THE FUTURE OF DATA USE IN QUALITY IMPROVEMENT

Audit & Feedback MetaLab Conference 2021

December 8-9, 2021

Cohosted by:

HEALTH • SERVICES • RESEARCH • UNIT

1495 UNIVERSITY OF ABERDEEN

Audit & Feedback MetaLab

PROGRAM SCHEDULE

December 8, 2021

3:00 - 3:10pm	Welcome and Introductions	Craig Ramsay
3:10 - 3:40pm	Keynote Presentation - What needs to happen to create more synergy between audit and improvement?	Mary Dixon-Woods
3:40 - 3:55pm	Discussion Panel	Jeremy Grimshaw Anne Sales Jan Clarkson
3:55 - 4:00pm	BREAK	
4:00 - 4:50pm	Implementing multifaceted team-based feedback in primary care: The REFLECT project	Sylvia Hysong
	Opportunities to improve the impact of two national clinical audit programmes: a theory-guided analysis	Tom Willis
4:50 - 5:00pm	BREAK	
5:00 - 5:50pm	Audit and feedback for antibiotic prescribing in primary care	Kevin Schwartz
	'You had to do something': dental antibiotic prescribing challenges during COVID-19 and beyond	Eilidh Duncan
5:50 - 6:00pm	Closing Remarks	Jan Clarkson

PROGRAM SCHEDULE

December 9, 2021

3:00 - 3:10pm	Welcome and Introductions	Craig Ramsay
3:10 - 4:00pm	A scalable service to improve healthcare quality through precision audit and feedback	Zach Landis-Lewis
	Update on the Cochrane Audit & Feedback Review	Noah Ivers
4:00 - 4:05pm	BREAK	
4:05 - 5:05pm	An in-depth analysis of the behavioural content of 290 randomized trials of audit and feedback	Carly Meyer
	Using behaviour change theory to assess intervention effectiveness in audit and feedback trials: a method for classifying and analysing interventions	Vivi Antonopoulou
	Better data for better healthcare – codesigning an improvement dashboard for primary care in Scotland	Hanne Bruhn
	Dark logic models: predicting harms in audit and feedback with examples from colonoscopy	Jamie Catlow
5:05 - 5:15pm	Closing Remarks	Craig Ramsay
5:15 - 6:00pm	Closed Audit & Feedback MetaLab Meeting	

SPEAKER BIOS

Dr. Vivi Antonopoulou

Dr. Vivi Antonopoulou is a Research Fellow for the Behavioural Science Policy Research Unit (BSc PRU). Vivi's current research focuses on optimising behaviour change interventions targeting healthcare professionals and on synthesising evidence to inform health-related policies. Her research interests include using behaviour change theory and models to design and develop effective interventions and the implementation of research evidence into practice. Prior to working in this post, Vivi was involved in projects aiming to change social care professional practice and exploring the effectiveness of training on evidence-based approaches, such as Motivational Interviewing. Vivi is a BPS Chartered Psychologist (CPsychol AFBPsS).

Dr. Hanne Bruhn

Dr. Hanne Bruhn completed her PhD in Psychology in 2008 and has been working as a Health Services Researcher in Academic Primary Care and in the Health Services Research Unit at the University of Aberdeen since. She currently works across a range of projects that are mainly methodology related. Dr. Bruhn worked on the 'Better data for better health care' project from 2019-2020.

Dr. Jamie Catlow

Dr. Jamie Catlow is a gastroenterology trainee in the North East of England who enjoys looking at people's guts. He is completing an MD at Newcastle University in audit and feedback in the field of endoscopy; using qualitative research methods to develop behaviour change interventions (BCIs) to improve early bowel cancer diagnosis and management in the UK's NED-APRIQOT study.
He has a diploma in medical education, is a keen endoscopy trainer and is developing tools to improve endoscopy training in the UK and Sierra Leone. Jamie lives in Newcastle upon Tyne and is a keen rock climber.

