

MiST Standardisation Consensus Summit

February 24th 2017

Chair: Adam Sutherland

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Structure of the morning

- Recap of the project (aims and objectives)
- Results of the on-line survey
- Breakout sessions
 - Sedation
 - Cardiovascular I and II
 - Anaesthesia
- Regroup and summarise
- Next steps

With thanks to our stakeholders and advisors



Expert Advisory Group:
Oliver Rackham, Debbie Webster, Moninne Howlett, Cormach Breatnach,
Mark Hayden, Virginia Aguado, Emma Bull, Mirjana Cvetkovic



Why are we doing this?

- Current infusion practice is inefficient
 - Absorbs up to 1 ICU bed of nursing time per year
- Variation predisposes to error and inaccuracy
 - Complex manipulation and calculation
 - Assumptions of accuracy
- Increasing demand for pre-made infusion products
 - Cost effectiveness drives
 - Resource efficiency (improving time to access)
 - Quality control

Inefficiency

- Infusions take 30-40minutes to prepare
 - Obtaining, calculating, measuring, checking,
- They're wasteful
 - 50% of prepared infusions are thrown away
 - Weight-based infusions mandate waste of stock solution as well (discarding part used ampoules)
- Current ready-prepped infusions are expensive
 - Double the price (Morphine: ~£5 (ready made) to ~£2.50(ward-prepped))
 - Small numbers, bespoke solutions, short shelf lives

Variation

- Complex manipulation and calculations:
 - Wrong at least 50% of the time
 - Can't engineer a process to reduce this (human error of measurement)
 - Undermines pharmacokinetic studies
 - Morphine in neonates
 - Paracetamol in infants
- Stressful and error prone in environments where these activities are not routine
 - Transfers and retrievals

Drivers for change

- Policy
 - NPSA 20 (Safer use of injectable medicines)
 - NRLS Sentinel Alert (Morphine in neonates) 2011
 - Medicines optimisation (NHS England)
 - Carter Report (Reducing unnecessary variation in the NHS)
- Practice
 - Electronic prescribing
 - "Smart pump" technology
 - Withdrawal of on-line dose calculators
 - Increased use of centralised IV additive services

Arriving at the initial consultation standards

1. Scoping survey (June/July 2016) of units across the UK
2. Direct contact with units internationally
 - Canada (Sick Kids, Vancouver)
 - Australia (Queensland)
 - Republic of Ireland

Standard IV infusion concentration in paediatric and neonatal units: A National Survey

Thorunn Oskarsdottir

MSc Pharmacist, MSc Clinical Pharmacist

Study aims

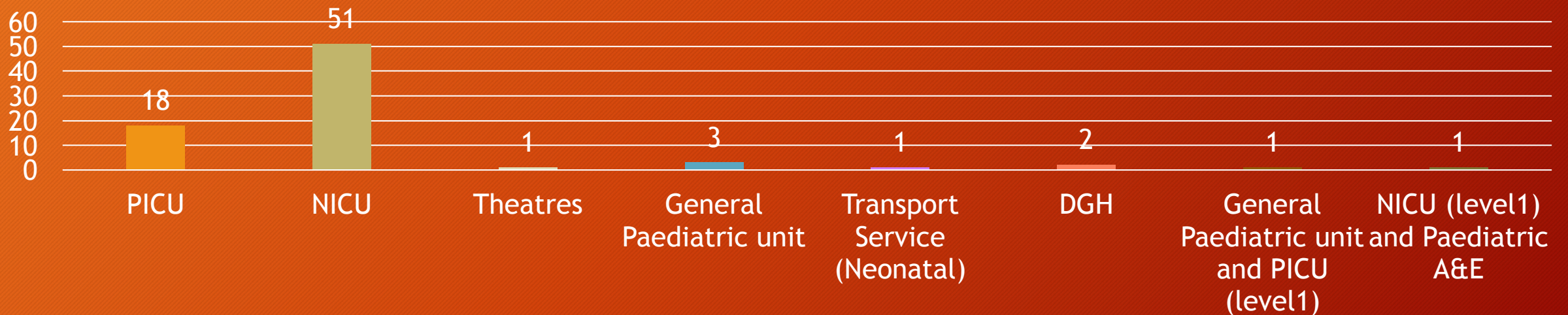
- To explore the practice of standardised concentration usage for continuous IV infusions in paediatric and neonatal units in the UK, specifically:
 - how many units use standardised concentration for IV infusions
 - evaluate the variation and overlap of continuous IV infusion concentrations in practice
 - assess what devices are used to administer these infusions
 - how standardised infusions are provided

