. Creating a COVID-19 action plan for GME programs. *J Grad Med Educ.* 2020;12(4):399–402.

<i>Educ Health Prof.</i> 1999;19(3):163-169								
Driver TH, Katz PP, Trupin L, Wachter RM. Responding to clinicians who fail to follow patient safety practices: Perceptions of physicians, nurses, trainees, and patients. <i>J Hosp Med.</i> 2014;9(2):99-105. doi:10.1002/jhm.2136			X		X		X	X
Dunbar AE, Cupit M, Vath RJ, et al. An Improvement Approach to Integrate Teaching Teams in the Reporting of Safety Events. <i>Pediatrics.</i> 2017;139(2):e20153807. doi:10.1542/peds.2015-3807		X					X	X
Falcone JL, Lee KKW, Billiar TR, Hamad GG. Practice-based learning and improvement: A two-year experience with the reporting of morbidity and mortality cases by general surgery residents. <i>J Surg Educ.</i> 2012;69(3):385-392. doi:10.1016/j.jsurg.2011.10.007		X						X
Fleming CA, Humm G, Wild JR, et al. Supporting doctors as healthcare quality and safety advocates: Recommendations	X		X			X	X	

from the Association of Surgeons in Training (ASiT). <i>Int J Surg.</i> 2018;52(February):349-354. doi:10.1016/j.ijisu.2018.02.002								
Flynn-O'Brien KT, Mandell SP, Eaton E Van, Schleyer AM, McIntyre LK. Surgery and Medicine Residents' Perspectives of Morbidity and Mortality Conference: An Interdisciplinary Approach to Improve ACGME Core Competency Compliance. <i>J Surg Educ.</i> 2015;72(6):e258-e266. doi:10.1016/j.jsurg.2015.05.015			X			X	X	
Foster PN, Sidhu R, Gadhia DA, DeMuis M. Leveraging computerized sign-out to increase error reporting and addressing patient safety in graduate medical education. <i>J Gen Intern Med.</i> 2008;23(4):481-484. doi:10.1007/s11606-007-0503-y	X			X			X	X
Fox MD, Bump GM, Butler GA, Chen L-W, Buchert AR. Making Residents Part of the Safety Culture. <i>J Patient Saf.</i> 2017;00(00):1.		X				X	X	X

doi:10.1097/pts.0000000000000344								
Freestone L, Bolsin SN, Colson M, Patrick A, Creati B. Voluntary incident reporting by anaesthetic trainees in an Australian hospital. <i>Int J Qual Heal Care.</i> 2006;18(6):452-457. doi:10.1093/intqhc/mzl054		x					x	
Friedman SM, Sowerby RJ, Guo R, Bandiera G. Perceptions of emergency medicine residents and fellows regarding competence, adverse events and reporting to supervisors: A national survey. <i>Can J Emerg Med.</i> 2010;12(6):491-499. doi:10.1017/S1481803500012719			x			x	x	
Garbutt J, Brownstein DR, Klein EJ, et al. Reporting and Disclosing Medical Errors. <i>Arch Pediatr Adolesc Med.</i> 2007;161(2):179. doi:10.1001/archpedi.161.2.179			x			x	x	x
González-Formoso C, Clavería A, Fernández-Domínguez MJ, et al. Effectiveness of an educational intervention to improve the safety culture in		x	x				x	

Anton A, Wright J, Braithwaite M, Sturgeon G, Locke B, Milne C, et al. Creating a COVID-19 action plan for GME programs. *J Grad Med Educ.* 2020;12(4):399–402.

primary care: a randomized trial. <i>BMC Fam Pract.</i> 2019;20(1):15. doi:10.1186/s12875-018-0901-8								
Gore DC, Powell JM, Baer JG, et al. Crew resource management improved perception of patient safety in the operating room. <i>Am J Med Qual.</i> 2010;25(1):60-63. doi:10.1177/1062860609351236		X	X			X	X	X
Gupta S, Naithani U, Brajesh SK, Pathania VS, Gupta A. Critical incident reporting in anaesthesia: a prospective internal audit. <i>Indian J Anaesth.</i> 2009;53(4):425-433	X	X					X	X
Harrison R, Lawton R, Stewart K. Doctors' experiences of adverse events in secondary care: The professional and personal impact. <i>Clin Med J R Coll Physicians London.</i> 2014;14(6):585-590. doi:10.7861/clinmedicine.14-6-585			X			X	X	X
Hatoun J, Suen W, Liu C, et al. Elucidating Reasons for Resident Underutilization of Electronic Adverse Event Reporting. <i>Am J Med Qual.</i>			X			X	X	X

