

1	On Impact	Successful Nudge to Encourage Doctors to Sit Facing the Patient During Ward Rounds	10
2	ARC WM Quiz		
3	Do National Enquiries of 'Failing Organisations' Do More Harm Than Good?	The Concept of Hybrid Designs	11
4	Setting Initial Research Directions for the Core Research Theme of the Midlands Patient Safety Research Collaboration (PSRC)	Biography of Joseph Goldberger and the Prevention of Pellagra	12
		Latest News & Events	14
		Recent Publications	16



## ARC West Midlands & Midlands PSRC News Blog

# On Impact

*Richard Lilford, ARC WM Director, PSRC Midlands Co-Director*

Recently, I was asked to write a commentary for the *Journal of the American Medical Association*. I read their advice for commentary authors and was interested to find an injunction against use of the word ‘**impact**’. My work as an NIHR ARC Director is all about achieving ‘**impact**’. Why would we be paid to do applied research if not to have impact?

The JAMA instructions did not really explain the reason for eschewing the word ‘**impact**’, other than to say it should be restricted to events like car crashes.

I have therefore reflected on what may be problematic with the use of impact to describe the practical consequences of applied health research. In particular, I reflected on the need to *demonstrate* impact.

The first point that came to mind concerned null results. Much applied research provides null results. In that case, the status quo remains – nothing needs to change. That does not mean that a null result is without impact. It may still have impact in the sense that the counter-factual intervention does not come into use. Impact for sure. But it requires mental effort to discern this counter-factual impact; it is not immediately accessible to the imagination. It does not create the same feeling as discovering a new and successful treatment, like embolectomy for stroke. Consider the scenario where the embolectomy trials had been null. The message would be “carry on with current treatment.” That may feel like an attenuated form of impact.

My second reflection builds on the first – if positive results yield greater perceived impact than null results, then it follows that research is rewarded according to outcome rather than quality. In turn, this could create a perverse incentive to ‘talk-up’ the positive effects of findings. To be sure, a null trial has impact in the sense that it supports the evidence-based practice movement. But the specific authors of a specific null study will find it hard to *demonstrate* impact.

A further thought concerns the relationship between a research project and ‘**impact**’. Insistence on impact might generate the illusion that change (or lack of change) turns on just one study. While there are examples of such impactful research – the CRASH-2 trial perhaps – most change results from multiple studies. Take embolectomy for thrombotic stroke – change in practice (impact) resulted from three separate randomised trials, all published in the *New England Journal of Medicine* (not to mention all the enabling work that preceded the trials). The demand for impact that can be hypothecated on a particular piece of research is, by-and-large, unrealistic and again, creates an incentive to over-claim. The truth, for most research, is that it contributes to impact but it is not impactful in isolation.[1]

Lastly, insistence on impact prioritises certain types of research over others. Much Applied Health Research is ‘upstream’, aiming to influence the determinants of effectiveness and safety, rather than tackling them directly. Take safety research. Some focusses on particular threats to safety, such as prescribing error or falls in hospital. However, other research

targets more distal determinants, for example, reducing staff conflict or promoting continued professional development.[2] The requirement to demonstrate impact incentivises the former type of research over the second. Take, as another example, Marmot's studies of wealth and health. The studies have been hugely influential but there is no straight, observable line from research to impact. While the work was important, it is difficult to hypothecate any particular impact on the findings.

I do not know why impact 'bugs' the editors of *JAMA*, but my reflections make me feel that they could be on to something. Perhaps we valorise impact too much. Or perhaps we should continue with the word but lessen the requirement to demonstrate impact. With all that said, those who pay for research will always want to show that the money is well spent. Maybe the onus should not be on the researcher to *demonstrate* (talk-up?) the impact of their research, but on funders or independent appraisers to examine return on investment in the round.

### References:

1. Schmidtke KA, Evison F, Grove A, Kudrna L, Tucker O, Metcalfe A, Bradbury AW, Bhangu A, Lilford R. Surgical implementation gap: an interrupted time series analysis with interviews examining the impact of surgical trials on surgical practice in England. *BMJ Qual Saf*. 2023; **32**(6): 341-56.
2. Aunger J & Turner A. Setting Initial Research Directions for the Core Research Theme of the Midlands Patient Safety Research Collaboration (PSRC). *NIHR ARC West Midlands & Midlands PSRC News Blog*. 2024; **6**(2): 4-9.

## ARC WM Quiz

What snake is believed to cause the greatest numbers of human deaths each year?

email your answer to: [arcwm@contacts.bham.ac.uk](mailto:arcwm@contacts.bham.ac.uk)



*Answer to previous quiz: Apnoea* is the medical term derived from the Greek word *apnoos*, meaning without breathing. Sleep apnoea is where breathing repeatedly stops and starts during sleep.

Congratulations to Alan Cohen, Theresa Haddon, and Alan Hargreaves who were first to answer correctly.

# Do National Enquiries of ‘Failing Organisations’ Do More Harm Than Good?

Richard Lilford, ARC WM Director, PSRC Midlands Co-Director

National enquiries are commonplace in the wake of ‘scandals’ and major disasters. These enquires end up implying that the outcome was ‘*a problem waiting to happen.*’ With the putative victims and the country in a state of outrage, the leader of the enquiry cannot just say that life is full of problems, and that the organisation in which the problem occurred was just doing its best. Approbation would detach from the organisation onto the person of the chair of the enquiry. Yet, logically, an enquiry that focusses on just one organisation is in no position to opine on whether that organisation is any worse than the average of other organisations providing that service. Sorry to say it out loud, but they are all ‘*problems waiting to happen.*’ Society seems to need a victim – somebody must suffer. We think the inquisition of medieval times has not disappeared, it has merely been superseded.

Take maternity care. An apparent excess of intra-uterine deaths in place A results in an enquiry. In many cases, the mother had discerned a reduction of foetal movements, but maternity staff had not enquired into this point. The enquiry may result in new guidance requiring regular scrutiny of foetal movements. Then the guidance becomes self-fulfilling – in any case, where the baby dies

in late pregnancy, the maternity unit will be criticised for non-compliance with the guideline. Yet the research evidence is equivocal about the value of routine enquiry into foetal movements. This is just one example – the rule book continues to create guidelines to the point that, if something goes wrong, it is highly likely that this or that guideline will have been breached. Worse, attention is deflected from other issues in care. In the last analysis, who knows, national enquires may do more harm than good.

