

2023-2024



# Annual Report

# Contents

- 03 Introduction**
- 04 Abbreviations**
- 05 The CMSSQ**
- 06 Our team**
- 08 Research themes**
- 09 Grants awarded**
- 11 Research students**
- 12 Research highlights**
- 14 Publication and peer review**
- 14 Education and training**
- 15 Patient and public involvement**
- 15 Collaboration with other organisations**
- 16 CMSSQ outputs**
- 17 Reflections and considerations for the future**
- 18 Publications**

# Introduction

This time of year is always a pleasure for me – partly due to the arrival of spring, but also due to the opportunity to look back and reflect on the previous financial year as part of the annual reporting cycle. With that in mind, it is my pleasure to introduce the latest annual report for the Centre for Medication Safety and Service Quality (CMSSQ) at Imperial College Healthcare NHS Trust. This summarises our work for the period 1st April 2023 to 31st March 2024.

At the CMSSQ, we aim to deliver high quality research relating to medication safety that is:

- **Innovative** – providing new contributions to knowledge;
- **Translational** – applying our research findings to the context of service delivery within the NHS;
- **Relevant** to patient care in today's NHS – focusing on medication safety, use of technology, anti-infectives, and the involvement of patients, carers and families in their care.

Highlights from the past year include:

- We were one of the key partners in a successful application for funding to lead a network of the six NIHR-funded Patient Safety Research Collaborations ("**SafetyNet**") which will run until the end of March 2028.
- We published **20 peer-reviewed research papers**, 5 other publications, and presented 23 conference abstracts, bringing our cumulative research output to 335 peer-reviewed research papers since our inception.
- **Two new grants** were awarded. Seven funded grants and fellowships reported in previous years are ongoing.
- On a personal level, I was delighted to take over the role of **Director of the NIHR North West London Patient Safety Research Collaboration**, providing opportunities to work with inspiring public partners and expert colleagues at Imperial College and elsewhere.

We would love to hear comments and feedback on our work – please do get in touch.



Professor Bryony Dean Franklin, Director

[bryony.franklin@nhs.net](mailto:bryony.franklin@nhs.net) / [bryony.deanfranklin@ucl.ac.uk](mailto:bryony.deanfranklin@ucl.ac.uk)

May 2024

# Abbreviations

<b>BMJ</b>	<b>British Medical Journal</b>
<b>CDRF</b>	<b>Clinical Doctoral Research Fellowship</b>
<b>CMSSQ</b>	<b>Centre for Medication Safety and Service Quality</b>
<b>HEE</b>	<b>Health Education England</b>
<b>HPRU</b>	<b>Health Protection Research Unit in Healthcare Associated Infections and Antimicrobial Resistance at Imperial College London</b>
<b>ICHT</b>	<b>Imperial College Healthcare NHS Trust</b>
<b>NIHR</b>	<b>National Institute for Health Research</b>
<b>NMAHPPs</b>	<b>Nurses, Midwives, Allied Health Professionals, Healthcare Scientists, Pharmacy Staff and Psychologists</b>
<b>NWL</b>	<b>North West London</b>
<b>PSRC</b>	<b>Patient Safety Research Collaboration</b>
<b>PPI</b>	<b>Patient and Public Involvement</b>
<b>PPIE</b>	<b>Patient and Public Involvement and Engagement</b>
<b>UCL</b>	<b>University College London</b>
<b>UKCPA</b>	<b>UK Clinical Pharmacy Association</b>

The Centre for Medication Safety and Service Quality (CMSSQ) was set up in June 2000 as a joint initiative between the Pharmacy Department at Imperial College Healthcare NHS Trust (ICHT) and University College London (UCL) School of Pharmacy. At UCL School of Pharmacy, we are linked to the Research Department of Practice and Policy and more specifically, the research cluster for pharmacoepidemiology and medication safety.

We are a partner organisation within the National Institute for Health and Care North West London Research Imperial Patient Safety Research Collaboration (NIHR NWL PSRC) and the NIHR Health Protection Research Unit (HPRU) in Healthcare Associated Infection and Antimicrobial Resistance at Imperial College. We work closely with other research groups within ICHT, UCL and Imperial College London. For example, we are part of the Healthcare Professional Academic Group at Imperial College, which seeks to grow the number of clinical academic leaders in nursing, midwifery, pharmacy, healthcare science and the allied health professions. We see ourselves as “embedded researchers” within the healthcare setting providing a unique privilege in linking research and practice.

## Our Strategic Objectives



# Our team



**Professor Bryony Dean Franklin** is Director of the CMSSQ, Executive Lead Pharmacist for Research at ICHT, Professor of Medication Safety at UCL School of Pharmacy, and a Visiting Professor within Imperial College London Department of Medicine. Professor Franklin has been involved with medication safety research for 30 years, and has published widely on methods for studying errors, and their frequency and causes. Her clinical background includes being a critical care and antimicrobial specialist pharmacist. She teaches on a variety of undergraduate and postgraduate courses at UCL, as well as leading research in patient safety. She is Co-Editor-in-Chief of the journal *BMJ Quality and Safety*.