Professor Jan Clarkson

Jan Clarkson is Professor of Clinical Effectiveness and Consultant in Paediatric Dentistry at the University of Dundee, Associate Dean and Director of the Scottish Dental Clinical Effectiveness Programme NHS Education for Scotland, and joint Co-ordinating Editor of Cochrane Oral Health University of Manchester. Her research focuses on the production, synthesis and implementation of evidence to improve routine dental healthcare. She is Chief Investigator on six NIHR funded randomised controlled trials in dental primary care that investigate dental interventions for the prevention and treatment of dental disease. As joint Co-ordinating Editor of Cochrane Oral Health she manages the production of global priority reviews ensuring efficient updates with emerging new evidence. She leads the production of Scottish Dental Clinical Effectiveness Programme (SDCEP) guidance for dentistry which is widely used in education and clinical practice and is the only dental guidance with NICE accreditation. Jan is also Clinical Lead of the research programme embedded within SDCEP, Translation Research in a Dental Setting (TRiaDS), which provides implementation evidence that has improved the quality of dental healthcare. The findings of her research have informed policy in service and education and have led to changes in clinical practice.

Professor Mary Dixon-Woods

Mary Dixon-Woods is Director of THIS Institute and The Health Foundation Professor of Healthcare Improvement Studies in the Department of Public Health and Primary Care at the University of Cambridge. She is a fellow of the Academy of Social Sciences and the Academy of Medical Sciences, an honorary fellow of the Royal College of Physicians and the Royal College of General Practitioners, and a Professorial Fellow at Homerton College, Cambridge. Mary is also an NIHR Senior Investigator.

Mary Dixon-Woods' programme of research is concerned with generating a high quality evidence-base to support improvement in the organisation, quality and safety of healthcare. Characteristically using mixed-methods approaches, her work focuses on evaluation of quality and safety improvement interventions and programmes, culture and behaviour in health systems, and regulation and governance of health research and care. She has a special interest in methodological innovation in the study of healthcare improvement.

Mary served on England's National Advisory Group on the Safety of Patients in England, which produced the Berwick report in 2013. She also served on the review of information technology in the NHS led by Professor Bob Wachter, which reported in 2016. She was a Wellcome Trust Senior Investigator 2012-2019. Mary was the Harveian Orator for the Royal College of Physicians in 2018, the 500th anniversary of the College's founding.

Dr. Eilidh Duncan

Dr. Eilidh Duncan is a Research Fellow and Health Psychologist working to produce evidence about what works to improve health care, what doesn't and why. She began working in the Health Services Research Unit at the University of Aberdeen in 2009 and her work has focussed on i) the translation of research evidence into routine clinical practice; ii) the design and evaluation of interventions to change behaviour; and iii) the application of behavioural theory to trial recruitment and retention. She is currently undertaking a THIS (The Healthcare Improvement Studies) Institute postdoctoral fellowship exploring participatory approaches to the design of audit and feedback.

Dr. Jeremy Grimshaw

Dr. Jeremy Grimshaw received a MBChB (MD equivalent) from the University of Edinburgh, UK. He trained as a family physician prior to undertaking a PhD in health services research at the University of Aberdeen. His research focuses on the evaluation of interventions to disseminate and implement evidence-based practice. Dr. Grimshaw is a Senior Scientist, Clinical Epidemiology Program, Ottawa Hospital Research Institute, a Full Professor in the Department of Medicine, University of Ottawa and a Tier 1 Canada Research Chair in Health Knowledge Transfer and Uptake. He has been awarded the CIHR Knowledge Translation award twice and received the 2018 CIHR Barer-Flood career achievement award for Health Services and Policy Research. He has over 638 peer reviewed publications

Dr. Sylvia Hysong

Sylvia J. Hysong, Ph.D. is a Lead Research Scientist at the Center for Innovations in Quality, Effectiveness and Safety (IQuESt, funded by the U.S. Department of Veterans Affairs Health Services Research and Development Service, VA HSR&D), Associate Professor of Medicine at the Baylor College of Medicine, and Senior Faculty of the VA Quality Scholars Program Coordinating Center. She is an industrial/organizational psychologist with two decades of experience in implementation and organizational research. Currently funded by VA HSR&D and the Agency for Healthcare Research & Quality, her research interests include primary health care as a work environment, feedback systems, team coordination, and performance measurement.