This topic needs careful examination. It is no good just asking for more resources to improve the quality and safety of care – anaemic economic growth and increasing health demands mean that we must become more efficient in both how we use and how we allocate resources. There must be a point where asking the service to do more and more actually defeats good intentions. [1]

## Reference:

1. Meddings J, Saint S, Lilford R, Hofer TP. [Targeting Zero Harm: A Stretch Goal That Risks Breaking the Spring](#). *NEJM Catal Innov Care Deliv.* 2020; 1(4).

# Setting Initial Research Directions for the Core Research Theme of the Midlands Patient Safety Research Collaboration (PSRC)

Dr Justin Aunger, PSRC Core Theme Research Fellow; Prof. Alice Turner, PSRC Co-Director

To celebrate the launch of the combined ARC WM / Midlands PSRC blog,[1] we want to lay out some of our progress so far within the Core Theme of the Midlands PSRC. For those who are not aware, the core theme plans to conduct cross-cutting research that complements our existing Acute and Maternal Themes. This includes research into the organisational culture side of patient safety, and into safety-critical issues in other clinical areas. In this blog, we hope to explain the research areas we have investigated, those we have decided not to pursue, and what we are taking forward.

## Investigating Suggestions from the Launch Event

At our launch event, we collected ideas for important research avenues relating to patient safety, and voting resulted in five main ideas:

1. How can we understand barriers and facilitators to clinical decision support tools used in maternity care?
2. How do we measure if a team is safe?
3. How do we develop a better shared understanding of patient perception of risk?
4. How can patients contribute to safe acute care?
5. What is the relationship between staff voice and safety outcomes/indices?

In the core team of the Midlands PSRC, we have been investigating the potential of these ideas and have decided to take some forward in different ways. “*How do we measure if a team is safe*” was identified as one of the most promising entries on this list. To investigate this, we performed a scoping review on this topic and identified that a lot of work has already been done around creation of tools for measuring safety in teams.[2,3] We found that there is little agreement on the aspects that should be included in safety measures, as these can include a wide range of items from leadership and leadership support, through available safety supporting systems, to adequacy of training. Similarly, it is difficult in modern care scenarios to determine what comprises a team. As such, we decided that while this is an important route for future research and one that is being explored by others, it is not a priority area for us as it stands.

Other entries we are pursuing in other ways, such as “*How can patients contribute to safe acute care*”. This is a core part of NHS England’s Patient Safety Strategy for which, in 2021, they have published a “[Framework for involving patients in patient safety](#)”. This includes implementing a new role across NHS Trusts, called Patient Safety Partners, which involves patients getting involved in organisational governance and management processes for patient safety. To enhance understanding in this area, we have [published an advert](#) for a self-funded PhD student to investigate this and other ways in which patients can improve the safety of their own care.

For number 5, “*What is the relationship between staff voice and safety outcomes/indices?*”, Dr Justin Auger and Prof. Russell Mannion (Core PSRC team members) are building upon their prior research with colleagues at Birmingham, Manchester and Surrey about ongoing activities to reduce unprofessional behaviours between healthcare staff in the NHS, and the impact such behaviours can have on staff voice and patient safety.

Given the existing research in these areas and the routes we are already pursuing, we have decided to also look to research avenues that fit within the clinical expertise of the PSRC team. One such avenue is improving the follow-up of small lumps (referred to as ‘nodules’) in the lungs. These nodules can develop into lung cancer.

## Identifying a New Candidate for Clinical Decision-Making Support Tools

Lung cancer is common and is most frequently diagnosed at a late stage, meaning on average, patients unfortunately have only a 10% chance of surviving for 10 years from diagnosis.[4] Therefore, it is important to do what we can to identify lung cancer cases early. Lung cancer screening, which is currently being rolled out across the UK, is one way we can try to catch it early.

## Pulmonary Nodules and Lung Cancer Screening

Lung cancer screening is being offered to patients in the UK who are 55-74 years old and who either smoke or used to smoke.[5] They will be booked an appointment to have a computed tomography (CT) scan of their lungs to identify cancer, but these often also identify smaller growths – called pulmonary nodules. Lung cancer screening populations have a high prevalence of nodules, however, these are smoker and ex-smoker patients. Data from the lung cancer screening trial show that, of 1,994

participants who underwent CT screening, 1,013 patients had nodules (50.9%) and 52 (2.6%) of the total number screened developed lung cancer.[6]

About 95% of all pulmonary nodules are benign, but a subset of these can become malignant. [7] During screening, these scans can find growths of various sizes – those that are large and potentially already a tumour ( $\geq 8\text{mm}$  diameter); those medium-sized and that need to be followed-up for a longer period of time ( $\geq 5\text{mm}$  diameter); or those small enough to not be of any concern ( $< 5\text{mm}$  diameter). Size is not the only malignancy-related characteristic of the nodules, however. There is also a type of nodule that is more diffuse and ‘sub-solid’ called ground glass nodules, and these too have an increased chance of becoming cancer.

There are guidelines setting out how these nodules should be managed and followed-up – the British Thoracic Society Guidelines in the UK, and the Fleischner or American College of Chest Physician guidelines in the USA.[8-10] In the British Thoracic Society Guidelines, larger nodules over 8mm in diameter are assessed via a method to estimate risk of malignancy called a ‘Brock model’, whereas medium-sized nodules of 5-8mm in diameter have their growth rate assessed by comparing baseline diameter to the diameter during a CT scan booked three months later. After this three-month CT surveillance scan, the growth rate or ‘volume doubling time’ of the nodule will inform what steps are taken next. [7] Steps taken can include discharge, further follow-up scans over four years, or biopsy. It is important the follow-up is performed correctly if lung cancer is to be caught early.