**Calandra Feather** is the Implementation Lead and Clinical Safety Officer at Dosium, an Imperial Innovations spin out company that has developed and evaluated Touchdose, an indication-based, patient-specific prescribing tool. Calandra maintains an honorary health services researcher role in the CMSSQ and honorary clinical research fellow at Imperial College, whilst she writes up her PhD work that utilised mixed methods to evaluate prescribing practice, indication documentation, and the use of Touchdose. Dosium in partnership with ICHT have recently been awarded an NHS England Digital Medicines First-of-Type award to go-live with Touchdose at West London Children's Healthcare (WLCH) in spring 2024. Calandra is working with WLCH to conduct a service evaluation with safety, performance and process outcome



**Shahd Abdelaziz** is an early career research pharmacist and research assistant at the CMSSQ. Combining her background as a clinical pharmacist, passion for research, and interest and current work in patient safety, she is currently undertaking the MSc in Patient Safety at Imperial College. She is currently working on the MANADR and BCMAPS studies and supports the ICHNT pharmacy department with engaging pharmacy staff in research opportunities.

# Our team



**Zoe van Zuylen** is a Women's Health Pharmacist who completed a secondment at the CMSSQ, leading a project exploring medication delivery to inpatient wards. She is currently wrapping up the project report and working on reporting some of the outcomes. She is interested in medication use in pregnancy, particularly around adherence to postnatal venous thromboembolism. She is the Education Lead on the UKCPA Women's Health Committee and has produced educational content for the Royal Pharmaceutical Society.



**Dr Adrian Hire** is a research pharmacist who joined the CMSSQ in 2022 until October 2023, as lead for medication safety research. He had previous experience of working in hospital and community settings, and obtained a PhD from the University of Manchester in 2017. During his time in the CMSSQ, Adrian was involved in a project evaluating a prescribing tool for newly-qualified medical staff (the 'Dr-Card'), and a systematic review examining inequalities and inappropriate prescribing.

Two consultant pharmacists are employed at ICHT: a consultant pharmacist for infectious diseases (**Mark Gilchrist**), and a consultant pharmacist for anticoagulation (**Frances Akor**). A key part of their role is to conduct research into their relevant areas of clinical practice; the CMSSQ is able to support this as needed.

Other research-active pharmacy staff affiliated with the CMSSQ include, among others, pharmacists **Richard Wilson, Daniel Murphy, Poonam Lumb, Neil Tickner and Simone Brackenborough**. The number of research-active ICHT pharmacy staff demonstrates our culture of innovation, research and development as part of professional practice. Our students are listed separately on page 11.

The CMSSQ research team, together with current students, hold a fortnightly online journal club where recent publications relating to patient safety and health services research are discussed, together with peer review of each other's current work. Other members of ICHT and UCL School of Pharmacy staff are very welcome to attend.

# Research themes

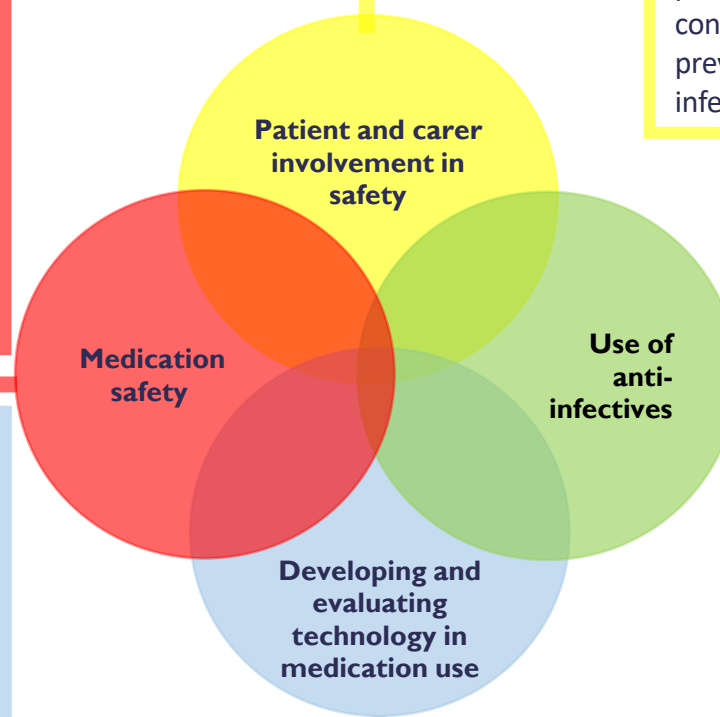
The CMSSQ has a significant research output, with a focus on medication safety. Our research is therefore closely aligned with the strategic direction of the Research Department of Practice and Policy at UCL School of Pharmacy, the NIHR North West London PSRC, and with national and international research agendas. Our research falls into four overlapping research areas:

In 2017, The World Health Organization identified 'Medication Without Harm' as the theme for its third Global Patient Safety Challenge, and highlighted that everyone, including patients and healthcare professionals, have a role to play in ensuring medication safety. Three key action areas were identified: polypharmacy, high-risk situations and transitions of care; work from the CMSSQ team has been cited in the technical reports produced for each of these.

This includes non-adherence to medication, which may be both the response to, and cause of, errors and other types of medication-related harm. Many patients and carers are also willing and able to contribute to their own safety in relation to preventing errors and healthcare associated infections; our work contributes to this field.

