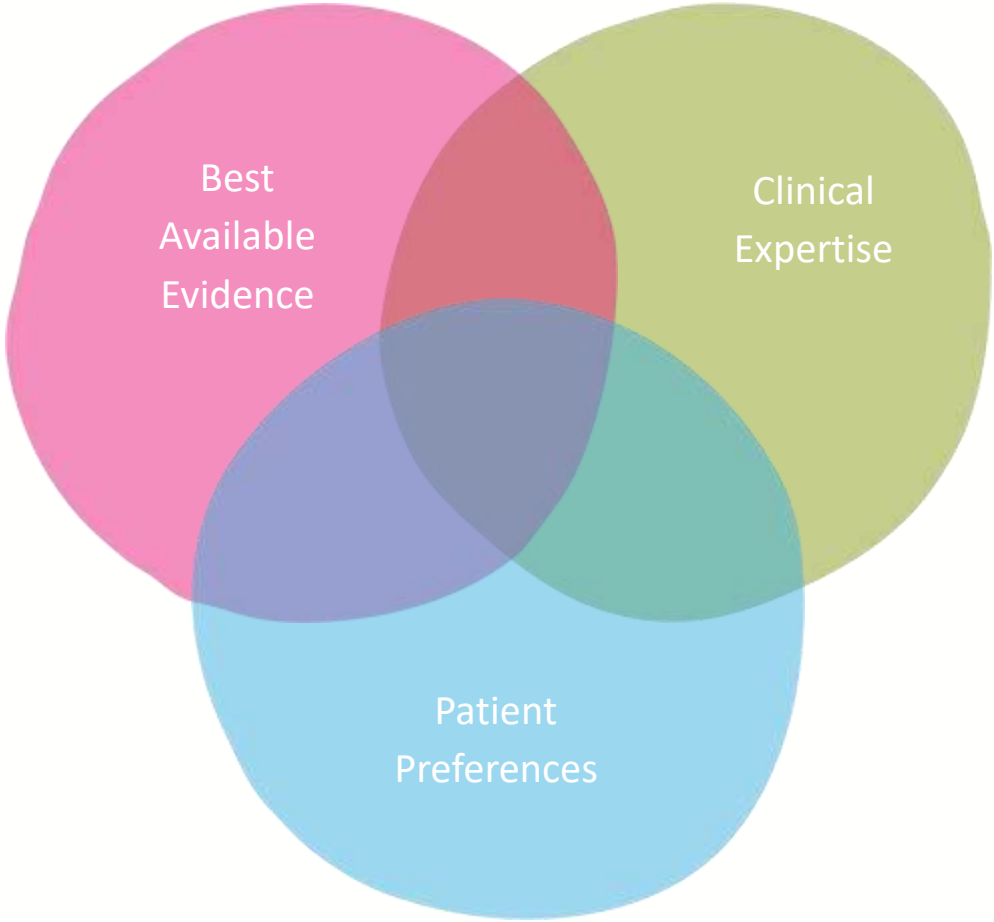
CARDIOLOGY 2025

AGREE TO DISAGREE:

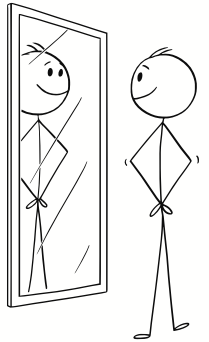
Getting on the Same Page About Incision Care

