Reference ***(include title, author, journal title, year of publication, volume and issue, pages)***	**Evidence level (I-VII)**	**Key findings, outcomes or recommendations**
Ceroni, D., et al. (2016). Prevention of pin-tract infection to treatment of osteomyelitis during paediatric external fixation. Journal of Child Orthopedic. 10, 605-612	V	**Silver dressings have increase in antibiotic resistant pathogens** **Use of a silver dressing reduced microbial contamination of wounds from environmental sources** **These dressings are attractive due to ability to be left in place for up to 7 days**
Lagerquist D,Dabrowski M, Dock C, Fox A, Daymond M, Sandau K, Halm M (2012).Care Of External Fixator Pin Sites. American Journal of Clinical Care. 21 (4), 288 - 292	Level 11	**Various solutions historically on cleaning, but found that chlorhexidine resulted in less pain / antibiotic use than normal saline** **No study compared dressing versus no dressing** **Fewer infections with 1% silver sulphadiazine / 5% chlorhexidine compared with 5% chlorhexidine** **Daily versus weekly made no difference** **Dressing type & frequency can change according to clinical condition** **Recommends multi centre studies to compare outcomes and products in use**
Kazmers, N., Fragomen, A., & Rozburch, R. (2016). Preventions of pin site infection in external fixation: a review of the literature. Strategies Trauma Limb Reconstruction. 11(2), 75-85.	V	**Conclusion that dressings reduce pin tact infection rather (trauma patients) more so than a gauze dressing**

Ogbemudia, A., Bafor, A., Ogbemudia, E., & Edomwonyi, E. (2015). Efficacy of 1 % silver sulphadiazine dressings in preventing infection of external fixation pin-tracks: a randomized study. Strategies Trauma Limb Reconstruction. 10(2), 95-99.	II	**Silver is a very highly effective topical antimicrobial used in burns dressings with capacity to decrease bacterial colonization.** **Dressing results in a slow and sustained release of silver ions, inhibiting growth and multiplication of bacterial cells.** **Penetrates into exudate and necrotic tissue** **Effective against Staphylococcus aureus, Escherichia coli and Pseudomonas aeruginosa and strains of Proteus, Klebsiella and candida albicans.** **In the management of burns it has not be associated with systemic complications** **Study showed that use of silver dressing was efficacious** **Supports other studies that use of a antimicrobial preparation is of value**
Timms A, Pugh H (2012). Pin site care: guidance and key recommendations. *Nursing* Standard. 27, 1, 50	Level V 11	**Prevent cross infection** **Consensus approach provides guidance in absence of strong evidence** **Discusses different cleaning solutions as per others eg saline, chlorhexidine, povidine iodine (not recommended) - suggest chlorhexidine** **Dress with a non-shedding material** **No chlorhex if allergy, eczema, psoriasis - use saline instead** **Frequency recommended at 7 day intervals** **Change dressing earlier if concerned** **Should have compression applied to reduce risk of haematoma and then tenting, excessive movement of skin around site** **Showering - agreement that can be done on day of dressings, but keep fixator dry on other days** **Crusts - leave intact unless infection present, then to be removed** **Highlights need for further research into the area of pin site care** **Highlights development of validated tools to assist in diagnosis and audit of infection**

Timms A, Vincent M, Santy-Tomlinson J, Hertz K (2013). A fresh consensus of pin site care in the UK. I*nternational Journal of Orthopaedic and Trauma Nursing*. 17, 19 - 28	Level V11	**Complete article on Consensus approach** **In absence of skin sensitivity then pin sites should be cleaned weekly using alc chlorhexidine and non shedding dressing (gauze)** **Cover with wound dressing that keeps exudate away from the wound** **Use of compression with a bung, stopper or clip** **Change if becomes saturated** **On day of dressing change - pt may bathe or swim (not immerse)** **Pt to be key member in diagnosis of pinsite infection** **Lack of high quality randomised controlled trials to demonstrate best** **Need for large multi centre trials** **No validated outcome measure for pin site infection** **Frank discharge of pus, increasing pain at the pin / wire site and decreased movement or weight bearing with increasing redness and increased swelling and discharge are indicators of infection** **Further work needed in area of dressings to be used** **Clarification of role of crusts / scabs** **No real consensus as to when to begin dressings**
Walker J (2013). Pin Site Infection in Orthopaedic External Fixation Device. British Journal of Nursing. (21) 3, 148 - 151	Level IV	**Compared pin site infection rates of various authors** **Discussed cleansing with many different solutions** **Reduction in infection rate with Alcoholic chlorhexidine and reduced pain** **Mentions reaction to chlorhexidine** **Discusses the role of crusts and debate as to whether to remove or not** **Use of compression advocated to prevent tenting** **If dressing uses, then should be a non shedding material eg sponge type dressing, non shedding gauze, soaked in alcoholic chlorhexidine due to its antimicrobial properties**