There is ongoing interest in the potential impact of technologies such as electronic prescribing, barcoding, automation, decision support systems, and the use of multiplatform (smartphone/tablet/computer) apps, together with increasing recognition that unintended consequences, and new types of error can also occur. Such technologies also affect how health care professionals work and may increase or decrease efficiency. A significant proportion of our research relates to this area.

ICHT has long been recognised as a leader in this field, in particular with respect to the role of pharmacists and multi-disciplinary teams in improving anti-infective use. Our partnership with the NIHR Health Protection Research Unit (HPRU) in Healthcare Associated Infections and Antimicrobial Resistance at Imperial College London, continues to provide opportunities for collaboration in addressing healthcare associated infections and antimicrobial resistance as patient safety issues.





# Grants awarded

Members of the CMSSQ were listed on two new grants awarded this year (Table 1). Five other funded grants and two fellowships reported in previous years are ongoing or finished in the last year (Table 2). Four further grant applications were submitted during the past year but were unsuccessful. Two further grant and fellowship applications have been submitted with the outcome awaited.

CMSSQ investigator	Project title	Funder	Date of award	Start date	End date
Bryony Dean Franklin and Calandra Feather (Co-applicants)	Dosium	NHS England	September 2023	September 2023	March 2024
Bryony Dean Franklin (Co-applicant)	NIHR SafetyNet	NIHR	October 2023	October 2023	March 2028

*Table 1: New grants obtained during the past year.*

CMSSQ investigators	Project title	Funder	Date of award	Start date	End date
Bryony Dean Franklin (Theme lead)	HPRU in Healthcare Associated Infections and Antimicrobial Resistance	NIHR	November 2019	April 2020	March 2025
Bryony Dean Franklin (Co-applicant)	Getting prescription medications right at home, in hospital & hospice: An Activity Theory analysis to improve patient safety and confidence in palliative care	Marie Curie	January 2020	April 2021	March 2024
Bryony Dean Franklin (Director)	NIHR North West London Patient Safety Research Collaboration	NIHR	December 2022	April 2023	March 2028
Bryony Dean Franklin (Co-applicant)	Developing a predictive real-time warning system for avoiding patients and healthcare staff harm after medication safety incidents	Academy of Finland	April 2022	April 2022	March 2027
Bryony Dean Franklin (Co-applicant)	NIHR Incubator for the Pharmacy Profession	NIHR	March 2023	TBC	March 2026
Daniel Murphy (Bryony Dean Franklin as supervisor)	Funding to undertake MSc in Genomic Medicine	HEE	August 2021	September 2021	August 2023
Angela Burgin (Bryony Dean Franklin as clinical advisor)	The EIPresMO Study –Electronic Prescribing and Medicines Optimisation in the hospital setting: What helps and hinders patient conversation?	NIHR CDRF	June 2021	September 2022	August 2025

*Table 2: Ongoing grants and fellowships that remained active during the past year.*

## MPhil, PhD and postgraduate fellowship students

We have five MPhil / PhD students within the Centre at present, some full time and some part time, conducting a range of studies focused on different aspects of medication safety and technology evaluation (Table 3).

Student	CMSSQ supervisor(s)	Project title and University	Dates
<i>In progress</i>			
Pollyanna Kellett	Bryony Dean Franklin (second supervisor)	Resilience in nurses' use of medication administration technologies (working title) (PhD; University of Leeds)	Started March 2017. Part time. Ongoing
Calandra Feather	Bryony Dean Franklin (second supervisor)	The impact of patient-specific decision support within electronic prescribing systems (PhD; Imperial College)	Started 2019. Full time. Ongoing
Nouf Alaboud	Bryony Dean Franklin (second supervisor)	The impact of electronic prescribing system factors and data integration on medication-related clinical decision making and prescribing workflow (PhD; UCL School of Pharmacy)	Started September 2020. Full time. Ongoing
Nouf Alsalem	Bryony Dean Franklin (primary supervisor)	Use of handheld medication records to support patient safety (PhD; UCL School of Pharmacy)	Started September 2021. Part time. Ongoing
Tugce Haykir	Bryony Dean Franklin (second supervisor)	Stewardship of high-risk drugs - What can we learn from antimicrobial stewardship programmes? (PhD; UCL School of Pharmacy)	Started January 2022. Full time. Ongoing

Table 3: PhD and Postgraduate Fellowship students under CMSSQ supervision.

## Postgraduate Masters students

We provide supervision to ICHT staff, UCL School of Pharmacy students, and Imperial College students conducting postgraduate Masters degrees in a range of topics related to medication safety. This year, **Daniel Murphy** graduated with a distinction grade in MSc Genomic Medicine from St George's University, and **Shahd Abdelaziz** is doing a postgraduate MSc in Patient Safety at Imperial College.