Dr. Noah Ivers

Noah Ivers (MD, CCFP, PhD) is a family physician at Women's College Hospital, scientist at Women's College Research Institute, and innovation fellow at the Women's College Institute for Health System Solutions. He is also an Associate Professor in the Department of Family and Community Medicine and at the Institute for Health Policy, Management and Evaluation at the University of Toronto. He holds a Canada Research Chair in the Implementation of Evidence Based Practice. Noah's research focuses on the use of data to drive evidence-based, patient-centred improvements in healthcare. He has conducted multiple pragmatic randomized trials, systematic reviews, and qualitative work on health services and quality improvement interventions.

Dr. Zach Landis-Lewis

Dr. Zach Landis-Lewis is an Assistant Professor in the Department of Learning Health Sciences at the University of Michigan Medical School. His research incorporates knowledge representation, human-centered design, and implementation science to develop and evaluate digital interventions for healthcare professionals. He leads the development of a precision feedback system that prioritizes performance comparisons and trends while enabling mass customization of feedback interventions. He teaches a course on knowledge representation and management in health to graduate students. He received a Ph.D. in Biomedical Informatics and a Master of Library and Information Science from the University of Pittsburgh.

Dr. Carly Meyer

Dr. Carly Meyer is a Research Fellow at UCL, working within the NIHR Policy Research Unit in Behavioural Science. Carly is a mixed-methods researcher who is interested in the study of healthcare professional behaviour and the use of behavioural science models and frameworks to support behaviour change in a variety of health contexts. Carly's research has focused on exploring variations in effectiveness of audit and feedback interventions on healthcare professional behaviour, healthcare workers' use of protective behaviours during Covid-19, Covid-19 vaccine intention/behaviour, the implementation of patient- and family-centred care in audiology and speech therapy settings, and the development and evaluation of web-based tools/services to support people with communication disability.

Professor Craig Ramsay

Craig Ramsay is Director of the Health Services Research Unit and Professor of Health Care Evaluation at the University of Aberdeen.
He has wide ranging research interests in health services research with expertise in knowledge translation research, surgical trial evaluation, and quasi-experimental study designs and as statistical editor for the Cochrane Effective Practice and Organisation of Care group he has led the worldwide development of systematic review methodology for interrupted time series designs. He also directs the Aberdeen Health Technology Assessment Group, which is the only academic centre in Scotland responsible for providing technology assessment reports on new drugs and devices for the UK National Institute for Health and Care Excellence. He serves on several national and international committees and was an inaugural member of the Royal Society of Edinburgh Young Academy of Scotland.

Dr. Anne Sales

Anne Sales is a nurse and Professor in the Sinclair School of Nursing and the Department of Family and Community Medicine in the School of Medicine at the University of Missouri (Columbia). She is also a Research Scientist at the Center for Clinical Management Research at the VA Ann Arbor Healthcare System.
Her training is in sociology, health economics, econometrics, and general health services research. Her work involves theory-based design of implementation interventions, including: understanding how feedback reports affect provider behavior and through behavior change have an impact on patient outcomes; the role of social networks in implementation interventions; and effective implementation methods using electronic health records and digital interventions. She has completed over 40 funded research projects, many focused on implementation research. She is a founding co-Editor-in-Chief of Implementation Science Communications.

Dr. Kevin Schwartz

Dr. Kevin Schwartz, MD MSc FRCPC, is an infectious disease specialist at St. Joseph's Health Centre in Toronto as well as an academic infection control and antimicrobial stewardship physician at Public Health Ontario. He is an assistant professor at the Dalla Lana School of Public Health at the University of Toronto and an adjunct scientist at ICES. His research interests include vaccine preventable diseases and antimicrobial stewardship with a particular focus on improving community antibiotic use to slow the emergence of drug resistant infections.

Dr. Tom Willis

Tom Willis is an implementation researcher in the Leeds Institute of Health Sciences, University of Leeds. He was Programme Manager on two NIHR-funded projects: Action to Support Practices Implementing Research Evidence (ASPIRE) which designed and evaluated an intervention package including audit and feedback to improve adherence to high-impact clinical guidance in primary care; and Enhancing NAtional Clinical AudiT and feedback (ENACT) which examined ways to optimise the impact of clinical audit and feedback.

