



**QUEEN'S
UNIVERSITY
BELFAST**

Safeguarding patients through good numeracy skills

Rogers, K. (2017). Safeguarding patients through good numeracy skills. *Journal of Perioperative Practice*, 27(1-2), 3. <http://www.ingentaconnect.com/content/afpp/jpp/2017/00000027/f0020001>

Published in:

Journal of Perioperative Practice

Document Version:

Publisher's PDF, also known as Version of record

Queen's University Belfast - Research Portal:

[Link to publication record in Queen's University Belfast Research Portal](#)

Publisher rights

© 2015 The Association for Perioperative Practice
All legal and moral rights reserved.

General rights

Copyright for the publications made accessible via the Queen's University Belfast Research Portal is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

The Research Portal is Queen's institutional repository that provides access to Queen's research output. Every effort has been made to ensure that content in the Research Portal does not infringe any person's rights, or applicable UK laws. If you discover content in the Research Portal that you believe breaches copyright or violates any law, please contact openaccess@qub.ac.uk.

Safeguarding patients through good numeracy skills

All healthcare professionals encounter numbers in a wide variety of situations during their practice.

Nurses, Operating Department Practitioners (ODPs) and all healthcare professionals, need to be confident in their ability to work with numbers, to ensure patient safety at all times and particularly when administering medicines – indeed numerical competence is a fundamental component for registration with the respective professional bodies.

It is the responsibility of all NMC Approved Educational Institutions (AEIs) to ensure that students undertaking healthcare courses have sufficient literacy and numeracy skills to complete the required academic and practical components of their chosen course (McCollum & Rogers 2013). Periodically, the NMC will revise and update their published standards for safe practice in the management and administration of medicines by registered nurses, midwives and specialist community public health nurses; therefore it is essential that all students and registered practitioners are aware of the current standards, as failure to comply with the standards can affect patient safety and wellbeing, and risk a practitioner's professional registration (or a student's future registration). All drug calculations performed by nursing students must be fully checked by a registered nurse prior to administration.

Time and again the media report on and publicise tragedies and near-misses that are attributed to "drug errors" when, in many situations, such drug errors are specifically due to human error. The majority of medication errors can usually be attributed one of three types of human error:

(1) the wrong medication being administered,

(2) missed or delayed administration of medication, or (3) administration of the wrong dose of drug – which is most frequently due to calculation error (Rogers & Hutton 2017), and is often attributed to inadequate numeracy skills to accurately calculate a drug dose. The repercussions of such professional failures can have catastrophic consequences for patient safety and wellbeing.

Some calculations in healthcare are complex and require the practitioner to perform detailed and systematic numerical operations – generally, the more steps required in a calculation increases the potential risk of error. It is important that professionals working in areas requiring complex calculations are confident and regularly practice their skills for completing such calculations. In addition to practicing your calculation skills, it is always recommended that when performing calculations (particularly when working on complex calculations) that healthcare practitioners try to focus on the task of the drug calculation, ignore distractions, and check through your own working-out when finished. Full attention and concentration for all aspects of the medicine's calculation and administration should help to reduce the potential risk of errors. Furthermore, the NMC recommends that all complex calculations are "double-checked" (or second-checked). This involves each registered nurse, or ODP, independently working through the calculation and then comparing their answers together. Once the calculation answer has been cross-checked and agreed, it is important to consider the value in the clinical context, this

means you should ask yourself the question: based on your clinical knowledge does this answer make sense (Rogers & Hutton 2017)?

In this issue, the Open Learning Zone offers some insight into the calculations required to determine infusion rates. Recommendations in the article reiterate the importance of practicing general calculation skills, as well as working with examples that are relevant to your specific area of practice.

We are all familiar with the concept of "practice makes perfect" and it applies to numeracy skills just as easily as it applies to learning an instrument or a language. All healthcare professionals, irrespective of their area of expertise, should regularly practice their general calculation skills as well as any specialised calculations that are specific to their area of practice. Through regular relevant practice, self-checking and double-checking with colleagues, all healthcare professionals can help to reduce the likelihood of drug errors occurring in their practice and maintain the safety and wellbeing of patients in their care at all times.