## Visiting students

We have traditionally hosted a small number of visiting undergraduate, postgraduate and postdoctoral students who complete internships and sabbaticals with us and assist with a range of audit, research and service development projects. We were not able to do this for the past few years due to the COVID-19 pandemic, but are delighted to have been able to do so again this year. Specifically, we welcomed the following:

- Charlotte Koldeweij, PhD student, Radboud University Medical Centre, The Netherlands
- Beatriz Fonseca, Undergraduate pharmacy student, University of Lisbon, Portugal
- Qianchen Ma, Pharmaceutics MSc student, University College London, United Kingdom

## Medication safety

Working with a range of international collaborators, we completed a Europe-wide survey of medication safety practices in European critical care units, on behalf of the European Association of Hospital Pharmacists (EAHP). A paper summarising our findings has been published in the *European Journal of Hospital Pharmacy*. ([Medication safety in European ICUs paper](#))

We completed our work to analyse medication incidents reported to the National Reporting and Learning System in which local or national guidelines may have contributed to medication errors, together with collaborators at the University of Bath and UCL. This was published in *Drug Safety* as well as being shared with a selection of doctors at a Royal Society of Medicine event. This will form the basis of future work exploring the value of user-testing of prescribing guidelines.

We also completed a systematic review to explore the relationship between socioeconomic status and potentially inappropriate prescribing in older people, which has been accepted for publication in *BMC Geriatrics*.

We undertook a service evaluation at ICHNT to examine the knowledge and understanding of healthcare professionals' working in surgical specialities of opioid stewardship in opioid-naïve patients. We presented this work at the Health Services Research and Pharmacy Practice 2024 conference. Tugce Haykir's PhD at UCL School of Pharmacy is also exploring opioid stewardship interventions in use in the UK and patients' and carers' perspectives on different approaches to opioid stewardship.

## Patient and carer involvement in medication safety

We have started a new study exploring how the information surrounding hospital inpatients' allergies, intolerances, and sensitivities is collected and documented in their health records. The 'MANADR' study aims to increase understanding on why sometimes patients with known ADRs still receive the causative medication(s), and why healthcare staff sometimes believe patients have histories of ADRs when this is not the case, including the role that patients and carers can play in supporting safety.

We continue to support the Helix team at Imperial College in developing and evaluating interventions to support family carers administering medication in end-of-life care at home.

Nouf Alsalem's PhD at UCL School of Pharmacy also focuses on patient-held medication records to support patient safety at transitions of care.

## Development and evaluation of technology

We continued our work exploring the role of barcode medication administration (BCMA) to support safe administration of medication in hospital inpatients. A paper exploring the facilitators and barriers to BCMA use by nursing staff using behavioural science frameworks was published in *BMC Nursing*, and a further paper reporting the impact of a quality improvement intervention to increase scanning has been accepted for publication in *BMJ Quality and Safety*. We are now finalising the protocol for a realist evaluation of BCMA in two different hospitals.

Calandra Feather's PhD focuses on patient-specific decision support within electronic prescribing systems, with her systematic review being listed as one of the top 10 papers published in *BMJ Quality and Safety* during 2023.

Calandra and Bryony are part of a team developing and evaluating indication-specific computerised decision support as an approach to decrease prescribing errors. This involves continued collaboration with Dosium, now a spin-out from Imperial College London, together with the British National Formulary. Funding was received this year from NHS England to conduct a first-of-type evaluation of its use in clinical practice.

## Use of anti-infectives

We continue working with Dr Sara Garfield and colleagues at UCL School of Pharmacy on studies exploring inter-faith interventions to address vaccine hesitancy.

PhD student Nouf Alaboud's work includes evaluation of a sepsis scoring system as part of an electronic health record at a large London hospital trust.

Bryony Dean Franklin continues as theme lead for a research theme on 'practice, design and engineering' within the NIHR HPRU in Healthcare Associated Infections and Antimicrobial Resistance at Imperial College and is Chair of the Centres for Antimicrobial Optimisation Network ('CAMO-Net') Medicines Management Research Theme, supporting researchers internationally.

## Publications and peer review

During the past year, 20 peer-reviewed papers were published, as well as 5 other publications, and presented 23 conference abstracts of which five won prizes. These are listed on page 18; research papers were published in prestigious journals such as *BMJ Quality and Safety*, *The Lancet Infectious Diseases* and *BMJ Open*. This brings our cumulative output to **335** peer-reviewed papers, **494** abstracts and **185** other publications since 2000.

Bryony Dean Franklin continues as co-Editor-in-Chief for the journal *BMJ Quality and Safety*, which receives about 2,000 submissions a year, is on the review panel for NIHR Clinical Doctoral Research Fellowship applications, and is a reviewer for *MedRxiv*. Other members of the team also peer review papers submitted to a range of journals.



(Left to right) **Daniel Murphy, Beatriz Fonseca** at the NWL NMAHPPs 2023 Symposium. **Neil Tickner, Penny Fletcher** at the Neonatal and Paediatric Pharmacy Group conference 2023.

## Education and training

The CMSSQ plays a key role in the provision of education both at UCL School of Pharmacy and within ICHT, at both undergraduate and postgraduate levels, and for both taught and research-based higher degrees.

As well as bringing specific expertise in research and medication safety, other teaching at UCL School of Pharmacy utilises the skills and experience of qualified pharmacy staff at ICHT for both undergraduate and postgraduate students. Contributions during the past year include the following:

### **UCL School of Pharmacy**

- We provide teaching each year to the MSc in Clinical Pharmacy, International Practice and Policy, with Bryony Dean Franklin delivering lectures on medication safety and quality improvement.
- Bryony Dean Franklin and Yogini Jani deliver an option module on Quality Improvement in Pharmacy Practice within the MPharm degree.
- Bryony Dean Franklin delivers a course on 'systems, safety and practice' for the undergraduate pharmacy degree, running throughout the four-year MPharm degree. This introduces key aspects of medication

safety over a course of five teaching sessions plus a workshop to integrate with professionalism and clinical practice.