Methods

- Service evaluation designed as a quantitative descriptive survey.
- Self-administered questionnaire online.
- Paediatric and neonatal intensive care units in the UK surveyed through pharmacy, nursing and medical networks.
- Data collection - 45 days.

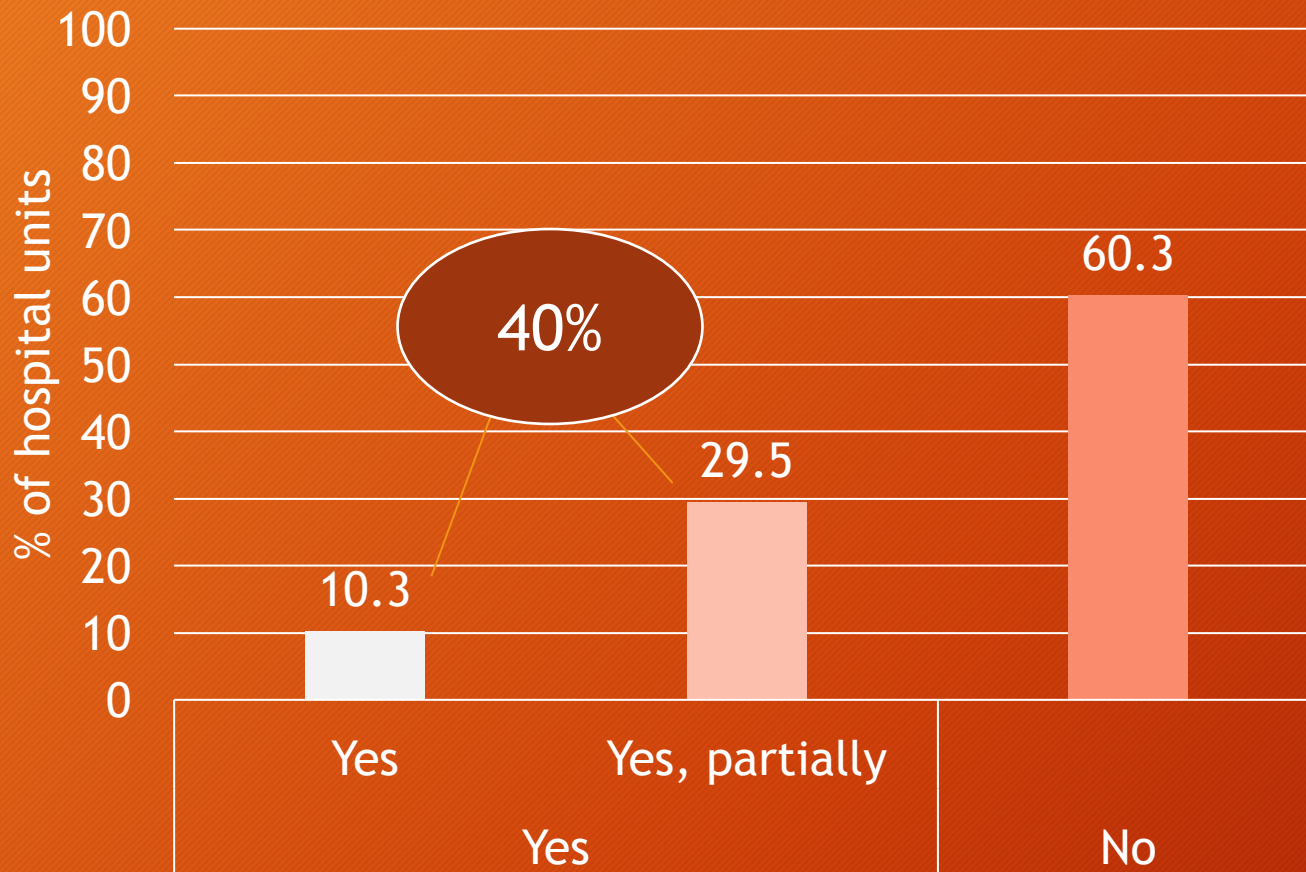
Results

- 33.5% response rate
- Responses received from 78 hospital units (82% from England)