Dr Katherine MA Rogers

Lecturer, School of Nursing and Midwifery, The Queen's University of Belfast

References

- McCollum P, Rogers KMA 2013 Practice Makes Perfect *Nursing Standard* 27 (24) 72
- Rogers KMA, Hutton M 2017 (forthcoming) *Calculation Skills SmartBook for Nurses & Healthcare Professions* London, McGraw-Hill Education

Editor

Karen McCutcheon, Discipline Lead for Practice, Senior Lecturer Education, School of Nursing and Midwifery, Queen's University Belfast

Review Panel

Hannah Abbott, Associate Professor and Head of School, Faculty of Health, Education and Life Sciences, Birmingham City University

Jenny Abraham, Advanced Perioperative Specialist Practitioner, University Hospitals Coventry and Warwickshire NHS Trust

Nerys Bolton, Pathway Director, Pre-Registration Adult Nursing, Canterbury Christ Church University

Victoria Cadman, Lecturer in Operating Department Practice, Sheffield Hallam University

Sonya Clarke, Senior Lecturer (Education), Professional Lead for Children's Nursing, Pathway Leader for Orthopaedic/Trauma Nursing, School of Nursing and Midwifery, Queen's University Belfast

Angela Cobbold, Senior Lecturer, Allied Health & Medicine, Faculty of Health, Social Care & Education, Anglia Ruskin University

Linda Cooper, Decontamination Services Manager, Belfast Health and Social Care Trust

Ann Cousley, Anaesthetic Nurse Specialist, Causeway Hospital, Coleraine and Practice Education Facilitator Northern Health and Social Care Trust

Felicia Cox, Senior Nurse, Pain Management, Royal Brompton & Harefield NHS Foundation Trust

Marie Digner, Matron/Clinical Lead, Outpatients, Royal Bolton Hospital

Luke Ewart, Senior Lecturer/Pathway Director Pre-reg ODP, Canterbury Christ Church University

Mona Guckian Fisher, Independent Healthcare Consultant

Dr Theofanis Fotis, Senior Lecturer School of Nursing & Midwifery, University of Brighton

Eleanor Freeman, Theatre Sister and Education Lead Scrub, Theatres, Queen Elizabeth Hospital, Gateshead

Lois Hamlin, Former Senior Lecturer, Director, Postgraduate Programs, University of Technology, Sydney, Australia

Leontia Hoy, Course Director, BSc Hons/Graduate Diploma/Post Graduate Diploma Specialist Practice, School of Nursing, Queens University Belfast,

Adrian Jones, Orthopaedic Surgical Care Practitioner, Trauma & Orthopaedic Department, Norfolk & Norwich University NHS Trust

Helen Lowes, Senior Lecturer, Business Development Lead for ODP, Simulation Lead for the Department of AHP, Faculty of Health and Wellbeing, Sheffield Hallam University

Moyra Journeaux, Senior Lecturer, Nursing and Midwifery Higher Education Department, in partnership with the University of Chester, Health and Social Services, Jersey

Laurence Leonard, Lecturer (Infections and Infection Control), School of Nursing and Midwifery, Queen's University Belfast

Sue Lord, Team Leader, General, Vascular and Laparoscopic, Princess Alexandra Hospital NHS Trust

Andy Mardell, Former Practice Educator, Main Theatres, University Hospital of Wales, Cardiff

Daphne Martin, Lecturer (Education), Pathway Leader Specialist Practice in Anaesthetic Nursing, School of Nursing and Midwifery, Queen's University Belfast

Shirley Martin, Surgical Care Practitioner and Robotics Specialist Nurse, St Mary's NHS Trust

Mr Greg McConaghie, Clinical Fellow in Orthopaedics, Queen's Medical Centre, Nottingham

Amanda Parker, Director of Nursing, Western Sussex Hospitals NHS Foundation Trust

Eloise Pearson, Lecturer, School of Nursing & Midwifery, University of Dundee

Susan Pirie, Lead Nurse for Practice Development, East Surrey Hospital, Redhill

Julie Quick, Senior Lecturer, Operating Department Practice, Birmingham City University and Surgical Care Practitioner, Walsall Healthcare NHS Trust

Paul Rawling, Senior Lecturer, ODP Education, Edge Hill University, Ormskirk

Brian Smith, HE Consultant, HEA National Teaching Fellow, Registered ODP

Dr Susan Tame, Lecturer, University of Hull

Dr Linda Walker, Divisional Nurse Surgery, Cardiff and Vale University Local Health Board

Dr Stephen T Webb, Consultant in Intensive Care & Anaesthesia, Papworth Hospital NHS Foundation Trust

Mr Jonathan JE White, Registrar in Trauma & Orthopaedics, East Midlands North Deanery



Disclaimer *The views expressed in articles published by the Association for Perioperative Practice are those of the writers and do not necessarily reflect the policy, opinions or beliefs of AfPP.*

Manuscripts submitted to the editor for consideration must be the original work of the author(s).

© 2015 The Association for Perioperative Practice
All legal and moral rights reserved.

The Association for Perioperative Practice

Daisy Ayriss House
42 Freemans Way
Harrogate
HG3 1DH
United Kingdom

Email: hq@afpp.org.uk
Telephone: 01423 881300
Fax: 01423 880997
www.afpp.org.uk