- Bryony Dean Franklin is the Sustainability Lead for the MPharm degree at UCL School of Pharmacy.

### **Imperial College**

- Bryony Dean Franklin contributes to the MSc programmes in Patient Safety and Health Policy at Imperial College, both teaching and assisting with project supervision and marking, as well as conducting early and late-stage reviews for PhD students.

## Patient and public involvement

We involve patients and the public in our research whenever possible and are recognised as leaders in this area. Our work on lay involvement in data collection and in the analysis of qualitative data has been shared as examples of good practice locally, nationally and internationally. Most of our funded projects include members of the public on an advisory group or similar. These lay partners include patients, carers and the public.

- Bryony Dean Franklin remains academic champion for patient and public involvement and engagement (PPIE) for the NIHR NWL PSRC, which involves promoting PPIE and engagement, providing expertise in PPIE in the context of patient safety research and co-chairing the PPIE advisory board.
- We are currently working with one PPIE partner, and will be recruiting more, to the BCMAPS study, exploring the effect of BCMA on medication safety. PPIE partners will be involved in all stages of the study.
- A patient/public representative is part of the team for the MANADR study, exploring how previous reactions to medication are managed in the inpatient setting. They will be involved in reviewing the study material, analysis of the data, and dissemination.
- Bryony Dean Franklin chaired a virtual event for World Patient Safety Day 2023, as Director of the NIHR NWL PSRC. The event's theme was *'Engaging patients for patient safety'* and included keynotes from the UK's Patient Safety Commissioner and Rosie Bartel, a patient advocate.
- Rosie Bartel also co-authored an editorial in the *BMJ* with Bryony Dean Franklin reflecting on the implications of the Hughes Report on patient harm from pelvic mesh and sodium valproate.

## Collaboration with organisations

During the last year we have built on existing collaborations plus developed new links. As well as internal collaborations within UCL School of Pharmacy, ICHT and Imperial College, our external collaborators over the last year have included the following:

Dyson School of Design Engineering

NHS England

Radboud University Medical Centre

Cerner

Trinity College Dublin

Butler University

Public Health England

University of Oxford

Monash University

University of Bath

University of Manchester

University of North Carolina

Bryony Dean Franklin was invited by the World Health Organization (WHO) to visit two hospitals in India to support their introduction of WHO's Medication without Harm initiative, representing important collaboration in very different settings.



# Reflections and considerations for the future

**We are delighted to report that the CMSSQ's objectives are all being achieved. Specifically, we are recognised internationally as a leading medication safety research centre, and are conducting funded inter-disciplinary research related to the quality and safety of medication use. We are increasingly influencing patient safety policy and practice, and have an impressive ongoing publication record. We are building capacity in health services research within pharmacy and beyond, and are partnering with patients and the public at all stages of our research.**

**Our outputs remain strong, with numbers of peer reviewed papers and conference abstracts remaining high following a dip during the Covid-19 pandemic.**

**Over the next year we will be focusing on pursuing further grant applications in order to maintain future income, as well as working to translate our research findings into practice and policy. We will also be continuing to support capacity building in research both locally and more widely.**



# Publications

## PEER REVIEWED PAPERS

**Gilchrist M**, Jamieson C, Drummond F, Hills T, Seaton RA, Santillo M. Assessment of ceftolozane/tazobactam degradation profile and toxicity data in elastomeric devices for continuous infusion via outpatient parenteral antimicrobial therapy (OPAT). *JAC Antimicrob Resist.* 2023 Apr 17;5(2):dlad047. doi: 10.1093/jacamr/dlad047. eCollection 2023 Apr

Rawson TM, Antcliffe DB, **Wilson RC**, Abdolrasouli A, Moore LSP. Management of Bacterial and Fungal Infections in the ICU: Diagnosis, Treatment, and Prevention Recommendations. *Infect Drug Resist.* 2023 May 4;16:2709-2726. doi: 10.2147/IDR.S390946. PMID: 37168515; PMCID: PMC10166098.

Hong LT, Downes KJ, FakhriRavari A, Abdul-Mutakabbir JC, Kuti JL, Jorgensen S, Young DC, Alshaer MH, Bassetti M, Bonomo RA, **Gilchrist M**, Jang SM, Lodise T, Roberts JA, Tängdén T, Zuppa A, Scheetz MH. International consensus recommendations for the use of prolonged-infusion beta-lactam antibiotics: Endorsed by the American College of Clinical Pharmacy, British Society for Antimicrobial Chemotherapy, Cystic Fibrosis Foundation, European Society of Clinical Microbiology and Infectious Diseases, Infectious Diseases Society of America, Society of Critical Care Medicine, and Society of Infectious Diseases Pharmacists. *Pharmacotherapy.* 2023 Aug;43(8):740-777. doi: 10.1002/phar.2842.