Results

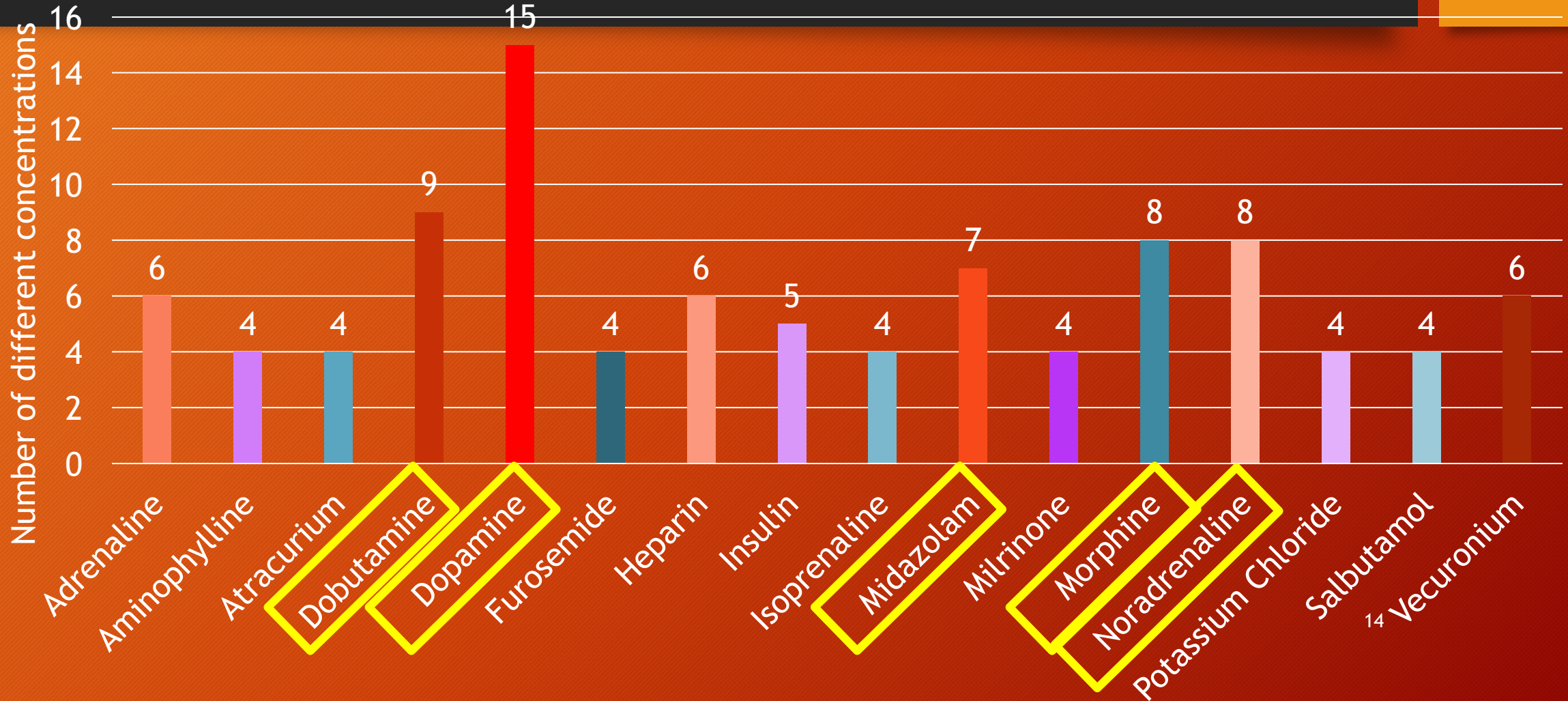
How many hospital units use SC for continuous IV infusions?



- **23** units provided information on presentation of SC infusions.
- **46** medications had standardised concentrations.