## Follow-Up of Incidentally-Identified Nodules in the NHS and Abroad

The lung cancer screening programme has developed its own infrastructure for following up pulmonary nodules, as this is delivered by a private sector partnership with InHealth Group.[5] However, pulmonary nodules are also identified outside of the formal lung cancer screening programme. For example, nodules can be identified when the chest area is scanned for other reasons (such as when investigating heart problems). Up to 35% of people can have 'accidental' findings of pulmonary nodules when their thorax is CT scanned,[9] and 50% of these have more than one nodule.[7] Nodules found in this way are supposed to be reported by radiologists referred to a respiratory clinician for follow-up. However, the NHS does not have as robust an infrastructure for managing pulmonary nodule follow-up as the formal lung cancer screening programme. But the NHS is not alone in this; evidence from around the world suggests that these nodules are often followed up improperly even across very different health systems and contexts.[11-13]

For example, in a retrospective cohort study across three hospitals in Canada, guideline adherence has been shown to be poor, with less than 50% of patients being followed up in a timely manner in line with guidelines.[14] A further retrospective observational cohort study in a large academic medical centre in the USA was able to quantify patient harm, by drawing on the medical records of 314 patients with incidentally identified nodules.[15] Of these, the mean nodule size identified was 10.3 mm, 14.3% of nodules turned out to be malignant, and mean probability of cancer was 11.8%. Nodule management followed an evidence-based strategy in 245 patients (78.0%) and deviated in 69 patients (22%). Unfortunately, 14.49% of patients (10/69) who received non-guideline-adherent care received a delayed diagnosis of cancer compared to zero patients receiving

guideline-adherent care ( $p < 0.001$ ). Other studies have shown that guideline adherence is unfortunately worse for patients from underserved ethnic minority groups and those who are more socioeconomically deprived, which may exacerbate health inequalities.[16]

In the UK, this issue is only recently gaining more attention. Currently, the only data available are from a recent week-long audit conducted at Royal United Hospitals Bath NHS Foundation Trust. There, the authors found that 15% of nodule cases received a 'questionable' clinical recommendation, which is equivalent to 1200 patients per year at this one hospital alone.[13] Improper follow-up of patients can occur for many reasons including improper recording/coding of findings against guidelines, errors in scheduling of follow-up, communication issues between care teams, or patient-side failures to attend appointments.[16] Given this, to avoid unnecessary patient harm, it is important that patients with these nodules are followed up according to clinical guidelines. Luckily, there is evidence from abroad (mostly the USA), that adherence to guidelines can be improved.

## Interventions to Improve Follow-Up of Pulmonary Nodules

In our scoping of the literature so far, we have found at least fifteen interventions in other countries to improve clinician adherence to clinical guidelines and improve patient follow-up. These interventions are of several types. Examples include a clinical decision-making support tool to improve respiratory clinician guideline adherence.[17] This support tool was found to increase adherence to the guidelines of incidental findings (from 133 of 268 patients [50%] to 92 of 141 patients [65%],  $p = 0.003$ ). There are also automated technological systems to keep track of patients throughout their follow-up process.[18] An evaluation of this automated lung nodule registry tracking system

found a significant decrease in tracking failure or delay when compared against published guidelines from 74% to 10% ( $p < 0.001$ ) across eight hospitals. There are also process-based approaches, e.g., to improve communication between healthcare professionals.[19]

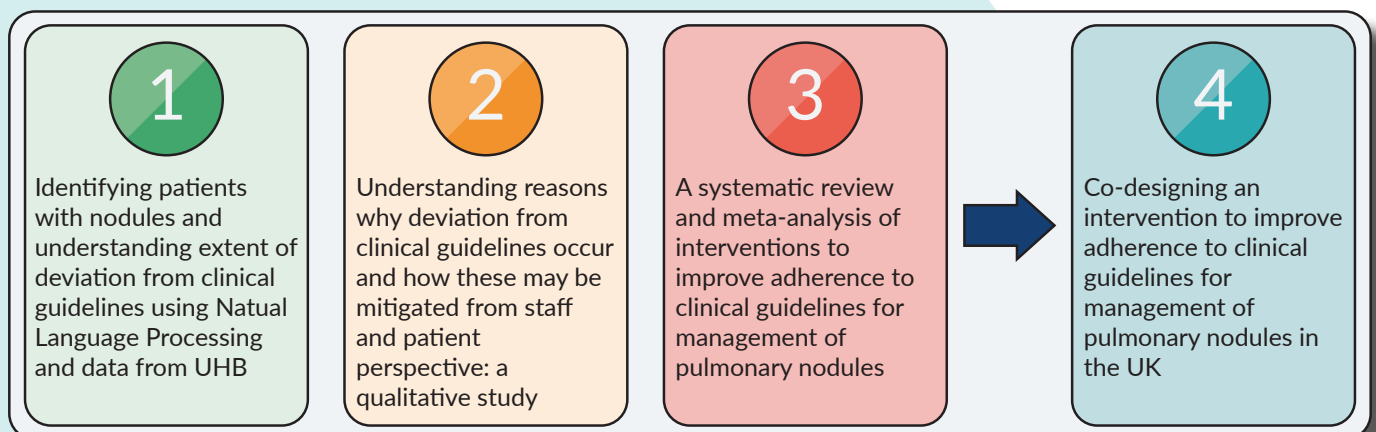
## Our Research Plan

Given the impact on patient harm, informal evidence from UK-based clinicians highlighting issues with patient follow-up of nodules, and potential ability to improve this pathway, we have decided that this is a promising research direction for the PSRC. Together with respiratory medicine colleagues, we are developing a multi-pronged research approach comprising of three projects (Figure 1):

1. To first establish the extent of deviation from follow-up, it will be necessary to develop a means for identifying patients who have nodules, as this may not be properly recorded in their clinical record. Our first project will be to develop a means for identifying patients with nodules based on their CT scan reports and what the radiologist recorded therein. We have applied for funding to gain access to CT scan reports from University Hospitals Birmingham (UHB), which we can then use

to develop a natural language processing (NLP) algorithm that reliably identifies nodule patients and that hopefully can even classify according to nodule characteristics. NLP has previously been used successfully for identifying nodule patients in the USA. [20] Once patients are identified, we will then be able to retroactively identify if they have been followed up correctly in-line with guidelines. We will also be able to identify if there are inequities in terms of which patients are followed up with use of patient demographic data. We aim to start at UHB to identify patients to assess follow-up locally, before applying for further funding to look at the issue nationally with a much larger group of patients using the NLP algorithms we have developed.

2. Our second project, running parallel to this, will be qualitative in nature and will explore how deviations from guidelines may happen, from the perspective of clinical and administrative staff at UHB. It will also explore patients' experience of moving through this care pathway. This will help to elucidate potential solutions.
3. Our third project is to work, also in parallel, on a systematic review and meta-analysis of interventions to improve adherence to clinical guidelines for the management of



**Figure 1:** Depiction of our research plan to investigate adherence to clinical guidelines for management of pulmonary nodules



incidentally identified pulmonary nodules worldwide. This would, along with the projects above, enable us to understand which intervention types are most effective. We also plan to perform a smaller scoping review to understand if other interventions have been used to improve follow-up of other incidental findings or 'incidentalomas'. These would inform co-development of an appropriate intervention. An example intervention may be to develop a clinical decision-making support tool, depending on where the key issues in the pathway are identified and what types of interventions are most effective (Figure 1).

We are continuing to involve our PPIE members in our plans and will also keep you updated about our plans and findings in this blog.