Baltas I, **Gilchrist M**, Koutoumanou E, Gibani MM, Meiring JE, Otu A, Hettle D, Thompson A, Price JR, Crepet A, Atomode A, Crocker-Buque T, Spinosa D, Guyver H, Tausan M, Somasunderam D, Thoburn M, Chan C, Umpleby H, Sharp B, Chivers C, Vaghela DS, Shah RJ, Foster J, Hume A, Smith C, Asif A, Mermerelis D, Reza MA, Haigh DA, Lamb T, Karatzia L, Bramley A, Kadam N, Kavallieros K, Garcia-Arias V, Democratis J, Waddington CS, Moore LSP, Aiken AM. Exploring the views of infection consultants in England on a novel delinked funding model for antimicrobials: the SMASH study. *JAC Antimicrob Resist.* 2023 Aug

1;5(4):dlad091. doi: 10.1093/jacamr/dlad091. eCollection 2023 Aug. PMID: 37533762

Grailey K, **Hussain R**, Wylleman E, Ezzat A, Huf S, **Franklin BD**. Understanding the facilitators and barriers to barcode medication administration by nursing staff using behavioural science frameworks. A mixed methods study. *BMC Nurs* 22, 378 (2023). <https://doi.org/10.1186/s12912-023-01382-x>

Mohsin-Shaikh S, Blandford A and **Franklin BD**. Hospital pharmacists', doctors' and nurses' perceptions of intra- and inter- professional communication in the context of electronic prescribing and medication administration systems: a qualitative study. *PLoS One* 2023 18(11) e0294714

Xiao S, Kai Z, **Murphy D**, Li D, Patel D, Bielowka AM, Bernabeu-Herrero ME, Abdulmogith A, Mumford AD, Westbury SK, Aldred MA, Vargesson N, Caulfield MJ; Genomics England Research Consortium; Shovlin CL. Functional filter for whole-genome sequencing data identifies HHT and stress-associated non-coding SMAD4 polyadenylation site variants >5 kb from coding DNA. *Am J Hum Genet.* 2023 Nov 2;110(11):1903-1918. doi: 10.1016/j.ajhg.2023.09.005. Epub 2023 Oct 9. PMID: 37816352; PMCID: PMC10645545. <https://pubmed.ncbi.nlm.nih.gov/37816352/>

McCarley SC, **Murphy DA**, Thompson J, Shovlin CL. Pharmacogenomic Considerations for Anticoagulant Prescription in Patients with Hereditary Haemorrhagic Telangiectasia. *J Clin Med.* 2023 Dec 15;12(24):7710. doi: 10.3390/jcm12247710. PMID: 38137783; PMCID: PMC10744266. <https://pubmed.ncbi.nlm.nih.gov/38137783/>

Bolton WJ, Wilson R, **Gilchrist M**, Georgiou P, Holmes A, Rawson TM. Personalising intravenous to oral antibiotic switch decision making through fair interpretable machine learning. *Nat Commun.* 2024 Jan 13;15(1):506. doi: 10.1038/s41467-024-44740-2. PMID: 38218885

Riezk A, **Wilson RC**, Cass AEG, Holmes AH, Rawson TM. A low-volume LC/MS method for highly sensitive monitoring of phenoxymethylpenicillin, benzylpenicillin, and probenecid in human serum. *Anal Methods*. 2024 Jan 25;16(4):558-565. doi: 10.1039/d3ay01816d. PMID: 38189092; PMCID: PMC10809906.

Bolton WJ, **Wilson R**, **Gilchrist M**, Georgiou P, Holmes A, Rawson TM. Personalising intravenous to oral antibiotic switch decision making through fair interpretable machine learning. *Nat Commun*. 2024 Jan 13;15(1):506. doi: 10.1038/s41467-024-44740-2. PMID: 38218885; PMCID: PMC10787786.

Assunção-Costa L, Pinto CR, Machado JFF, Gomes Valli C, Fernandes de Souza LEP and **Franklin BD**. Validation of a method to assess the severity of medication administration errors in Brazil. *BMJ Open Quality* 2023;12:e002510. doi: 10.1136/bmjopen-2023-002510

Jones M.D, Liu S, Powell F, Samsor A, Ting FCR, Velitois N, Wong YM, **Franklin BD**, Garfield S. Exploring the Role of Guidelines in Contributing to Medication Errors: A Descriptive Analysis of National Patient Safety Incident Data. *Drug Saf* (2024). <https://doi.org/10.1007/s40264-024-01396-7>

Sime FB, Wallis S, Jamieson C, Hills T, **Gilchrist M**, Santillo M, Seaton RA, Drummond F, Roberts J; Evaluation of the stability of aciclovir in elastomeric infusion devices used for outpatient parenteral antimicrobial therapy. *BSAC OPAT Drug Stability Testing Programme*. *Eur J Hosp Pharm*. 2024 Feb 6:ejhpharm-2023-003784. doi: 10.1136/ejhpharm-2023-003784.