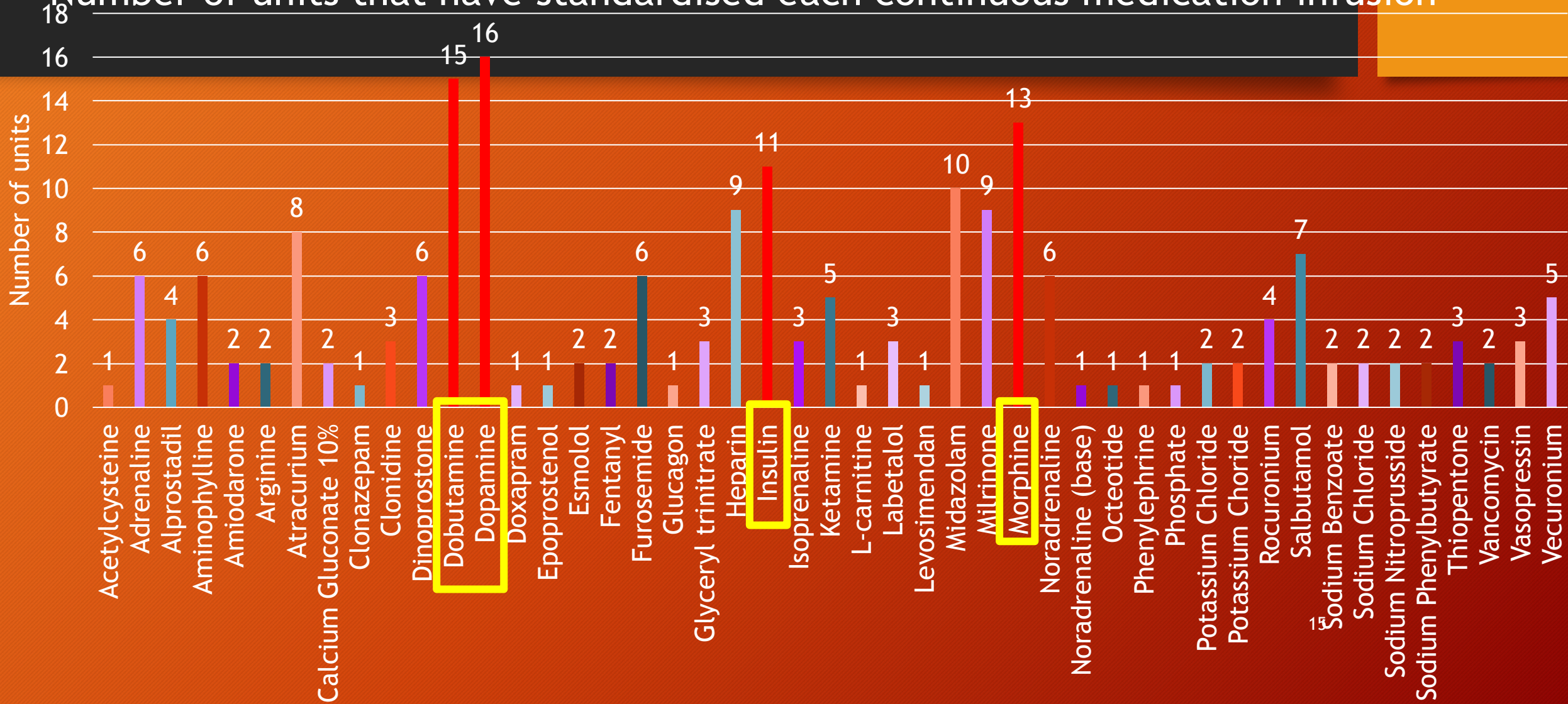
Results

Number of different concentrations for the infusions with the highest variability



Results

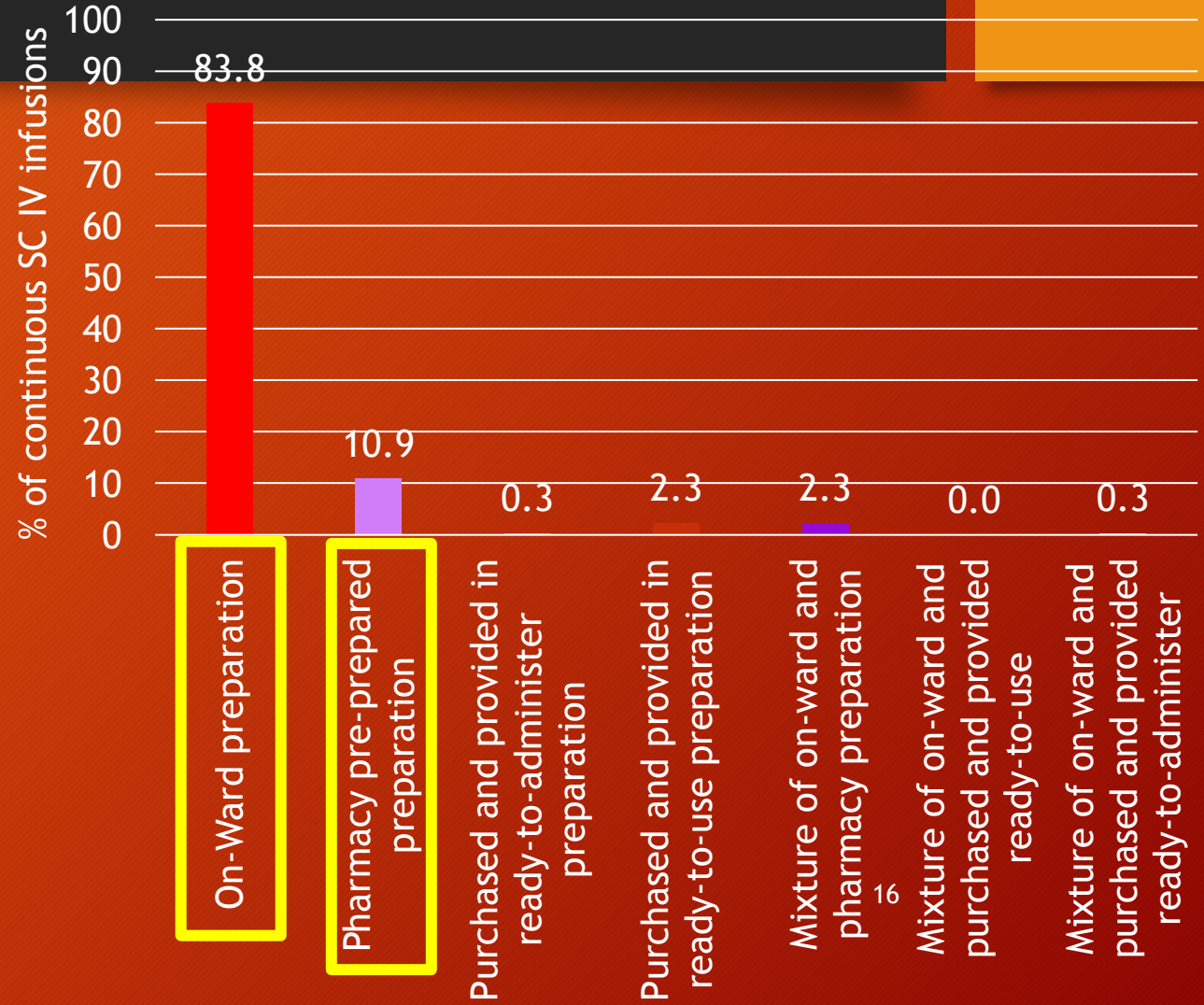
Number of units that have standardised each continuous medication infusion



Results

Administration and accessibility

- 16 units use 'smart' pumps for administration, where the hospital unit has established continuous SC.
 - 3 (9.7%) use other computer software, infusion rate calculation.



Developing the initial framework

- Merging data from the scoping survey and those products standardised elsewhere
 - Most variation between infusions in the scoping were small (e.g. 1.2 to 1.4mg/ml)
 - All units used some form of weight banding
 - Variable
- Solutions were designed to be whole vial measurements
 - Where whole vial wasn't feasible, then whole ml concentrations were chosen
- Consultation with EAG
 - Three iterations before final agreement on Delphi items.