Bitesize SBAR Summary: Using glucose 5% vs glucose 10% as an infusion diluent

Although data on glucose 10% as an infusion diluent are limited, in neonatal and paediatric practice it is often used for drugs known to be stable in glucose 5%. NPPG acknowledges this as an established practice with a likely low associated risk. However, caution is still advised, particularly with biologic-based therapies.

Situation	Data are often lacking on the use of glucose 10% as an infusion diluent. In practice, glucose 10% is often used as a diluent if it is known that the drug is stable in glucose 5%. Medusa Injectable Medicines Guide would like to add glucose 10% to the list of infusion diluents as 'agreed practice, NPPG'.
Background	Glucose 10% can be used as part of routine intravenous fluids particularly in neonates, critically ill paediatric patients, and children and young people in the perioperative period. Being able to use it as a diluent may help reduce the risk of hypoglycaemia. Glucose 5% and glucose 10% have a similar pH, but glucose 5% is iso-osmolar whilst glucose 10% is hyper-osmolar.
Assessment	In 2019, a review was undertaken of all the monographs that included glucose 5% as an infusion diluent, with expert advice sought from formulation and Quality Assurance specialists. These results were discussed by the NPPG committee. A further evidence search conducted in 2025 found no additional information on the comparable compatibility of glucose 5% and 10% as infusion diluents.
Recommendation	The NPPG Committee acknowledged that data are lacking on the use of glucose 10% as an infusion diluent. The risk of using 10% glucose when there is stability data with glucose 5% is likely to be extremely low. It has been common practice for some time. However, it may be difficult to predict how drug molecules behave in different glucose solutions, even if the pH is the same. Care should be taken with biological drugs, e.g. peptides, glycopeptides and monoclonal antibodies.

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