PRESENTATION ABSTRACTS

Implementing Multifaceted Team-Based Feedback in Primary Care: The REFLECT project

Presenter: Dr. Sylvia Hysong

Extensive research shows successful teams in healthcare require a level of coordination that includes understanding interdependent tasks and implementation of procedures that result in effective communication and coordination for patients. We report on the results of the REFLECT project, which implemented and evaluated the sustainability of a previously tested multifaceted feedback intervention composed of team-based audit-and-feedback with debrief in a sample of 10 primary care teams. A comparison sample of four teams received a passive handoff of the REFLECT intervention, consisting of printed program toolkits, the link to the REFLECT SharePoint website containing all necessary materials to implement REFLECT at their sites, and a personal walkthrough of all such materials with the site clinic director. The REFLECT implementation teams received enhanced implementation handoff activities, including all materials received by the comparison teams, enhanced technical assistance, live training, and up to 90 days of observation and feedback. Summative evaluation activities consisted of quantitative analysis of seven coordination indicators identified in previous research, over a period of up to a year. Formative evaluation activities consisted of mid-term qualitative interviews and end of project exit surveys with the passive and enhanced handoff teams, to understanding the barriers and facilitators participants faced with the intervention, the impacts of team culture on the intervention, and assess intervention fidelity. REFLECT teams showed significant improvement in overall coordination over time ($B = 1.54$, $p = .01$) and relative to control teams ($B = 2.47$, $p < .05$.). The formative evaluation identified protected time and schedule conflicts as a key barrier to implementation, as well as personnel with the required skill set to produce the REFLECT feedback report. No team was able to conduct REFLECT with 100% fidelity to planned interventions. The feedback report was the REFLECT component participants reported using the most and were most likely to identify it as being useful. We concluded that REFLECT can be implemented and adapted to support quality improvement of outcomes beyond coordination, when implemented to a sufficient level of fidelity. Key resources for success include dedicated programming staff and time for generating reports, and protected time for team participation. A dedicated implementation coordinator can provide much needed additional support to ensure a smooth, sustainable implementation.

Opportunities to improve the impact of two national clinical audit programmes: a theory-guided analysis

Presenter: Dr. Tom Willis

Audit programmes often make incremental changes to their methods to increase their impacts on clinical practice. This study demonstrates the practical application of Clinical Performance Feedback Intervention Theory (CP-FIT), using rapid analysis of expert interviews, to two national audit programmes which had recently introduced changes to their feedback methods. Such changes can augment feedback methods in ways that are consistent with best practice according to CP-FIT. However, their impacts may be limited by a range of remediable weaknesses in the feedback cycle.

Audit and feedback for antibiotic prescribing in primary care

Presenter: Dr. Kevin Schwartz

Antibiotic overuse is fueling a rise in antimicrobial resistance. Over 90% of antibiotics are prescribed in the community with two-thirds by primary care physicians. Approximately 25-50% of antibiotic prescriptions in primary care are unnecessary and about 1/3rd are for longer durations than needed. In this session we will review the evidence for audit and feedback to improve antibiotic prescribing in primary care as well as discuss the creation of a global network to advance this field forward.

'You had to do something': dental antibiotic prescribing challenges during COVID-19 and beyond

Presenter: Dr. Eilidh Duncan

Oral health services are among the most disrupted essential health services by COVID-19 worldwide with 60% of countries reporting partial, and 17% reporting severe/complete disruption. The consequences of this disruption to dental health services may be significant and far-reaching. In the UK, the numbers of patients receiving face-to-face dental care dropped abruptly and dentistry moved to remote triaging and operating on an 'advice, analgesia, antimicrobial' basis. Efforts to improve the quality of dental care face new complexities, including in the use of data for quality improvement strategies. This talk will discuss how we are responding to the pandemic in dentistry in Scotland and how we are tackling the impact of the pandemic on dental antibiotic prescribing.

A scalable service to improve healthcare quality through precision audit and feedback

Presenter: Dr. Zach Landis-Lewis

In this talk I will introduce a newly-funded NIH NLM R01 award to develop and study a precision audit and feedback system for anesthesia care. This 4-year project will study the effect of precision feedback-enhanced emails in a quality improvement consortium with 60 hospitals from more than 20 US states in a cluster-randomized trial. I will also introduce the concept of precision feedback interventions, which highlight performance comparisons and trends that are important to clinicians, and which enable mass customization of feedback delivery and display.