2016;31(4):308-314. doi:10.1177/1062860615574504								
Heard GC, Sanderson PM, Thomas RD. Barriers to adverse event and error reporting in anesthesia. <i>Anesth Analg.</i> 2012;114(3):604-614. doi:10.1213/ANE.0b013e31822649e8			x			x	x	x
Herzer KR, Mirrer M, Xie Y, et al. Patient safety reporting systems: Sustained quality improvement using a multidisciplinary team and “good catch” awards. <i>Jt Comm J Qual Patient Saf.</i> 2012;38(8):339-347	x	x		x			x	x
Jansma JD, Wagner C, Bijnen AB. Residents’ intentions and actions after patient safety education. <i>BMC Health Serv Res.</i> 2010;10(1):350. doi:10.1186/1472-6963-10-350		x				x	x	x
Jansma JD, Wagner C, Ten Kate RW, Bijnen AB. Effects on incident reporting after educating residents in patient safety: A controlled study. <i>BMC Health Serv Res.</i> 2011;11(1):335. doi:10.1186/1472-6963-11-335		x	x				x	x

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Jericho BG, Tassone RF, Centomani NM, et al. An Assessment of an Educational Intervention on Resident Physician Attitudes, Knowledge, and Skills Related to Adverse Event Reporting. <i>J Grad Med Educ.</i> 2013;2(2):188-194. doi:10.4300/jgme-d-10-00036.1	x	x	x			x	x	x
Jones DL. Residents' Perspectives on Patient Safety in University and Community Teaching Hospitals. <i>J Grad Med Educ.</i> 2014;6(3):603-607. doi:10.4300/jgme-d-14-00350.1			x			x	x	x
Keefer P, Helms L, Warriar K, Vredevelde J, Burrows H, Orringer K. SAFEST: Use of a Rubric to Teach Safety Reporting to Pediatric House Officers. <i>Pediatr Qual Saf.</i> 2017;2(6):e045. doi:10.1097/pq9.0000000000000045		x					x	
Kroll L, Singleton A, Collier J, Rees Jones I. Learning not to take it seriously: Junior doctors' accounts of error. <i>Med Educ.</i> 2008;42(10):982-990.			x			x	x	x

doi:10.1111/j.1365-2923.2008.03151.x								
Krouss M, Alshaikh J, Croft L, Morgan DJ. Improving Incident Reporting Among Physician Trainees. <i>J Patient Saf.</i> September 2016:1-8. doi:10.1097/PTS.0000000000000325		x	x			x	x	x
Krouss M, Alshaikh J, Croft L, Morgan DJ. Improving Incident Reporting Among Physician Trainees. <i>J Patient Saf.</i> 2019;15(4):308-310. doi:10.1097/PTS.0000000000000325		x	x				x	
Kusano AS, Nyflot MJ, Zeng J, et al. Measurable improvement in patient safety culture: A departmental experience with incident learning. <i>Pract Radiat Oncol.</i> 2015;5(3):e229-e237. doi:10.1016/j.prro.2014.07.002		x	x				x	
Logio LS, Ramanujam R. Medical trainees' formal and informal incident reporting across a five-hospital academic medical center. <i>Jt Comm J Qual Patient Saf.</i> 2010;36(1):36-42. doi:10.1016/S1553-7250(10)36007-7			x			x	x	x