Hong LT, Downes KJ, FakhriRavari A, Abdul-Mutakabbir JC, Kuti JL, Jorgensen S, Young DC, Alshaer MH, Bassetti M, Bonomo RA, **Gilchrist M**, Jang SM, Lodise T, Roberts JA, Tängdén T, Zuppa A, Scheetz MH. Response to comment on "International consensus recommendations for the use of prolonged-infusion  $\beta$ -lactams endorsed by the American College of Clinical Pharmacy (ACCP), the British Society for Antimicrobial Chemotherapy (BSAC), the Cystic Fibrosis Foundation (CFF), the European Society of Clinical

Microbiology and Infectious Diseases (ESCMID), the Infectious Diseases Society of American (IDSA), the Society of Critical Care Medicine (SCCM), and the Society of Infectious Diseases Pharmacists". *Pharmacotherapy*. 2024 Feb;44(2):208-209. doi: 10.1002/phar.2907.

Baltas I, Kavallieros K, Konstantinou G, Koutoumanou E, Gibani MM, **Gilchrist M**, Davies F, Pavlu J. The effect of ciprofloxacin prophylaxis during haematopoietic cell transplantation on infection episodes, exposure to treatment antimicrobials and antimicrobial resistance: a single-centre retrospective cohort study. *JAC Antimicrob Resist*. 2024 Feb 1;6(1):dlae010. doi: 10.1093/jacamr/dlae010. eCollection 2024 Feb. PMID: 38304723

Sneddon J, Drummond F, Guise T, **Gilchrist M**, Jenkins DR. Accreditation of antimicrobial stewardship programmes: addressing a global need to tackle antimicrobial resistance. *JAC Antimicrob Resist*. 2024 Feb 1;6(1):dlae007. doi: 10.1093/jacamr/dlae007. eCollection 2024 Feb. PMID: 38304721

## EDITORIALS

Garfield S, Etkind M, **Franklin BD**. Using patient and carer perspectives to improve medication safety at transitions of care [editorial]. *BMJ Quality & Safety* Published Online First: 13 December 2023. doi: 10.1136/bmjqs-2023-016801

Browne J, **Franklin BD**, Thomas EJ, et al. Our mission and how we hope to move the field forward: statement from the BMJ Quality & Safety senior editorial team 2023 [editorial]. *BMJ Qual Saf Epub ahead of print*: doi:10.1136/bmjqs-2023-016811

**Franklin BD**, Bartel R, Howitt P. Avoiding harm through hearing our patients [editorial] *BMJ* 2024; 384 :q532 doi:10.1136/bmj.q532

## CONFERENCE ABSTRACTS AND PRESENTATIONS

Koldeweij C, Kleuskens M, **Franklin BD**, Litjens C, Scheepers L, de Wildt S. Annual Meeting of the American-Society-for-Clinical-Pharmacology-and-Therapeutics (ASCPT), ELECTR NETWORK, 22 Mar 2023-24 Mar 2023. CLINICAL PHARMACOLOGY & THERAPEUTICS. WILEY. 113: S42-S42. 01 Mar 2023

**Richard C Wilson**, Alaa Riezk, Paul Arkell, Damien Ming, Ryan Armiger, **Victoria Latham**, **Mark J Gilchrist**, Anne-Grete Märtson, William W Hope, Alison H Holmes, Timothy M Rawson. Time to revisit probenecid for improving the effectiveness of penicillin V dosing: a randomised, open-label, crossover study. ECCMID 2023 15 Apr 2023

**Feather C**, Appelbaum N, Darzi A, **Franklin B**. Indication documentation and indication-based prescribing within electronic prescribing systems: a systematic review and narrativesynthesis of interventions that aid indication documentation. Poster presentation at Health Services Research and Pharmacy Practice conference, Bradford, 17-18 April 2023.

**Merchant E**, **Abdelaziz S**, Tetteh D, **Franklin B**, Garfield S. Developing a Carer-Led Intervention Supporting older people and their carers with Medicines Management through pathways of care using interviews: a qualitative service evaluation. Oral presentation at Health Services Research and Pharmacy Practice conference, Bradford, 17-18 April 2023.

**Abdelaziz S**, Garfield S, Norton J, Lloyd J, McLeod M, Neves AL, Van Dael J, **Franklin B**. Understanding the unintended consequences of new healthcare technologies aimed at supporting patient safety: a qualitative study. Oral presentation at Health Services Research and Pharmacy Practice conference, Bradford, 17-18 April 2023.

**Doherty C**, **Patel N**, **Brackenborough S**, Harmer M, Bravis V. IMPLEMENTATION OF A DIABETES SPECIALIST PHARMACIST TO SUPPORT INPATIENT AND ACUTE DIABETES CARE AT ST MARY'S HOSPITAL, IMPERIAL COLLEGE HEALTHCARE NHS TRUST. Poster presented at Diabetes UK

Professional Conference 2023, 26-28 April 2023, Exhibition Centre Liverpool

**Lumb P** and **Tickner N**. Clinical pharmaceutical challenges of a bone marrow transplant (BMT) patient with human immunodeficiency virus (HIV): a paediatric pharmacist perspective. Poster presented at the European Bone Marrow Transplant Conference, Paris, 23rd to 26th April 2023

Lees EA, **Tickner N**, Lyall H, McMaster P, Smith B, Cliffe L, Taylor G, Foster C. Infant Postnatal Prophylaxis (PNP) following maternal viraemia during breastfeeding. Poster abstract presentation at BHIVA Spring Conference 2023, Gateshead, 24<sup>th</sup> – 26<sup>th</sup> April 2023