Our team is pursuing a range of research avenues around organisational culture including patient involvement in their own safety, the impact of unprofessional behaviours between staff on patient safety and how this can be reduced, as well as novel research into improving the follow-up pathway of pulmonary nodules to reduce unnecessary patient harm in lung cancer.

We hope these research plans sound robust and promising to you. We would welcome any thoughts to Justin Aunger, research fellow in the core theme of the PSRC: [j.aunger@bham.ac.uk](mailto:j.aunger@bham.ac.uk).

## References:

1. Lilford RJ. A Union of Two Infrastructures. *NIHR ARC West Midlands News Blog*. 2024; **6**(1): 1.
2. Churruca K, et al. Dimensions of safety culture: a systematic review of quantitative, qualitative and mixed methods for assessing safety culture in hospitals. *BMJ Open*. 2021; **11**(7): e043982.
3. Ellis LA, et al. Issues and complexities in safety culture assessment in healthcare. *Front Public Health*. 2023; **11**: 1217542.
4. Cancer Research UK. Lung cancer statistics. 2020.
5. Department of Health and Social Care. New lung cancer screening roll out to detect cancer sooner. 26 June 2023.
6. Marcus MW, et al. Probability of cancer in lung nodules using sequential volumetric screening up to 12 months: the UKLS trial. *Thorax*. 2019; **74**(8): 761–7.
7. Mazzone PJ and Lam L. Evaluating the Patient With a Pulmonary Nodule: A Review. *JAMA*. 2022; **327**(3): 264.
8. Gould MK, et al. Evaluation of Individuals With Pulmonary Nodules: When Is It Lung Cancer? *Chest*. 2013; **143**(5): e93S-120S.
9. Callister M, et al. British Thoracic Society guidelines for the investigation and management of pulmonary nodules: accredited by NICE. *Thorax*. 2015; **70**(s2): ii1–54.
10. MacMahon H, et al. Guidelines for management of incidental pulmonary nodules detected on CT images: from the Fleischner Society 2017. *Radiology*. 2017; **284**(1): 228–43.
11. Barrett TW, et al. Catching Those Who Fall Through the Cracks: Integrating a Follow-Up Process for Emergency Department Patients with Incidental Radiologic Findings. *Ann Emerg Med*. 2022; **80**(3): 235–42.
12. Schmid-Bindert G, et al. Incidental Pulmonary Nodules – What Do We Know in 2022. *Respiration*. 2022; **101**(11): 1024–34.
13. Mahboubian A and King D. Follow-up of indeterminate pulmonary nodules: Points of failure and AI-powered interventions. *aidance*. 25 September 2023.
14. Kwan JL, et al. Follow-Up of Incidental High-Risk Pulmonary Nodules on Computed Tomography Pulmonary Angiography at Care Transitions. *J Hospital Medicine*. 2019; **14**(6): 349–52.
15. Wayne MT, Prescott HC, Arenberg DA. Prevalence and consequences of non-adherence to an evidence-based approach for incidental pulmonary nodules. *PLOS ONE*. 2022; **17**(9): e0274107.
16. Schut RA, Mortani Barbosa EJ. Racial/Ethnic Disparities in Follow-Up Adherence for Incidental Pulmonary Nodules: An Application of a Cascade-of-Care Framework. *J Am Coll Radiol*. 2020; **17**(11): 1410–9.
17. Lu MT, et al. Radiologist Point-of-Care Clinical Decision Support and Adherence to Guidelines for Incidental Lung Nodules. *J Am Coll Radiol*. 2016; **13**(2): 156–62.
18. Shelver J, et al. Effect of an Automated Tracking Registry on the Rate of Tracking Failure in Incidental Pulmonary Nodules. *J Am Coll Radiol*. 2017; **14**(6): 773–7.
19. Kang SK, et al. Process Improvement for Communication and Follow-up of Incidental Lung Nodules. *J Am Coll Radiol*. 2020; **17**(2): 224–30.
20. Basilio R, et al. Natural Language Processing for the Identification of Incidental Lung Nodules in Computed Tomography Reports: A Quality Control Tool. *JCO Global Oncol*. 2023; **9**: e2300191.



# Successful Nudge to Encourage Doctors to Sit Facing the Patient During Ward Rounds

Richard Lilford, ARC WM Director, PSRC Midlands Co-Director

**S**traight on the heels of our own unsuccessful nudge intervention to encourage hospital staff vaccine uptake,[1] and a subsequent systematic review of nudge interventions,[2] comes a delightful nudge intervention study with a positive effect.[3]

The study is based on evidence that patients are more satisfied when their clinician sits facing them during ward rounds. The authors observed 125 encounters of hospital patients and their doctor, randomised to intervention or control. In the control group, a chair was available, but was stored out of the way, against a wall. In the intervention group, the chair was placed next to the patient's bed and orientated towards the patient. The study was termed a deception trial, since neither patient nor staff were aware of the intention behind the study.

The results showed that the doctor was more inclined to use the chair in the intervention encounters. Patients in the intervention group also reported more satisfaction with the encounter, and with overall experience of their hospital stay.

Like many things in life, nudges work in some situations, but not in others. I hypothesise that nudge interventions work best when they involve a physical manipulation of the environment. One example is the target placed in men's urinals, which reduce the amount of spillage.[4] Another is plate size and layout of food in cafeteria, which influences calorie intake.[5] However,

an alternative explanation (not mentioned by the authors) is that participating clinicians had correctly guessed - reverse engineered - the study hypothesis, so that the deception failed.

## References:

1. Schmidtke KA, Nightingale PG, Reeves K, et al. [Randomised controlled trial of a theory-based intervention to prompt front-line staff to take up the seasonal influenza vaccine.](#) *BMJ Qual Saf.* 2020; **29**(3): 189-197.
2. Malik AA, Ahmed N, Shafiq M, et al. [Behavioral interventions for vaccination uptake: A systematic review and meta-analysis.](#) *Health Policy.* 2023; **137**: 104894.
3. Iyer R, Park D, Kim J, et al. [Effect of chair placement on physicians' behavior and patients' satisfaction: randomized deception trial.](#) *BMJ* 2023; **383**: e07630.
4. Thaler R & Sunstein CR. [Nudge: Improving Decisions about Health, Wealth, and Happiness.](#) New Haven, CT: Yale University Press; 2008.
5. Hollands GJ, Shemilt I, Marteau TM, Jebb SA, Lewis HB, Wei Y, Higgins JP, Ogilvie D. [Portion, package or tableware size for changing selection and consumption of food, alcohol and tobacco.](#) *Cochrane Database Syst Rev.* 2015; **2015**(9): CD011045.