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Louis MY, Dhanraj DN, Khan BS, et al. Improving patient safety event reporting among residents and teaching faculty. <i>Ochsner J.</i> 2016;16(1):73-80		X	X			X	X	
Macht R, Balen A, McAneny D, Hess D. A Multifaceted Intervention to Increase Surgery Resident Engagement in Reporting Adverse Events. <i>J Surg Educ.</i> 2015;72(6):e117-e122. doi:10.1016/j.jsurg.2015.06.022		X					X	X
Martowiriono K, Jansma JD, Van Luijk SJ, Wagner C, Bijnen AB. Possible solutions for barriers in incident reporting by residents. <i>J Eval Clin Pract.</i> 2012;18(1):76-81. doi:10.1111/j.1365-2753.2010.01544.x			X				X	X
McCarthy SE, O'Boyle CA, O'Shaughnessy A, Walsh G. Online patient safety education programme for junior doctors: is it worthwhile? <i>Ir J Med Sci.</i> 2016;185(1):51-58. doi:10.1007/s11845-014-1218-9		X	X			X	X	
Miller ME, Patel A, Schindler N, et al. Bridging the Gap: Interdepartmental Quality		X	X			X	X	

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Improvement and Patient Safety Curriculum Created by Hospital Leaders, Faculty, and Trainees. <i>J Grad Med Educ.</i> 2018;10(5):566-572. doi:10.4300/JGME-D-18-00060.1								
Murphy M, Duff J, Whitney J, Canales B, Markham M-J, Close J. Implementation of a mock root cause analysis to provide simulated patient safety training. <i>BMJ Open Qual.</i> 2017;6(2):e000096. doi:10.1136/bmjog-2017-000096		X	X			X	X	X
Nabors C, Peterson SJ, Aronow WS, et al. Mobile physician reporting of clinically significant events-a novel way to improve handoff communication and supervision of resident on call activities. <i>J Patient Saf.</i> 2014;10(4):211-217. doi:http://dx.doi.org/10.1097/P TS.0b013e31829952ff		X	X				X	
Nabors C, Peterson SJ, Aronow WS, et al. Physician reporting of clinically significant events through a computerized patient sign-out system. <i>J Patient Saf.</i>		X	X				X	

2011;7(3):155-161. doi:10.1097/PTS.0b013e31822d7a66								
Okafor N, Doshi P, Miller S, et al. Voluntary Medical Incident Reporting Tool to Improve Physician Reporting of Medical Errors in an Emergency Department. <i>West J Emerg Med.</i> 2015;16(7):1073-1078. doi:10.5811/westjem.2015.8.27390		x					x	
Parikh RP, Snyder-Warwick A, Naidoo S, Skolnick GB, Patel KB. Impact of an Event Reporting System on Resident Complication Reporting in Plastic Surgery Training. <i>Plast Reconstr Surg.</i> 2017;140(5):736e-745e. doi:10.1097/prs.0000000000003771		x					x	
Plews-Ogan ML, Nadkarni MM, Forren S, et al. Patient safety in the ambulatory setting. <i>J Gen Intern Med.</i> 2004;19(7):719-725. doi:10.1111/j.1525-1497.2004.30386.x	x	x					x	x
Poorolajal J, Rezaie S, Aghighi N. Barriers to medical error reporting. <i>Int J Prev Med.</i>			x			x	x	

Anton A, Wright J, Braithwaite M, Sturgeon G, Locke B, Milne C, et al. Creating a COVID-19 action plan for GME programs. *J Grad Med Educ.* 2020;12(4):399–402.

2015;2015-Octob:1-9. doi:10.4103/2008-7802.166680								
Rosenthal MM, Cornett PL, Sutcliffe KM, Lewton E. Beyond the medical record: Other modes of error acknowledgment. <i>J Gen Intern Med.</i> 2005;20(5):404-409. doi:10.1111/j.1525-1497.2005.0098.x			x			x	x	x
Scott DR, Weimer M, English C, et al. A novel approach to increase residents' involvement in reporting adverse events. <i>Acad Med.</i> 2011;86(6):742-746. doi:10.1097/ACM.0b013e318217e12a	x	x	x	x		x	x	x
Singal M, Zafar A, Tbakhi B, Jadhav N, Alweis R, Bhavsar H. Assessment of knowledge and attitudes towards safety events reporting among residents in a community health system. <i>J community Hosp Intern Med Perspect.</i> 2018;8(5):253-259. doi:10.1080/20009666.2018.1527670			x			x	x	
Smith A, Hatoun J, Moses J. Increasing Trainee Reporting of Adverse Events With		x					x	x

