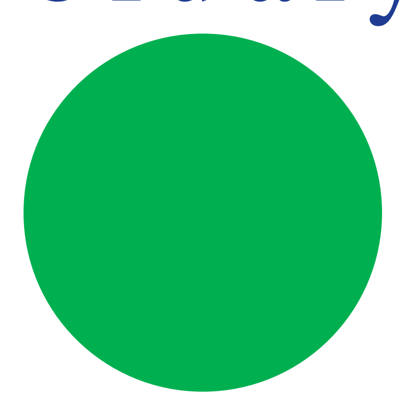
www.imsn.ie

INTERNATIONAL
Medication Safety Network

Neuromuscular Blocking Agents Safety Interest Group

7th February 2024



Geraldine Creaton
Deputy Chair, IMSN

www.imsn.ie

Medication Safety in Irish hospitals

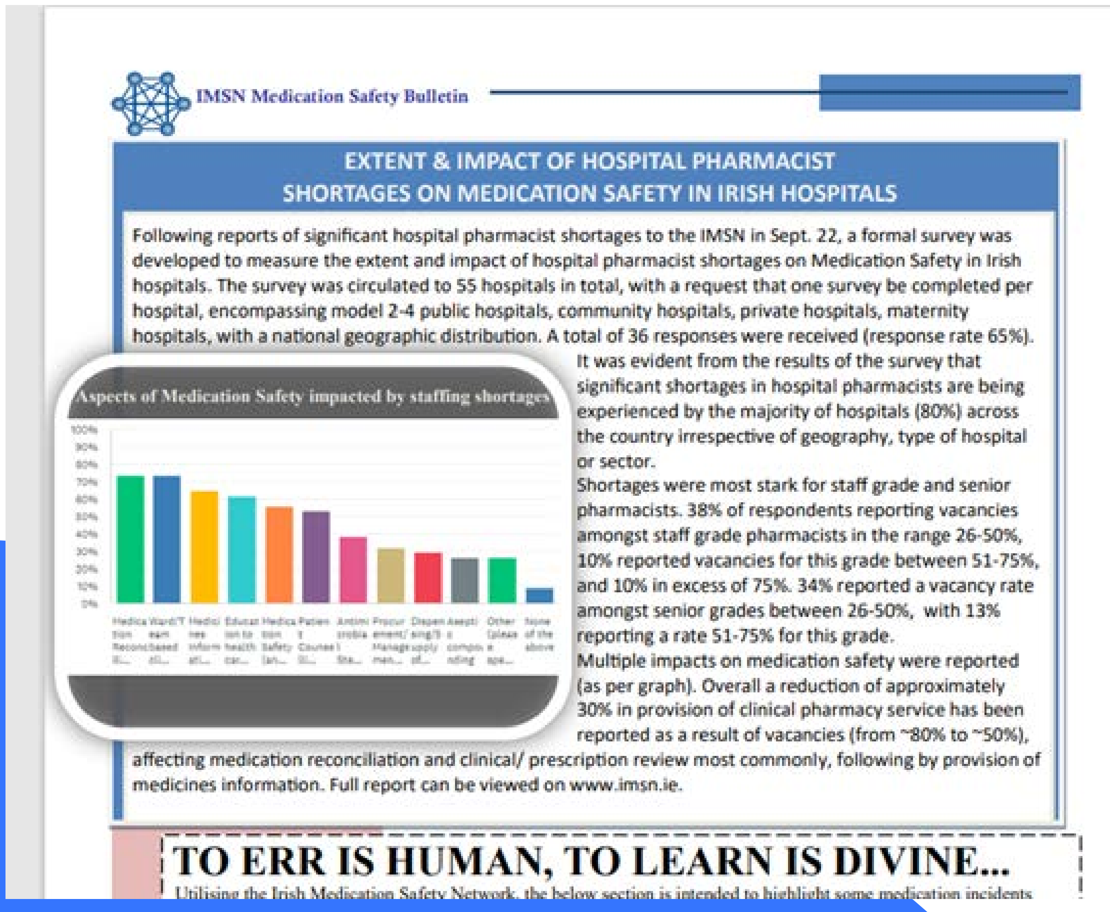
- Private + Public system
- Medication Safety programmes
  - Health Information & Quality Authority (HIQA) monitoring
    - »Public & Private hospitals
  - Health Service Executive (HSE) Safer Meds
    - »Public hospitals
  - Joint Commission International
    - »Private hospitals & 2+ Public hospitals
  -

www.imsn.ie

About us

www.imsn.ie

Activity & Engagement



IMSN Medication Safety Bulletin

EXTENT & IMPACT OF HOSPITAL PHARMACIST SHORTAGES ON MEDICATION SAFETY IN IRISH HOSPITALS

Following reports of significant hospital pharmacist shortages to the IMSN in Sept. 22, a formal survey was developed to measure the extent and impact of hospital pharmacist shortages on Medication Safety in Irish hospitals. The survey was circulated to 55 hospitals in total, with a request that one survey be completed per hospital, encompassing model 2-4 public hospitals, community hospitals, private hospitals, maternity hospitals, with a national geographic distribution. A total of 36 responses were received (response rate 65%). It was evident from the results of the survey that significant shortages in hospital pharmacists are being experienced by the majority of hospitals (80%) across the country irrespective of geography, type of hospital or sector.

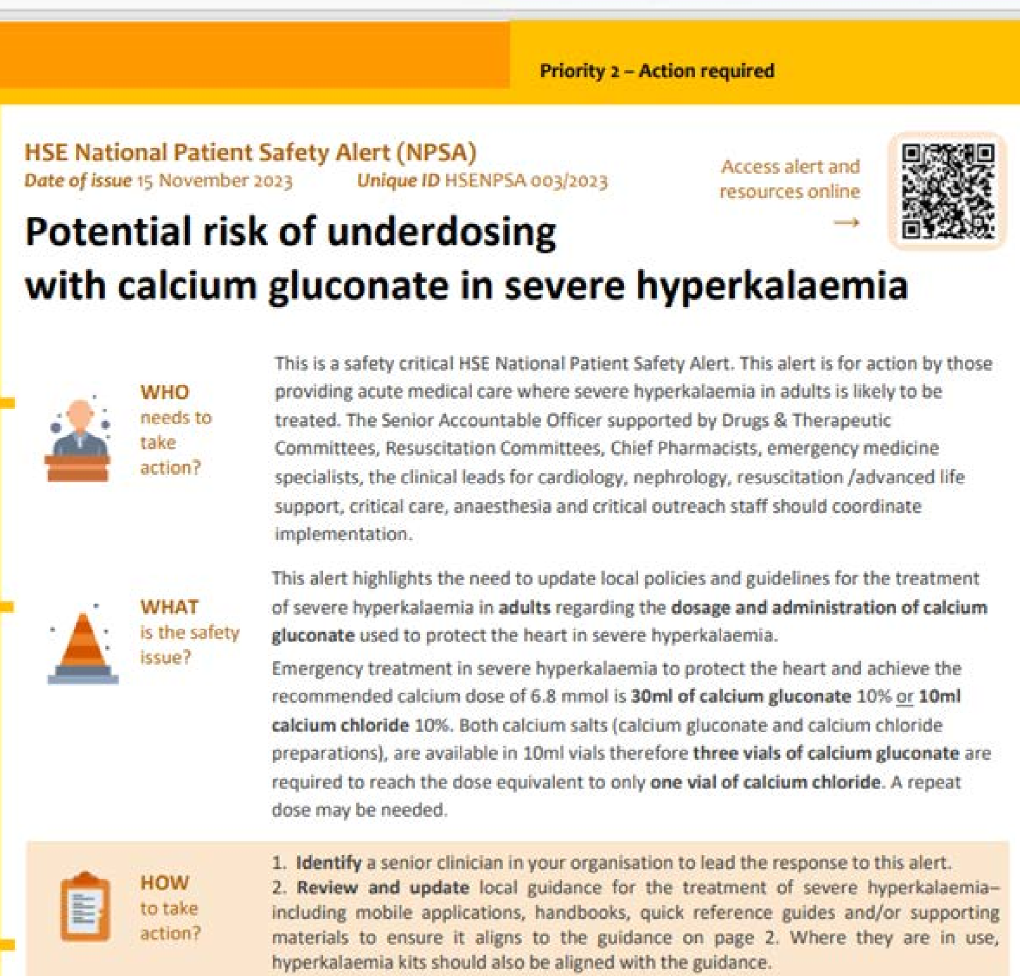
Shortages were most stark for staff grade and senior pharmacists. 38% of respondents reporting vacancies amongst staff grade pharmacists in the range 26-50%, 10% reported vacancies for this grade between 51-75%, and 10% in excess of 75%. 34% reported a vacancy rate amongst senior grades between 26-50%, with 13% reporting a rate 51-75% for this grade.

Multiple impacts on medication safety were reported (as per graph). Overall a reduction of approximately 30% in provision of clinical pharmacy service has been reported as a result of vacancies (from ~80% to ~50%), affecting medication reconciliation and clinical/ prescription review most commonly, following by provision of medicines information. Full report can be viewed on www.imsn.ie.

Aspects of Medication Safety impacted by staffing shortages

TO ERR IS HUMAN, TO LEARN IS DIVINE...

Utilising the Irish Medication Safety Network, the below section is intended to highlight some medication incidents



Priority 2 – Action required

HSE National Patient Safety Alert (NPSA)

Date of issue 15 November 2023 *Unique ID* HSENPSA 003/2023

Access alert and resources online →

Potential risk of underdosing with calcium gluconate in severe hyperkalaemia

WHO needs to take action?

This is a safety critical HSE National Patient Safety Alert. This alert is for action by those providing acute medical care where severe hyperkalaemia in adults is likely to be treated. The Senior Accountable Officer supported by Drugs & Therapeutic Committees, Resuscitation Committees, Chief Pharmacists, emergency medicine specialists, the clinical leads for cardiology, nephrology, resuscitation /advanced life support, critical care, anaesthesia and critical outreach staff should coordinate implementation.

WHAT is the safety issue?

This alert highlights the need to update local policies and guidelines for the treatment of severe hyperkalaemia in **adults** regarding the **dosage and administration of calcium gluconate** used to protect the heart in severe hyperkalaemia.

Emergency treatment in severe hyperkalaemia to protect the heart and achieve the recommended calcium dose of 6.8 mmol is **30ml of calcium gluconate** 10% or **10ml calcium chloride** 10%. Both calcium salts (calcium gluconate and calcium chloride preparations), are available in 10ml vials therefore **three vials of calcium gluconate** are required to reach the dose equivalent to only **one vial of calcium chloride**. A repeat dose may be needed.

HOW to take action?

1. **Identify** a senior clinician in your organisation to lead the response to this alert.
2. **Review and update** local guidance for the treatment of severe hyperkalaemia– including mobile applications, handbooks, quick reference guides and/or supporting materials to ensure it aligns to the guidance on page 2. Where they are in use, hyperkalaemia kits should also be aligned with the guidance.

www.imsn.ie

How are NMBs supplied & labelled by manufacturer in Ireland?

Ampoules (NOT vials) ✓

Prefilled syringe sux. only ✓

Unlicensed where shortage; e.g. UK source; English packaging ✓

Multiple manufacturers for high volume ✓

Mg/ml AND mg/total volume ✓

Additive label included with amps: mivacron® only ✓

Regulator requirements :

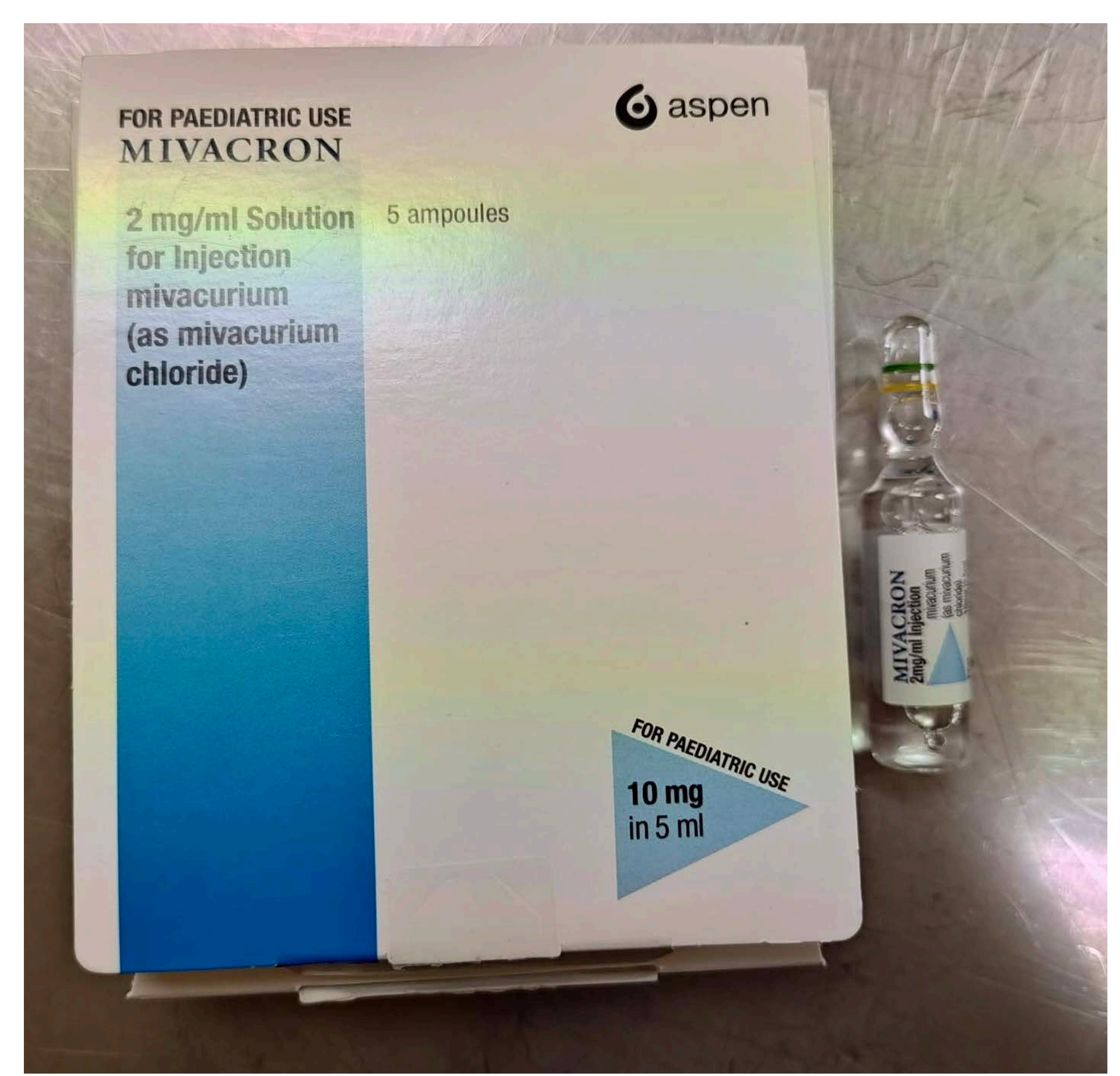
Route; Storage; Excipients; Legal ✓

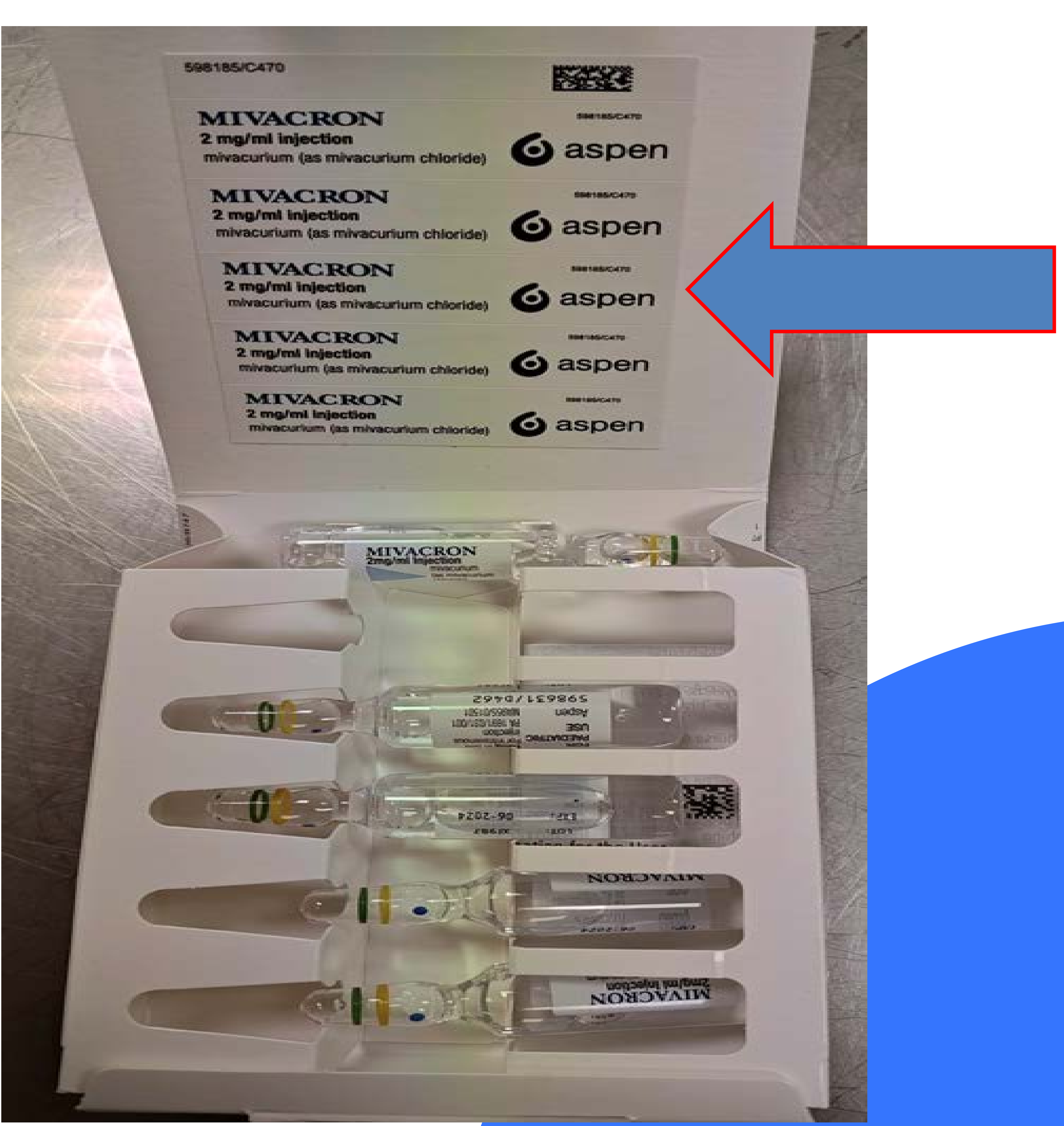
www.imsn.ie

How are NMBs supplied & labelled by manufacturer in Ireland?

www.imsn.ie

How are NMBs supplied & labelled by manufacturer in Ireland?





www.imsn.ie

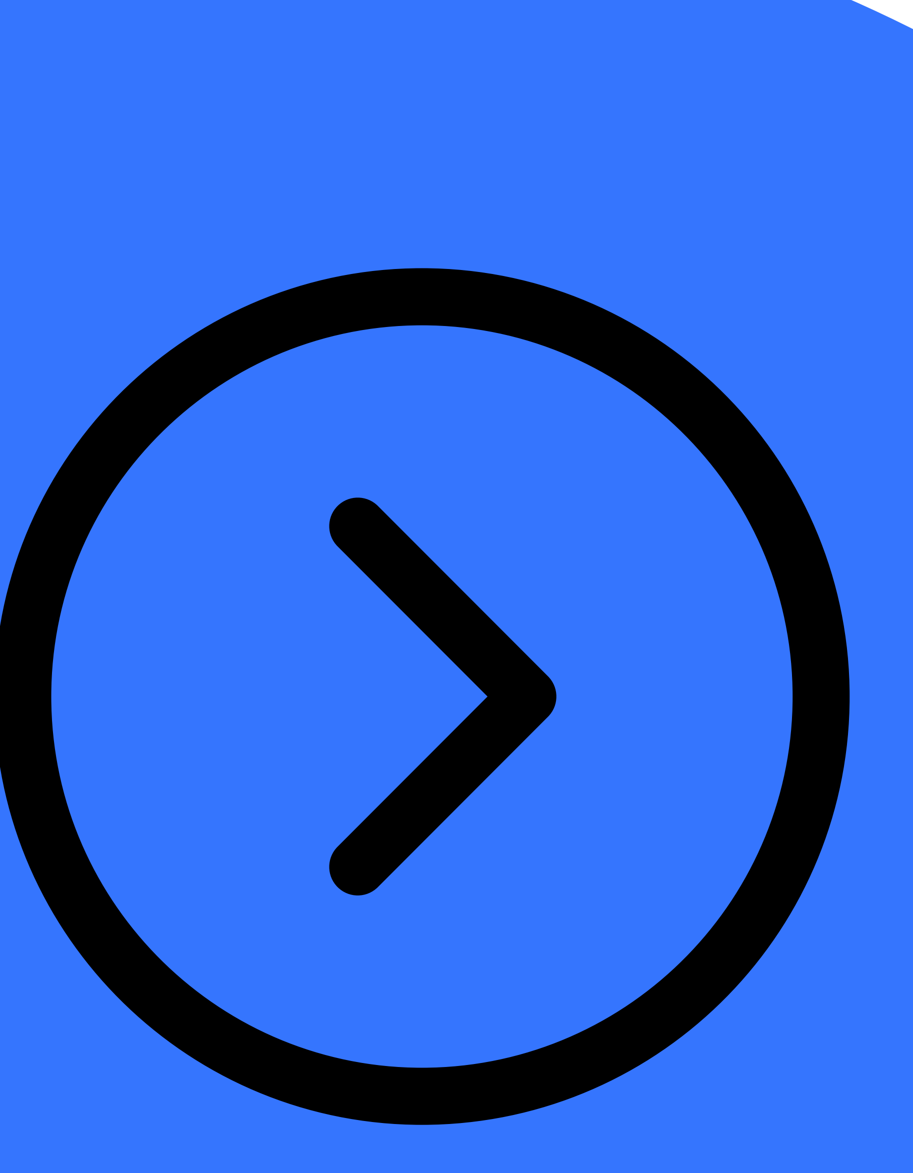
Technology infrastructure in Hospitals in Ireland

- Electronic Pharmacy / dispensing systems
- Limited use of electronic prescribing & Administration/ Electronic Health Record: National Project
- Limited but growing use of ADCs
  - Private hospitals
  - Some public hospitals

www.imsn.ie

Medication incident example:

- low number of incident reports related with NMBs



- Patient to OT for ERPC. Anaesthetic started by NCHD; syringe labelled ‘fentanyl’, which was injected at start of case. Consultant called, tachycardia on ECG, respiratory support given, case stopped, patient recovered. Suspected incorrect drug (NMBA) given in mislabelled syringe.’

www.imsn.ie

Medication incident example:

- Incident in theatre when there was a mix up between a misplaced suxamethonium amp and the intended ondansetron amp. Error reached the patient.
- This was prior to introduction of suxamethonium pre-filled syringes.

w w w .im s n .ie

Strategies to reduce medication error

PHARMACY

- Where available, purchase pre-mixed syringes
- New inventory gets supplementary labelling
  '*Warning: paralysing agent*'
  '*Warning: paralysing agent – causes respiratory arrest*'
- Segregated storage
- Full packs ONLY dispensed.

www.imsn.ie

Strategies to reduce medication error

Non-PHARMACY areas

- Designated hospital locations only e.g. ICU, Day Surgery, Theatre, HDU, ED trauma
- Physical segregation in these areas
  - Separate shelving
  - Separate storage container (orange) to separate from other medication
  - Anaesthetic boxes for emergency use (tamperproof)
- Flag-labelled in theatre once drawn up into syringe
- Immediate availability of antidote (sugammadex)

www.imsn.ie

Strategies to reduce medication error

Non-PHARMACY areas

- TECHNOLOGY
  - Care plans in place on EHR for standardised prescribing of NMBs in a NICU setting
  - Anaesthetists also use standardised process on EHR for prescribing NMBs

Education

- Included on hospital-wide ‘High Alert’ Drugs List – part of Regulator medication safety monitoring programme (HIQA)
- On Irish Medication Safety Network SALAD list - Anexate® / Anectine®
- Taught as ‘High Alert’ medicine on undergraduate & post-graduate education programmes