# The Concept of Hybrid Designs

Richard Lilford, ARC WM Director, PSRC Midlands Co-Director

**M**uch attention has been paid regarding the concept of so-called Hybrid Designs.[1] These are:

1. **Hybrid 1:** effectiveness studies – intervention effects on clinical outcomes.
2. **Hybrid 2:** measures both uptake and outcomes of interventions.
3. **Hybrid 3:** implementation studies – uptake of the intervention, but not clinical outcomes.

These are important distinctions. However, the term ‘designs’ is misleading – as Curran’s more recent reflections [2] make clear – design relates to whether the study is randomised, quasi-randomised, cluster, individual, and so on. The hybrid distinction is more related to outcomes/end points in a study. For example, in Hybrid 2, one wishes to observe both implementation and outcome variables.

Another way of thinking about these matters aligns to modern causal thinking (see Judea Pearl).[3] This is to consider outcomes along a causal chain:

Policy → high-level management → targeted management → clinical process → outcome.

For example:

Work-force training →

Provision of Continuing Professional Development →

Training on a specific process →

Implementation of that process →

Effect on the patient.

The theoretical basis for this point, including more detailed descriptions of levels (links) in the chain and the role of context, is laid out in more detail in a BMJ article from 2010.[4] This article provides a framework for thinking about the precision necessary at the different levels and the ‘inconvenient truth’ that measurable effects upstream often cannot generate effects downstream with useful levels of precision.

## References:

1. Curran GM, Landes SJ, McBain SA, et al. Reflections on 10 years of effectiveness-implementation hybrid studies. *Front Health Serv.* 2022; **2**.
2. Asada Y, Kroll-Desrosiers A, Chriqui JF, Curran GM, Emmons KM, Haire-Joshu D, Brownson RC. Applying hybrid effectiveness-implementation studies in equity-centered policy implementation science. *Front Health Serv.* 2023; **3**: 1220629.
3. Pearl J, Glymour M, Jewell NP. *Causal Inference in Statistics: A Primer*. Chichester: Wiley; 2016.
4. Lilford RJ, Chilton PJ, Hemming K, Girling AJ, Taylor CA, Barach P. Evaluating policy and service interventions: framework to guide selection and interpretation of study end points. *BMJ.* 2010: c4413.

# Biography of Joseph Goldberger and the Prevention of Pellagra

*Phil Simmons, ARC WM Administrator*

## Early Years

**B**orn on 16 July 1874, in Giralt in the Kingdom of Hungary (modern day Slovakia) as the sixth child of shepherds, there was little sign as to where life would take Joseph Goldberger. When the flock of sheep that his parents relied upon for their income was virtually destroyed by sickness, the family made an important decision to up sticks and move to America. There they settled in New York with the family setting up a small grocery store and Joseph attending the local public school. Joseph then attended City College, New York as an engineering student however this must have been unsatisfactory for him, as after attending a lecture by physiologist Dr Austin Flint, Jr, he switched to Bellevue Medical School graduating with an M.D. in 1895.

## Career

Upon graduation he joined a private medical practise in Wilkes-Barre, Pennsylvania, however, this life did not seem to suit him, so he joined the United States Marine Hospital Service in 1899 with the rank of Assistant Surgeon. Goldberger's first assignment was ironically to inspect immigrants in the port of New York, and it was here that he honed his epidemiological expertise, gaining a reputation for tackling epidemics.

In the years 1902 to 1906 he was posted to Mexico, Puerto Rico, Mississippi, and Louisiana

tasked with addressing yellow fever outbreaks for which his actions both earned him the rank of Passed Assistant Surgeon and led to him contracting yellow fever.

From 1906 to 1914 he was based at the Hygienic Laboratory in Washington but was sent to tackle Dengue fever (which he caught) in Texas and Typhus (yet another ailment that he caught) in Mexico.

In 1909 he discovered and published on the root cause of Shamburg's disease. This disease had similar symptoms to smallpox (Skin eruptions and continuous itching) however Joseph discovered that it was caused by an acarine mite common in wheat and found in high numbers in straw mattresses, a common item amongst the city's poorer occupants. It was in 1914 whilst attending an outbreak of diphtheria in Boston that the US Surgeon General reassigned Joseph to tackle what he would become famous for – Pellagra.

## Prevention of Pellagra

Pellagra was first identified in 1735 amongst Spanish peasants by Don Gaspar Casal. Known in Spanish as "Mal de la Rosa", it was often misdiagnosed as leprosy with patients experiencing what was colloquially thought of as the four Ds (dermatitis, diarrhoea, dementia and death). In 1914 Goldberger was tasked with addressing the Pellagra epidemic that had been raging there since 1906, with an estimated seven thousand people a year dying from the disease.

His theory was that diet was the cause of Pellagra due to:

1. The staple diet of the poor of the region consisted of starchy maize-based foods and dried meat.
2. Having visited numerous hospitals, orphanages and prisons, he had noted zero instances amongst doctors, nurses and other staff.

This theory flew in the face of the prevailing medical opinion, and that of the Thompson-McFadden report in 1912, which had found that Pellagra was most likely to be found in areas with poor sanitation and that a good predictor of someone “catching” it would be if others in the neighbourhood had also contracted it (a good case study on why not to mistake correlation for causation).

To prove his theory, correct, Joseph designed and implemented two experiments, one sited at two orphanages in Jackson, Mississippi and the other conducted on two women’s wards (one for black patients, the other for white patients) at the Georgia State Sanitarium. He had a control group that was fed on their standard diet of maize-based foods and dried meat and another that was fed a varied diet of fresh vegetables, milk and meat. In both instances everyone on the varied diet recovered whilst around half of the control group contracted Pellagra.

His next step was to enlist eleven healthy prisoners and feed them a maize-based diet over a 9-month period in order to induce Pellagra and show that it was diet that caused the disease (I’m not sure that this would go down well with an ethics committee today). At the end of the experiment, six prisoners had confirmed cases of Pellagra with the rest showing symptoms.

The results of this were not politically or socially acceptable to the Southerners as Joseph was a Northerner (The American Civil War between the north and the South, 1861 – 1865, was still a bitter bone of contention), Jewish and had exposed the cause of the epidemic to be a product of the regions poverty.

Joseph in desperation created a third experiment in which he held “filth parties” where overall seventeen doctors either orally ingested or injected themselves with scabs and other bodily fluids from Pellagra patients. It was noted that 6 months after these experiments, none of the participants had contracted Pellagra.