Monthly Trainee-Directed Review of Adverse Events. <i>Acad Pediatr.</i> 2017;17(8):902-906. doi:10.1016/j.acap.2017.01.004								
Steen S, Jaeger C, Price L, Griffen D. Increasing Patient Safety Event Reporting in an Emergency Medicine Residency. <i>BMJ Qual Improv Reports.</i> 2017;6(1):u223876.w5716. doi:10.1136/bmjquality.u223876.w5716		X	X			X	X	X
Stewart DA, Junn J, Adams MA, et al. House Staff Participation in Patient Safety Reporting: Identification of Predominant Barriers and Implementation of a Pilot Program. <i>South Med J.</i> 2016;109(7):395-400. doi:10.14423/smj.0000000000000486	X	X	X			X	X	X
Szymusiak J, Walk TJ, Benson M, et al. Encouraging Resident Adverse Event Reporting: A Qualitative Study of Suggestions from the Front Lines. <i>Pediatr Qual Saf.</i> 2019;4(3):e167.			X			X	X	

doi:10.1097/pq9.00000000000000167								
Tevis SE, Schmocker RK, Wetterneck TB. Adverse Event Reporting: Harnessing Residents to Improve Patient Safety. <i>J Patient Saf.</i> 2017;00(00):1-5. doi:10.1097/PTS.00000000000000333		X	X			X	X	
Thoms G, Ellis R, Afolabi G, Graham M. Improving clinical supervision through formal incident reporting. <i>Med Educ.</i> 2012;46(11):1116-1117. doi:10.1111/medu.12002		X					X	X
Turner DA, Bae J, Cheely G, et al. Improving Resident and Fellow Engagement in Patient Safety Through a Graduate Medical Education Incentive Program. <i>J Grad Med Educ.</i> 2018;10(6):671-675. doi:10.4300/JGME-D-18-00281.1		X		X			X	X
Valery J, Helmi H, Spaulding A, et al. Video intervention to improve incident reporting among medical trainees. <i>BMJ open Qual.</i> 2019;8(4):e000706. doi:10.1136/bmjjoq-2019-000706		X	X			X	X	

<p>Vohra PD, Johnson JK, Daugherty CK, Wen M, Barach P. Housestaff and medical student attitudes toward medical errors and adverse events. <i>Jt Comm J Qual Patient Saf.</i> 2007;33(8):493-501. doi:10.1016/S1553-7250(07)33053-5</p>			<p>X</p>			<p>X</p>		
<p>Weingart SN, Callanan LD, Ship AN, Aronson MD. A physician-based voluntary reporting system for adverse events and medical errors. <i>J Gen Intern Med.</i> 2001;16(12):809-814. doi:10.1046/j.1525-1497.2001.10231.x</p>		<p>X</p>	<p>X</p>				<p>X</p>	
<p>Welsh CH, Pedot R, Anderson RJ. Use of morning report to enhance adverse event detection. <i>J Gen Intern Med.</i> 1996;11(8):454-460. doi:10.1007/BF02599039</p>	<p>X</p>					<p>X</p>		
<p>Wild D, Bradley EH. The gap between nurses and residents in a community hospital's error-reporting system. <i>Jt Comm J Qual Patient Saf.</i> 2005;31(1):13-20. doi:10.1016/S1553-7250(05)31003-8</p>			<p>X</p>			<p>X</p>		

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<p>Zwart DLM, Heddemma WS, Vermeulen MI, Van Rensen ELJ, Verheij TJM, Kalkman CJ. Lessons learnt from incidents reported by postgraduate trainees in Dutch general practice. A prospective cohort study. <i>BMJ Qual Saf.</i> 2011;20(10):857-862. doi:10.1136/bmjqs.2010.045484</p>		x					x	
<p>Zwart DLM, Sterneman AHM, Van Rensen ELJ, Kalkman CJ, Verheij TJM. Feasibility of centre-based incident reporting in primary healthcare: The SPIEGEL study. <i>BMJ Qual Saf.</i> 2011;20(2):121-127. doi:10.1136/bmjqs.2009.033472</p>	x							x