If any drug/drug or drug/solvent incompatibilities occur, physical-chemical reactions may occur at the Y-site expressed as clouding, colour variation, emulsion breaking. These reactions can give rise to clinically significant complications such as reduction of bioavailability and therapeutic effect, catheter obstruction, parenchymal deposits. The potential impact, in terms of increase of morbidity/mortality and prolonged hospitalisation, could be important.

Purpose To create a working tool to help health professionals make responsible and evidence-based decisions when administering several medicines to critical patients.

Materials and Methods A systematic search for stability/compatibility information for injectable drugs was performed (Trissel’s, Stabilis, King’s Guide to Parenteral Admixtures, Micromedex database, Martindale, Summary of Product Characteristics).

A literature review of data concerning compatibility for intravenous administration of 119 drugs and 4 diluents commonly used in anaesthesia and intensive care was undertaken.

Results 7488 drug/drug and drug/solvent compatibilities were analysed, showing: 44% compatibility, 12% physical and/or chemical incompatibility, 43.5% limited compatibility (depending on solvent, concentration, contact time, temperature). The data collected conflicted in 1.8% of references.

All data were summarised in a colour-code wall chart, which admits, circumscribes or denies the possibility of simultaneous infusion (green: compatible, red: incompatible, violet: limited data, yellow: conflicting data, white: no information). This working tool was shared with health staff and made available in the ward for a safe and quick search.

Conclusions The use of this visual working tool in ICUs and other units may reduce adverse events due to physical-chemical incompatibility of infused medicines, thus improving care quality and patient safety.

No conflict of interest.