Joseph continued his research in to the cause of Pellagra until his death aged 54 in 1929 from renal cell carcinoma. Unfortunately, he never found out that the true source of the epidemic was the lack of Niacin otherwise known as B3, as this was discovery was made in 1937. Pellagra is now declared an eradicated disease in the US.

# Latest News and Events

## Hospitals at Home

Professor Dan Lasserson ([Acute Care Interfaces theme lead](#)) was recently invited to deliver a 'Distinguished Lecture' at Maynooth University Innovation Value Institute, Ireland, as the UK's expert in 'Hospital at Home' models and acute ambulatory care.

During his lecture he spoke on the topic of delivering acute medical care for patients at home; his experience of similar models in the UK; and opportunities for such an approach in support of Ireland's HSE services that benefit end users. He also discussed how advances in diagnostic and monitoring technology could lead to more patients being assessed and treated without any admission to hospital if that is their choice.

He has also been interviewed on Ireland's RTÉ DriveTime, which you can listen to: [rte.ie/radio/radio1/drivetime/2024/0418/1444400-drivetime-thursday-18-april-2024](https://www.rte.ie/radio/radio1/drivetime/2024/0418/1444400-drivetime-thursday-18-april-2024) (clip starts at 2:19:25); and for the Irish Times on how Hospital at Home could impact on the Irish Health Service: [irishtimes.com/health/your-wellness/2024/04/29/could-patients-be-seen-by-hospital-consultants-in-their-own-homes](https://www.irishtimes.com/health/your-wellness/2024/04/29/could-patients-be-seen-by-hospital-consultants-in-their-own-homes) – subscription required.

## Congratulations – SAPC Conference Prize

Congratulations to Clare Macdonald, a PhD student from our [Maternity theme](#), has won the ECR Oral Presentation Prize at a Society for Academic Primary Care (SAPC) conference

for her work exploring the routine six-week postnatal mother and baby check performed by GPs.

## Latest National NIHR ARC Newsletter

The **May** issue of the national ARCs newsletter is now available at: [http://eepurl.com/iNl\\_EE](http://eepurl.com/iNl_EE). This issue features work on building research capacity in the social care sector; an online tool for people with long-COVID; and new approaches and resources for dementia care.

The **April** issue (<http://eepurl.com/iMrvaU>) features work on the use of AI to predict and prevent stroke; improving children's attainment at primary school through reducing the stigma of poverty; and telephone-based care to prevent loneliness and depression.



To subscribe to future issues, please visit: <https://tinyurl.com/ARCnewsletter>.

## NIHR Academy Opportunity

The NIHR are providing five years of funding to organisations (*higher education, NHS organisations, or other providers of health, public health and/or care services based in England*) to allow exceptional academics to work at a professorial level. Nominees must have an impressive record of clinical and applied health and care research.

Details about the scheme are available at: [nihr.ac.uk/explore-nihr/academy-programmes/research-professorships.htm](https://www.nihr.ac.uk/explore-nihr/academy-programmes/research-professorships.htm)

## Building Research Capacity in Social Care Sector

A new social care research learning community has been launched to support researchers to take effective action and leading roles to develop research capacity in social care across England. Funded by the NIHR, the community is led by ARC Kent, Surrey and Sussex, as part of the

15 regional ARCs working together to support applied health and care research. For more information, please visit: [arc-kss.nihr.ac.uk/news/national-social-care-research-learning-community-launched-2](https://arc-kss.nihr.ac.uk/news/national-social-care-research-learning-community-launched-2)

## Identifying Carers in General Practices

Researchers from our Long-Term Conditions theme worked on a multi-centre, cross-sectional study of 11 General Practices. Over 9,000 patients completed a check-in screen at their GPs asking whether they provided regular, unpaid

help/support to friends or family members and if so, whether they felt their own needs were supported.

Read more at: [arc-wm.nihr.ac.uk/gp-recording-of-carers-in-england-a-cross-sectional-study/](https://arc-wm.nihr.ac.uk/gp-recording-of-carers-in-england-a-cross-sectional-study/)

## NIHR ARCs National Webinars: Health Inequalities

NIHR ARCs are hosting two upcoming webinars exploring how health inequity cuts across life stages and places:

Further information, including registration, can be found at: [eventbrite.com/cc/nihr-arcs-national-webinars-health-inequalities-2975089](https://eventbrite.com/cc/nihr-arcs-national-webinars-health-inequalities-2975089)

- Regional health inequalities. 5 June.
- Health inequalities in later life. 10 July.



# UKCRC Registered Clinical Trials Units Network Events

The UKCRC Registered Clinical Trials Units Network has introduced an events webpage to share learning and development opportunities, ranging from the fundamentals of trial development to the use of the latest novel trial

designs. These include conferences, webinars, and opportunities for MScs/PhDs provided by its member CTUs.

For further details, please visit: [ukcrc-ctu.org.uk/learning-development/](https://ukcrc-ctu.org.uk/learning-development/)

## Far Away From Home Study

The *Far Away From Home* study set out to map and understand the impact of current practices for accessing inpatient care for young people (aged 13-17) with mental health difficulties.

It has recently been published in *BMJ Mental Health* ([Roe, et al. BMJ Mental Health. 2024; 27\(1\): e300991](#)), along with an accompanying

video summarising the research: [youtube.com/watch?v=ukjUtWMvvqs](https://youtube.com/watch?v=ukjUtWMvvqs).

*This study was led by researchers at ARC East Midlands, in collaboration with ARC East of England, ARC Greater Manchester, ARC Oxford & Thames Valley and ARC West Midlands.*

# Recent Publications

Aiyegbusi OL, Cruz Rivera S, Roydhouse J, Kamudoni P, Alder Y, Anderson N, Baldwin RM, Bhatnagar V, Black J, Bottomley A, Brundage M, Cella D, Collis P, Davies EH, Denniston AK, Efficace F, Gardner A, Gnanasakthy A, Golub RM, Hughes SE, Jeyes F, Kern S, King-Kallimanis BL, Martin A, McMullan C, Mercieca-Bebber R, Monteiro J, Peipert JD, Quijano-Campos JC, Quinten C, Rantell KR, Regnault A, Sasseville M, Schougaard LMV, Sherafat-Kazemzadeh R, Snyder C, Stover AM, Verdi R, Wilson R, Calvert MJ. [Recommendations to address respondent burden associated with patient-reported outcome assessment](#). *Nat Med*. 2024; **30**(3): 650-9.