**Tickner N**, Lees EA, Lyall H, McMaster P, Smith B, Cliffe L, Taylor G, Foster c. Infant Postnatal Prophylaxis (PNP) following maternal viraemia during breastfeeding. Neonatal and Paediatric Pharmacy Group 29<sup>th</sup> annual professional conference and exhibition. Cranage Hall, Cheshire. 3<sup>rd</sup> – 5<sup>th</sup> November 2023

**Penny Fletcher**, Nicola Vosser. Multiple organisations implement electronic prescribing across neonatal units on a shared Cerner domain. Neonatal and Paediatric Pharmacy Group 29<sup>th</sup> annual professional conference and exhibition. Cranage Hall, Cheshire. 3<sup>rd</sup> – 5<sup>th</sup> November 2023

Abu Bakar S, Payne H, Lyall H, **Tickner N**. Dosing regime, safety profile and drug levels for intravenous ganciclovir and oral valganciclovir in pre-term infants treated for CMV disease. Poster abstract presentation at 41<sup>st</sup> Annual Meeting of the ESPID 2023, Lisbon, 8<sup>th</sup> – 12<sup>th</sup> May 2023

Alaboud N, Jani Y, **Franklin BD**. End-users' perspectives on the awareness, usability, and satisfaction of a paediatric sepsis screening tool within an electronic health record system at an academic hospital in England: A survey-based study. Abstract presented at FIP Pharmacy Practice Research summer meeting 2023. Pharmacy Education 23:33

**Abdelaziz S, Marchant E, Boucher C, Shah S, Franklin BD, Garfield S.** Developing a carer-led intervention supporting older people and their carers with medicines management through pathways of care: a qualitative study. Oral presentation at Health Services Research UK conference, Birmingham, 4-6 July 2023.

Yardley S, Francis SA, **Franklin BD**, Ogden M, Kajamaa A, Mattick K. Exposing and understanding the hidden work of getting palliative prescription medications right at home, in hospital and hospice: an Activity Theory analysis to improve patient safety and carer confidence. Oral presentation at Health Services Research UK conference, Birmingham, 4-6 July 2023.

**Murphy DA**, Li D, Shovlin CL. Pharmacogenomics in clinical practice: exploration of testing methods. Poster presented at the North West London Research Symposium for NMAHPPs 2023, Imperial College London, 27th September 2023

**Abdelaziz S, Merchant E, Boucher C, Shah S, Franklin BD, Garfield S.** Developing a Carer-Led Intervention Supporting older people and their carers with Medicines Management through pathways of care using interviews: a qualitative service evaluation. Poster presented at the North West London Research Symposium for NMAHPPs 2023, Imperial College London, 27<sup>th</sup> September 2023

**Hire A, Franklin BD.** Inequalities and inappropriate prescribing - a systematic review and narrative synthesis. Poster presented at the North West London Research Symposium for NMAHPPs 2023, Imperial College London, 27<sup>th</sup> September 2023

**van Zuylen Z**, Omar L. Audit of Midwifery Patient Group Directions and Exemptions. Poster presented at the North West London Research Symposium for NMAHPPs 2023, Imperial College London, 27<sup>th</sup> September 2023

Islam F, Booth J and **Franklin BD.** Community pharmacy primary care network leads' views on a service to accelerate uptake of hypertension case-finding in community pharmacy: a qualitative study. Poster presented at the North West

London Research Symposium, Imperial College, 27 September 2023

**Fonseca B, van Zuylen Z, Franklin BD.** Ordering medication for hospital inpatients: pharmacy staff decisions on the type and duration of supply. Poster presented at the North West London Research Symposium for NMAHPPs 2023, Imperial College London, 27<sup>th</sup> September 2023

**Fonseca B, van Zuylen Z, Franklin BD.** Ordering medication for hospital inpatients: pharmacy staff decisions on the type and duration of supply. Poster presented at the Royal Pharmaceutical Society Annual Conference 2023, London. 10<sup>th</sup> November 2023

Francis SA, Yardley S, **Franklin BD**, Ogden M, Kajamaa A and Mattick K. A model of intended and ideal prescribing and medication use in symptom control palliative care: an international scoping review. Abstract presented at the Royal Pharmaceutical Society Annual Conference, London 10 November 2023.

Alaboud N, Jani Y and **Franklin BD.** The Impact of Electronic Prescribing System Factors on Prescribing Decision Making: A Systematic Review and Narrative Synthesis. Abstract Presented at the Royal Pharmaceutical Society Annual Conference, London 10 November 2023.

## OTHER

**Wilson R**, Whitney L (NHSE). Invited talk - BSAC Spring Conference, 19 May 2023, Implementation of an antifungal stewardship program and the impact on a stem cell transplant centre. Mycology 2023, 24 Mar 2023, The going got tough – antifungal stewardship in the COVID pandemic

**Gilchrist M.** Antibiotic stewardship is integral to Pharmacy First [blog]. Royal Pharmaceutical Society. 26<sup>th</sup> February 2024.  
<https://www.rpharms.com/blog/details/antibiotic-stewardship-is-integral-to-pharmacy-first>