Update on the Cochrane Audit & Feedback Review

Presenter: Dr. Noah Ivers

The 2012 Cochrane review of A&F has been cited about 1000 times since its publication and led to a series of new research in the field. Over the past two years, dozens of volunteers from around the world have been working to update this review. We plan to publish in 2022 a new version will include over 250 randomized trials. In this session, we will describe some of the new methodological approaches taken in this update, some of the challenges, and some of the initial findings.

An in-depth analysis of the behavioural content of 290 randomized trials of audit and feedback interventions

Presenter: Dr. Carly Meyer

As part of the most recent Cochrane review update, we have coded the behaviour change techniques (BCT) present in 290 randomized trials of audit and feedback interventions targeting healthcare professional behaviour change. Preliminary analyses indicate that the most frequently used BCTs are: feedback on behaviour, instruction (e.g., provision of clinical practice guidelines), social comparison (e.g., peer benchmarking), education, and credible source (e.g., endorsement by professional body). These findings will help inform the design of future audit and feedback interventions.

Using behaviour change theory to assess intervention effectiveness in audit and feedback trials: A method for classifying and analysing interventions

Presenter: Dr. Vivi Antonopoulou

This talk will present a method of applying five key behaviour change theories relevant to audit and feedback to trials included in the most recent Cochrane review update, to identify mechanisms through which audit and feedback has most effect. Results demonstrate that a theory-based approach to measure intervention effectiveness is feasible and can be beneficial in guiding intervention design and recommendations.

Better data for better health care — codesigning an improvement dashboard for primary care in Scotland

Presenter: Dr. Hanne Bruhn

Introduction: National Health Service Scotland (NHS Scotland) has a core goal to systematically improve the quality, safety and efficiency of care. However, currently it can be difficult for clinicians and managers to access and use existing routine data for improvement.
The aims of the project were to understand the data needs of improvers in primary care (including medics, other Health Care Professionals and managers), to rigorously research how best to design informatics tools to support improvement, and to map existing data resources in order to integrate them with Public Health Scotland dashboards.
Methods: We used a codesign approach, actively involving the potential users of a dashboard tool in the design and improvement stages of development.
Stage 1, face-to-face workshop - explored experiences of, and influences on the use of data and data visualisation tools for improvement in general practice. It also specified the users and uses of a data visualisation tool and formed the basis for prototype v1.
Stage 2, online interviews and a discussion board - aimed to further specify the content of a data visualisation tool and to obtain feedback on prototype version 1 for further refinement. Participants provided feedback in an online discussion board to check agreement, identify completeness/gaps, and prioritise data categories. Stage 2 aimed to further specify the content of a data visualisation tool and to obtain feedback on prototype version 1 for further refinement.
Results: In total 18 primary care staff took part in one or more stages of the project.
Overall user-friendliness for all users was emphasized while the tool has to remain flexible to tailor data and outputs to individual users' needs and wants.
The top five data categories identified were: Prescribing; Chronic Disease Management; Workload, demographics and metrics; Emergent health issues; Realistic Medicine.
Discussion/conclusion: Details of the final recommendations from the codesign work will be presented and discussed. The recommendations from the codesign work included making a data tool a one-stop shop for data needs, as there are currently ten different databases available. They also highlighted the need to be able to tailor the view to the purpose of the user in order to optimise the tool for all types of users. It was also highlighted that a data tool should facilitate collaboration efforts making relevant data easily accessible for comparisons internally as well as externally.

Dark logic models, Predicting harms in audit and feedback with examples from colonoscopy

Presenter: Dr. Jamie Catlow

As part of empirical qualitative work we developed a feedback intervention theory based logic model for A&F in endoscopy. This mapped intended benefits, but also focussed on paradoxical effects and harms associated with A&F processes currently undertaken in clinical work. I will present how we modelled the paradoxical effects and harms described by participants using feedback intervention theory, and their application to improve the efficiency and safety of A&F behaviour change interventions.