Ayorinde A, Ghosh I, Shaikh J, Adetunji V, Brown A, Jordan M, Gilham E, Todkill D, Ashiru-Oredope D. [Consideration of factors associated with inequalities in interventions that support health-care professionals' interaction with patients to reduce inappropriate antimicrobial use: a systematic review](#). *Lancet*. 2023; **402**(s1): S25.

Bajpai R, Partington R, Muller S, Forrester H, Mallen CD, Clarkson L, Padmanabhan N, Whittle R, Roddy E. [Prognostic factors for colchicine prophylaxis-related adverse events when initiating allopurinol for gout: retrospective cohort study](#). *Rheumatol*. 2024: keae229.

Bardsley M, Loveridge P, Bednarska NG, Smith S, Morbey RA, Amirthalingam G, Elson WH, Bates C, de Lusignan S, Todkill D, Elliot AJ. [The Epidemiology of Chickenpox in England, 2016-2022: An Observational Study Using General Practitioner Consultations](#). *Viruses*. 2023; **15**(11): 2163.

Bishop FL, Cross N, Dewar-Haggart R, Teasdale E, Herbert A, Robinson ME, Ridd MJ, Mallen C, Clarkson L, Bostock J, Becque T, Stuart B, Garfield K, Morrison L, Pollet S, Vennik J, Atherton H,

Howick J, Leydon GM, Nuttall J, Islam N, Lee PH, Little P, Everit HA. [Talking in primary care \(TIP\): protocol for a cluster-randomised controlled trial in UK primary care to assess clinical and cost-effectiveness of communication skills e-learning for practitioners on patients' musculoskeletal pain and enablement](#). *BMJ Open*. 2024; **14**(3): e081932.

Carrandi A, Grove A, Skouteris H, Melder A, Hu Y, Dever M, Higgins A. [Economic evaluations performed alongside randomized implementation trials in clinical settings: a systematic review](#). *Implement Sci Commun*. 2024; **5**(1): 24.

Causer H, Spiers J, Chew-Graham CA, Efstathiou N, Gopfert A, Grayling K, Maben J, van Hove M, Riley R. [Filling in the gaps: A grounded theory of the experiences and needs of healthcare staff following a colleague death by suicide in the UK](#). *Death Stud*. 2024: 1-12.

Cavallaro M, Dyson L, Tildesley MJ, Todkill D, Keeling MJ. [Spatio-temporal surveillance and early detection of SARS-CoV-2 variants of concern: a retrospective analysis](#). *J R Soc Interface*. 2023; **20**(208): 20230410.

Crocker TF, Ensor J, Lam N, Jordão M, Bajpai R, Bond M, Forster A, Riley RD, Andre D, Brundle C, Ellwood A, Green J, Hale M, Mirza L, Morgan J, Patel I, Patetsini E, Prescott M, Ramiz R, Todd O, Walford R, Gladman J, Clegg A. [Community based complex interventions to sustain independence in older people: systematic review and network meta-analysis](#). *BMJ*. 2024; **384**: e077764.

Damery S, Jones J, Idris E, Cooper A, Minshall H, Clowes C, Jolly K. [Mixed-methods evaluation of an enhanced asthma biologics clinical pathway in the West Midlands UK](#). *NPJ Prim Care Respir Med*. 2024; **34**(1): 7.

- Dicker B, Garrett N, Howie G, Brett A, Scott T, Stewart R, Perkins GD, Smith T, Garcia E, Todd VF. [Association between direct transport to a cardiac arrest centre and survival following out-of-hospital cardiac arrest: A propensity-matched Aotearoa New Zealand study](#). *Resusc Plus*. 2024; **18**: 100625.
- Drahos J, Boateng-Kuffour A, Calvert M, Levine L, Dongha N, Li N, Pakbaz Z, Shah F, Martin AP. [Health-Related Quality-of-Life Impacts Associated with Transfusion-Dependent  \$\beta\$ -Thalassemia in the USA and UK: A Qualitative Assessment](#). *Patient*. 2024.
- Geraghty AWA, Holt S, Chew-Graham CA, Santer M, Moore M, Kendrick T, Terluin B, Little P, Stuart B, Mistry M, Richards A, Smith D, Newman S, Rathod S, Bowers H, van Marwijk H. [Distinguishing emotional distress from mental disorder: A qualitative exploration of the Four-Dimensional Symptom Questionnaire \(4DSQ\)](#). *Br J Gen Pract*. 2024; BJGP.2023.0574.
- Hoverd E, Effiom V, Gravesande D, Hollowood L, Kelly T, Mukuka E, Owatemi T, Sargeant I, Ward S, Spencer R, Edge D, Dale J, Staniszewska S. [Understanding the inclusion and participation of adults from Black African Diaspora Communities \(BAFDC\) in health and care research in the UK: a realist review protocol](#). *BMJ Open*. 2024; **14**(3): e082564.
- Hoverd E, Staniszewska S, Dale J, Spencer R, Devrell A, Khan D, Lamouline C, Saleem S, Smith P. [Co-producing an online patient public community research hub: a qualitative study exploring the perspectives of national institute for health research \(NIHR\) research champions in England](#). *Res Involv Engagem*. 2024; **10**(1): 26.
- Hughes SE, Aiyegbusi OL, McMullan C, Turner GM, Anderson N, Cruz Rivera S, Collis P, Glasby J, Lasserson D, Calvert M. [Patient-reported outcomes in integrated health and social care: A scoping review](#). *JRSM Open*. 2024; **15**(3): 20542704241232866.
- Hughes SE, McMullan C, Aiyegbusi OL, Shaw K, Kinsella F, Ferguson P, Khatsuria F, Burns D, Pyatt L, Ansell J, Chakera E, Richardson-Abraham J, Denniston AK, Davies EH, Craddock C, Calvert M. [Protocol for a mixed-methods study to develop and feasibility test a digital system for the capture of patient-reported outcomes \(PROs\) in patients receiving chimeric antigen receptor T-cell \(CAR-T\) therapies \(the PRO-CAR-T study\)](#). *BMJ Open*. 2024; **14**(3): e085392.
- Jinks C, Botto-van Bemden A, Bunzli S, Bowden J, Egerton T, Eyles J, Foster N, Healey EL, Maddison J, O'Brien D, Quicke JG, Schiphof D, Parry E, Thomas MJ, Holden MA; Change OA Narrative (COAN) Initiative. [Changing the narrative on osteoarthritis: A call for global action](#). *Osteoarthritis Cartilage*. 2024; **32**(4): 414-20.
- Kletter M, Harris B, Connolly E, Namathanga C, Nhlema B, Makungwa H, Chabwera B, Phiri B, Brown C. [Mixed method evaluation of a learning from excellence programme for community health workers in Neno, Malawi](#). *BMC Health Serv Res*. 2024; **24**(1): 355.
- Lawton S, Mallen C, Hussain Z, Bajpai R, Muller S, Holmstrom C, Jinks C, Helliwell T. [Identifying carers in general practice \(STATUS QUO\): a multicentre, cross-sectional study in England](#). *BMJ Open*. 2024; **14**(4):e083816.
- MacLellan J, McNiven A, Kenyon S. [Provision of interpreting support for cross-cultural communication in UK maternity services: A Freedom of Information request](#). *Int J Nurs Stud Adv*. 2024, **6**:100162.
- Mahesh S, Lowther J, Miller R. [Improving Quality in Social Work: The Role of Peer Challenge](#). *Br J Soc Work*. 2023: bcad252.
- Martindale APL, Ng B, Ngai V, Kale AU, Ferrante di Ruffano L, Golub RM, Collins GS, Moher D, McCradden MD, Oakden-Rayner L, Rivera SC, Calvert M, Kelly CJ, Lee CS, Yau C, Chan AW, Keane PA, Beam AL, Denniston AK,

- Liu X. [Concordance of randomised controlled trials for artificial intelligence interventions with the CONSORT-AI reporting guidelines.](#) *Nat Commun.* 2024; **15**(1): 1619.
- Mensah D, Tuomainen H. [Eating Alone or Together: Exploring university students' eating patterns before and during the COVID-19 pandemic.](#) *Food and Foodways.* 2024; **32**(2): 163-85.
- Morgan C, Ashcroft DM, Chew-Graham CA, Sperrin M, Webb RT, Francis A, Scott J, Yung AR. [Identifying prior signals of bipolar disorder using primary care electronic health records: a nested case-control study.](#) *Br J Gen Pract.* 2024; **74**(740): e165-73.
- Moult A, Knight N, Medina N, Babatunde O, Kingstone T, Duffy H, Fryer K, Canvin K, Swaites L, Brading L, Bray L, Russell W, Dziedzic K. [An evaluation of a public partnership project between academic institutions and young people with Black African, Asian and Caribbean heritage.](#) *Res Involv Engagem.* 2024; **10**(1): 31.
- Muller S, Bailey J, Bajpai R, Helliwell T, Harrison SA, Whittle R, Mallen CD, Ashworth J. [Risk of adverse outcomes during gabapentinoid therapy and factors associated with increased risk in UK primary care using the clinical practice research datalink: a cohort study.](#) *Pain.* 2024.
- Napit IB, Shrestha D, Choudhury S, Gkini E, Ilozumba O, Gill P, Bishop J, Neupane K, Adhikari A, Sartori J, Watson SI, Lilford R. [A randomised Trial of Autologous Blood products, leukocyte and platelet-rich fibrin \(L-PRF\), to promote ulcer healing in LEprosy: The TABLE trial.](#) *PLoS Negl Trop Dis.* 2024; **18**(5): e0012088.
- Pallan M, Mason F, Parretti HM, Adab P, Abbott S, Jolly K. [Supporting healthcare professionals to address child weight with parents: a qualitative study.](#) *Br J Gen Pract.* 2024.
- Pocock H, Deakin CD, Lall R, Michelet F, Sun C, Smith D, Hill C, Rai J, Starr K, Brown M, Rodriguez-Bachiller I, Perkins GD. [Prehospital optimal shock energy for defibrillation \(POSED\): A cluster randomised controlled feasibility trial.](#) *Resusc Plus.* 2024; **17**: 100569.
- Rickett MC, Kingstone T, Gupta V, Shiers D, French P, Lennox B, Crawford M, Penington E, Hedges A, Ward J, Williams R, Bateman P, Chew-Graham CA. [Collaboration across the primary/specialist interface in early intervention in psychosis services: a qualitative study.](#) *Br J Gen Pract.* 2024.
- Roe J, Holland J, Burn AM, Hopkin E, Wild L, Fisher M, Nazir S, Ford T, Dubicka B, James A, Tuomainen H, Fung N, Horton K, Wagner AP, Morriss R, Sayal K. [Experiences and impact of psychiatric inpatient admissions far away from home: a qualitative study with young people, parents/carers and healthcare professionals.](#) *BMJ Ment Health.* 2024; **27**(1): e300991.
- Scior K, Richardson L, Randell E, Osborne M, Bird H, Ali A, Bonin EM, Brown A, Brown C, Burke CK, Bush L, Crabtree J, Davies K, Davies P, Gillespie D, Jahoda A, Johnson S, Hastings R, Kerr L, McNamara R, Menzies J, Roche H, Wright M, Zhang K. [Digital adaptation of the Standing up for Myself intervention in young people and adults with intellectual disabilities: the STORM feasibility study.](#) *Public Health Res (Southampton).* 2024; **12**(1): 1-111.
- Simkins J, Holden MA, Babatunde O, White S, Nicholls E, Long A, Dziedzic K, Chudyk A, Todd A, Walker C, Stanford C, Cottrell E, Edwards J, Healey EL, Cork T, Mallen C, O'Brien N. [Exploring the potential extended role of community pharmacy in the management of osteoarthritis: A multi-methods study with pharmacy staff and other healthcare professionals.](#) *Musculoskeletal Care.* 2024; **22**(1): e1873.
- Sokhal BS, Menon SPK, Willes C, Corp N, Matetić A, Mallen C, Mamas M. [Systematic Review of the Association of the Hospital Frailty Risk Score with Mortality in Patients with Cerebrovascular and Cardiovascular Disease.](#) *Curr Cardiol Rev.* 2024.
- Taylor B, Cross-Sudworth F, Rimmer M, Quinn L, Morris RK, Johnston T, Morad S, Davidson L,

- Kenyon S. [Induction of labour care in the UK: a cross-sectional survey of maternity units](#). *PLoS One*. 2024; **19**(2): e0297857.
- Tessier E, Newport D, Tran A, Nash SG, Mensah AA, Yun Wang T, Shantikumar S, Campbell H, Amirthalingam G, Todkill D. [Pertussis immunisation strategies to optimise infant pertussis control: A narrative systematic review](#). *Vaccine*. 2023; **41**(41): 5957-64.
- Tinch-Taylor R, Pickles A, Stringer D, Csipke E, Cella M, McCrone P, Reeder C, Birchwood M, Fowler D, Greenwood K, Johnson S, