

ISSUE

Medicine doses may be omitted or delayed in hospital for a variety of reasons¹. The most common incident category reported on the National Incident Management System (NIMS) for the period 2019 to 2022 was 'omitted / delayed dose' accounting for approximately 23% of all medication incidents reported.² There are **time-critical medicines** and **clinical conditions** where **delays or omitted doses can cause serious harm** (including fatal outcomes).³

The *Institute of Safe Medication Practices* (ISMP) defines time critical medicines as medicines where delayed or early administration of more than 30 minutes from the prescribed time for administration may cause harm or result in substantial sub-optimal therapy or pharmacological effect.⁴ An omitted dose is any dose that is not administered before the next dose is due.⁵

EVIDENCE OF HARM

- **Case 1:** Patient was diagnosed with pulmonary embolus. Stat dose of enoxaparin was prescribed but does not appear to have been given. Patient arrested and died.¹
- **Case 2:** A patient was on Tazocin® (piperacillin/tazobactam). A mixed culture showed one isolate resistant to Tazocin®. The patient's antibiotic was changed to Meropenem. The first dose of Meropenem was only given 24 hours later as apparently it was sent to the wrong place. The patient was admitted to the Intensive Care Unit with sepsis.¹

HOW TO REDUCE THE RISKS

- Each hospital should identify a local list of Time Critical Medicines relevant to the services and treatments provided and display this list to inform patients and staff. Table 1 outlines suggested medicines to include in local lists. Think administer to '**PATIENT ASAP**'.
- Each hospital should consider a specific time frame within which time critical medicines must be administered.
- Hospitals should identify patients on Time Critical Medicines as soon as possible on arrival.⁶
- Ensure medicines management procedures include guidance on the importance of prescribing, supplying and administering time critical medicines including what steps to take when a medicine has been omitted or delayed.¹
- Review and, where necessary, make changes to the supply processes for time critical medicines within and out-of-hours to minimise risk.¹

TABLE 1. SUGGESTED DRUGS TO INCLUDE IN LOCAL TIME CRITICAL MEDICINES LIST

Drug Name / Class	Potential Consequence of Omitted / Delayed Dose
Parkinson's Disease/ Movement Disorders medication	Loss of movement control (See <i>IMSN Parkinson's disease series 2024</i>) ^{7,8}
Anticoagulants e.g. enoxaparin, warfarin, rivaroxaban, apixaban, dabigatran, edoxaban	Thrombus formation and serious embolism (PE/stroke)
Transplant/ Immunosuppressants	Disease flare or transplant rejection
Insulins	Poor glycaemic control, symptomatic hyperglycaemia, diabetic ketoacidosis
Epilepsy Medicines	Loss of seizure control
Narcotics (Opioids)	Loss of pain control
Treatment with steroids	Treatment failure; acute adrenal insufficiency if abrupt withdrawal after prolonged usage
Antimicrobial	Potential worsening of systemic infection and deterioration of condition
STAT dose (prescribed for immediate administration)	
Antidotes	Failure to reverse toxicity resulting in patient harm
Psychotropics e.g. clozapine	Missed doses or delayed doses may lead to the need for re titration resulting in worsening of the mental state and prolonged hospital stays.

References:

- 1 National patient safety agency. Rapid Response Report NPSA/2010/RRR009: Reducing harm from omitted and delayed medicines in hospital.2010. Available at: <https://webarchive.nationalarchives.gov.uk/ukgwa/20171030124648/http://www.nrls.npsa.nhs.uk/resources/type/alerts/?entryid45=66720>. (accessed 20th November 2024).
- 2 State Claims Agency. Medication Incidents reported on NIMS, the National Incident Management System, 2019-2022. Available at: <https://stateclaims.ie/uploads/inner/Infographic-Medication-Incidents.pdf> (accessed 13th November 2024).
- 3 Advanced Pharmacy Australia. MI Q&A. Volume 2 Issue 1 March 2020. Which Medicines are 'Time Critical'? Available at: https://scanner.topsec.com/?d=2120&r=show&u=https%3A%2F%2Fonlinecpd.adpha.au%2Fpluginfile.php%2F34951%2Fmod_resource%2Fcontent%2F2%2F2020_1%2520Time%2520critical%2520meds.pdf&t=e3fc80933f29bc38245725805b4275a8f27b1c97 (accessed 14th March 2025).
- 4 Institute for Safe Medication Practices (ISMP). ISMP Acute Care Guidelines for Timely Administration of Scheduled Medications. 2011. Available at: <https://home.ecri.org/blogs/ismp-resources/guidelines-for-timely-administration-of-scheduled-medications-acute> (accessed 13th November 2024).
- 5 Health and Social Care Northern Ireland. Regional list of Time Critical Medicines. 2022. Available at: https://online.hscni.net/wpfd_file/regional-list-of-time-critical-medicines/ (accessed 13th November 2024).
- 6 Parkinson's UK. Time critical medication: Ten recommendations for your hospital. 2025 Available at: <https://www.parkinsons.org.uk/professionals/resources/time-critical-medication-10-recommendations-your-hospital> (accessed 17th June 2025).
- 7 Irish Medication Safety Network (IMSN). IMSN Safety Alert: Reducing harm from omitted and delayed Parkinson's Disease medication (Alert 1 in a series). 2024. Available at: <https://imsn.ie/parkinsons-disease-reducing-harm-from-omitted-and-delayed-medications-safety-alert/> (accessed 13th November 2024).
- 8 Royal College of Emergency Medicine (RCEM). RCEM Advisory Statement Time Critical Medication Self- Administration in Emergency Departments. 2025. Available at: https://rcem.ac.uk/wp-content/uploads/2025/03/FINAL_RCEM_TCM_Patient_Self-Administration_Advisory_Statement.pdf (accessed 17/06/2025).