February 20th, 2025

Children's Hospital of Philadelphia®
Cardiac Center

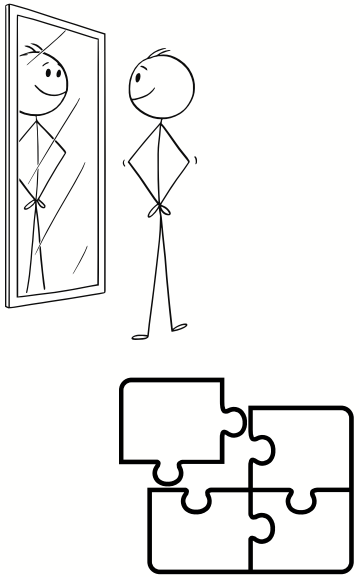

Best
Available
Evidence
Clinical
Expertise
Patient
Preferences


Best
Available
Evidence
Clinical
Expertise
Patient
Preferences



CARDIOLOGY
2025


Best
Available
Evidence
Clinical
Expertise
Patient
Preferences



PICO(T) QUESTION

P	Patients with midsternal incisions
I	Wound care
C	N/A
O	Outcome 1: infection Outcome 2: dehiscence
T	N/A

PICO(T) Question

In patients with midsternal incisions, what are best practices and strategies related to wound care to affect infection or dehiscence?

CARDIOLOGY 2025

INTERVENTION SYNTHESIS TABLE

	1	2	3	4	5	6	7	8	9	10	11	Count	Site
Air-permeable dressing (AP)		X	X	X		X				X		5	✓
Silver dressing (Ag)	X	X				X						3	✓ PRN
Negative pressure wound therapy (VAC)			X				X	X	X	X	X	6	✓
Hydrocolloid dressing (H)		X										1	
Film dressing (F)		X		X				X				3	✓
Vest (T)					X							1	Bra

Key: **Ag**: silver-impregnated dressing; **AP**: air-permeable dressing (Primapore, gauze/tape, Hansapore); **F**: film/hydroactive dressing (Opsite); **H**: Hydrocolloid dressing (Duoderm); **V**: Vest/Thoravest; **VAC**: Negative pressure wound therapy

OUTCOME SYNTHESIS TABLE

	1 (Webster, 2019)	2 (Dumville, 2016)	3 (Rashad, 2021)	4 (Segers, 2007)	5 (Gorlitzer, 2013)	6 (Huckfeldt, 2008)	7 (Sherman, 2020)	8 (Suelo-Calanao, 2020)	9 (Tabley, 2020)	10 (Tarzia, 2014)	11 (Peart, 2016)
Interventions Studied	VAC	Ag,F,H	AP,VAC	F, AP	V	Ag, AP	VAC	F, VAC	VAC	AP,VAC	VAC
Evidence Type	Systematic Review		Randomized Control Trial			Trial	Case Control or Cohort				Lit Review
Decreased SSI (clinically significant)	VAC	F>Ag>H	---	---	V	Ag	VAC	----		VAC	VAC
Improved wound healing			VAC							VAC	VAC
Reduced cost	VAC									VAC	
Improved patient comfort / satisfaction		---									
Decreased exudate	VAC										
Decreased complications	VAC		VAC	---	VAC		VAC			VAC	---
Decreased length of stay (LOS)				---				F		---	---
Decreased scar tissue		---	VAC				VAC				

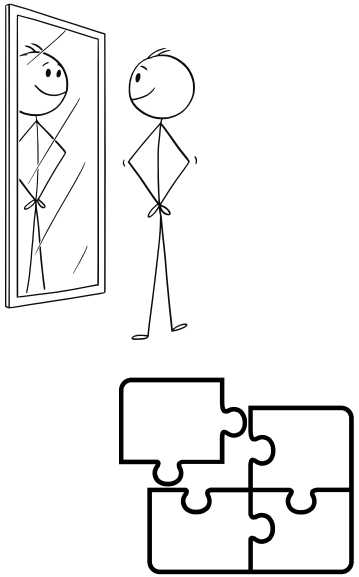
Key: **Ag**: silver-impregnated dressing; **AP**: air-permeable dressing (Primapore, gauze/tape, Hansapore); **F**: film/hydroactive dressing (Opsite); **H**: Hydrocolloid dressing (Duoderm); **V**: Vest/Thoravest; **VAC**: Negative pressure wound therapy

Symbol Key: **---** No Change

Key Wins

- Standardization where possible
  - Initial dressing per surgeon preference for 72 hours
  - Subsequent dressings by nursing based on guidelines
    - Typically absorbent dressing (Mepilex Border)
    - Also available
      - SurgiClear (transparent, Ag- and CHG-impregnated)
      - Primapore
      - Open to air
- Published internal Cardiothoracic Surgery Incision Care Guidelines


Best
Available
Evidence
Clinical
Expertise
Patient
Preferences



REFERENCES

Thank you!
Questions?

Dumville, J. C., Gray, T. A., Walter, C. J., Sharp, C. A., Page, T., Macefield, R., Blencowe, N., Milne, T. K. G., Reeves, R. C., & Blazeby, J. (2016). Dressings for prevention of surgical site infection. *Cochrane Database of Systematic Reviews, 12*. doi:10.1002/14651858.CD003091.pub4

Gorlitzer, M., Wagner, F., Pfeiffer, S., Folkmann, S., Meinhart, J., Fischlein, T., & Grabenwoeger, M. (2013). Prevention of sternal wound complications after sternotomy: results of a large prospective randomized multicentre trial. *Interactive Cardiovascular and Thoracic Surgery, 17*. doi:10.1093/icvts/ivt240

Huckfeldt, R., Redmond, C., Mikkelson, D., Finley, P. J., Lowe, C., & Robertson, J. (2008). A clinical trial to investigate the effect of silver nylon dressings on mediastinitis rates in postoperative cardiac sternotomy incisions. *Ostomy Wound Management, 54*(10).

Peart, J. (2016). Can negative pressure wound therapy over closed surgical wounds prevent complications? *Wound UK, 12*(1).

Rashad, A., Csiszar, M., Beledi, A., & Gombocz, K. (2021). The impact of incisional negative pressure wound therapy on the wound healing process after midline sternotomy. *International Wound Journal, 18*(1). doi:10.1111/iwj.13497

Segers, P., deJong, A. P., Spanjaard, L., Ubbink, D. T., & de Mol, B. A. J. (2007). Randomized clinical trial comparing two options for postoperative incisional care to prevent poststernotomy surgical site infections. *Wound Repair & Regeneration, 15*(2).

Sherman, G., Shulman-Manor, O., Dagan, O., Livni, G., Scheuerman, O., Amir, G., Frenkel, G., & Levy, I. (2020). Vacuum-assisted closure for the treatment of deep sternal wound infection after pediatric cardiac surgery. *Pediatric Critical Care Medicine, 21*(2).

Suelo-Calano, R. L., Thomson, R., Read, M., Matheson, E., Isaac, E., Chaudhry, M., & Loubani, M. (2020). The impact of closed incision negative pressure therapy on prevention of median sternotomy infection for high risk cases: a single centre retrospective study. *Journal of Cardiothoracic Surgery, 15*(1).

Tabley, A., Aludaat, C., Le Guillou, V., Gay, A., Nafeh-Bizet, C., Scherrer, V., Bouchart, F., & Doguet, F. A survey od cardiac surgery infections with PICO negative pressure therapy in high-risk patients. *The Annals of Thoracic Surgery, 110*(6).

Tarzia, V., Carrozzini, M., Bortolussi, G., Buratto, E., Bejko, J., Comisso, M., Mescola, V., Penzo, V., Guarino, M., De Franceschi, M., Pagnin, C., Castoro, M., Guglielmi, C., Testolin, L., Bottio, T., & Gerosa, G. (2014). *Interactive Cardiovascular Thoracic Surgery, 19*(1).

Webster, J., Liu, Z., Dumville, J. C., Chiverton, L., Scuffham, P., Stankiewicz, M., & Chaboyer, W. P. (2019). Negative pressure wound therapy for surgical wounds healing by primary closure. *Cochrane Database of Systematic Reviews, 3*. doi:10.1002/14651858.CD009261.pub

CARDIOLOGY 2025

Children's Hospital of Philadelphia
Cardiac Center