Reference (include title, author, journal title, year of publication, volume and issue, pages)	Evidence level (I-VII)	Key findings, outcomes or recommendations
Perez M, Décaudin B, Abou Chahla W, et al. Effectiveness of in-Line Filters to Completely Remove Particulate Contamination During a Pediatric Multidrug Infusion Protocol. *Scientific Reports*. 2018;8:7714. doi:10.1038/s41598-018-25602-6.	IV	**IV in-line filter significantly reduced overall particulate contamination during 24 hour infusion period compared to no filter (p=<0.0001)**
Perez M, Décaudin B, Maiguy-Foinard A, et al. Dynamic Image Analysis To Evaluate Subvisible Particles During Continuous Drug Infusion In a Neonatal Intensive Care Unit. *Scientific Reports*. 2017;7:9404.	IV	**Despite the absence of visible particles in the IV tubing, the particulate analysis showed that patients might receive hundreds of thousands of particles in only one-day multi-drug infusion**
Thomas, J., Boehne, ., Brent, B. Hoy, L., Koditz, H., Wessel & Sasse M. (2012). In-line filtration reduces severe complications and length of stay on pediatric intensive care unit: a prospective, randomized, controlled trial. Intensive Care Medicine, 38 (1008-1016)	II	**Reduced complication rate (n=166 vs 124 p = 0.003) filter group** **SIRS lower (n=123 vs n=90 p=0.01)** **LOS in PICU lower (95% CI 2.97-4.82 vs 2.98 p=0.025)**
Jack, T et al. (2010) Analysis of particulate contaminations of infusion solutions in a paediatric intensive care unit. Intensive Care Medicine. 36(4) 707-711	IV	**Half of filters showed uncountable number of smaller particles** **May have immune modulating effects**
Ball, P. (2003) Intravenous in-line filters: filtering the evidence. Current Opinion in Clinical Nutrition Metabolic Care, 6 (3) 319-325	I	**Evidence suggests that use of filters is not harmful and likely to be beneficial**

Lehr, H.A. et al. (2002) Particulate matter contamination of intravenous antibiotics aggravates loss of functional capillary density in postischemic striated muscle. Am J Respir Crit Care Med, 165:514-20.	IV	**Particle contaminants may not pose a major threat in intact tissue, but may severely compromise tissue perfusion in patients with prior microvascular compromise of vital organs (i.e., after trauma, major surgery, or sepsis) and thus predispose to complications such as acute respiratory distress syndrome or multiple organ failure.**