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Table 02: Sample of tools available to assess the risk of wound infection			
Risk assessment tool	Wound type	Risk variables	Predictive power
Australian Clinical Risk Index (ACRI) <sup>1</sup>	Surgical site infection following cardiac surgery	Includes diabetes and BMI as risk variables	Low predictive ability in all types of cardiac patient (AUC = $0.64$ , $95\%$ CI, $0.5$ to $0.7$ ) <sup>2</sup>
Brompton and Harefield Infection (BHIS) Score <sup>3</sup>	Surgical site infection following cardiac surgery	Includes gender, diabetes, BMI, cardiac function and emergency vs elective surgery status	Moderate predictive ability (area of receiver operating characteristic (aROC) curve=0.727) <sup>3</sup>
Malunion of the Sternum (MUST) score <sup>4</sup>	Surgical site infection following cardiac surgery	Includes age, gender, BMI, previous surgery and diabetes as risk variables	Moderate predictive ability (area under curve [AUC] = 0.76, 95% confidence interval [CI] 0.72 to 0.79) <sup>4</sup>
National Nosocomial Infections Surveillance Risk Index <sup>5</sup>	Surgical site infection in surgical wounds	Includes surgical contamination status, pre-anaesthetic score and surgery duration.	Low predictive ability in cardiac surgery patients (AUC = $0.62 (95\% \text{ CI})$ $0.5 \text{ to } 0.7)^2$
Perth Surgical Wound Dehiscence Risk Assessment Tool (PSWDHRAT) <sup>6</sup>	Wound dehiscence in surgical wounds	Includes comorbidities, smoking, previous surgery, age and BMI as risk variables	Moderate predictive power (71%) <sup>6</sup>
Wounds At Risk (WAR) Score <sup>7, 8</sup>	All wounds	Comorbidities, medications, wound contamination, age, wound duration, wound aetiology, wound dimensions, wound anatomical location	Correlation shown between WAR score of and confirmed presence of <i>Pseudomonas aeruginosa</i> (p=0.0001). <sup>8</sup>
Wound Infection Calculator <sup>9</sup>	Post operative wound infection following spinal surgery	Includes gender, BMI, smoking, physical status score, level of surgical invasiveness	High predictive ability (AUC = 0.81) <sup>9</sup>
Wound Infection Risk Assessment and Evaluation tool (WIRE) <sup>10</sup>	Community-based wounds.	Comorbidities, immune status, smoking, medications, nutrition, antibiotic therapy	Psychometric testing is planned <sup>10</sup>

## **Table 02 References**

- 1. Friedman ND, Bull AL, Russo PL, Leder K, Reid C, Billah B, et al. An alternative scoring system to predict risk for surgical site infection complicating coronary artery bypass graft surgery. Infect Control Hosp Epidemiol. 2007; 28(10): 1162-8.
- Figuerola-Tejerina A, Bustamante E, Tamayo E, Mestres CA, Bustamante-Munguira J. Ability to predict the development of surgical site infection in cardiac surgery using the Australian Clinical Risk Index versus the National Nosocomial Infections Surveillance-derived Risk Index. Eur J Clin Microbiol Infect Dis. 2017; 36(6): 1041-6.
- 3. Raja SG, Rochon M, Jarman JWE. Brompton Harefield Infection Score (BHIS): development and validation of a stratification tool for predicting risk of surgical site infection after coronary artery bypass grafting. Int J Surg. 2015; 16(Pt A): 69-73.
- 4. Nooh E, Griesbach C, Rösch J, Weyand M, Harig F. Development of a new sternal dehiscence prediction scale for decision making in sternal closure techniques after cardiac surgery. Journal of Cardiothoracic Surgery. 2021; 16(1): 174.
- 5. Culver DH, Horan TC, Gaynes RP, Martone WJ, Jarvis WR, Emori TG, et al. Surgical wound infection rates by wound class, operative procedure, and patient risk index. National Nosocomial Infections Surveillance System. Am J Med. 1991; 91(3b): 152s-7s.
- 6. Sandy-Hodgetts K, Carville K, Santamaria N, Parsons R, Leslie GD. The Perth Surgical Wound Dehiscence Risk Assessment Tool (PSWDRAT): development and prospective validation in the clinical setting. J Wound Care. 2019; 28(6): 332-44.
- 7. Dissemond J, Assadian O, Gerber V, Kingsley A, Kramer A, Leaper DJ, et al. Classification of wounds at risk and their antimicrobial treatment with polihexanide: a practice-oriented expert recommendation. Skin Pharmacol Physiol. 2011; 24(5): 245-55.
- 8. Jockenhöfer F, Gollnick H, Herberger K, Isbary G, Renner R, Stücker M, et al. W.A.R. scores in patients with chronic leg ulcers: results of a multicentre study. J Wound Care. 2014; 23(1): 5-6, 8, 10-2.
- 9. Lubelski D, Feghali J, Ehresman J, Pennington Z, Schilling A, Huq S, et al. Web-based calculator predicts surgical-site infection after thoracolumbar spine surgery World Neurosurgery. 2021; 151: e571-e8 (calculator available online at <a href="https://jhuspine2.shinyapps.io/Wound\_Infection\_Calculator/">https://jhuspine2.shinyapps.io/Wound\_Infection\_Calculator/</a>).
- 10. Siaw-Sakyi V. Early wound infection identification using the WIRE tool in community health care settings: An audit report. British journal of community nursing. 2017; 22(Supplement12): S20-S7.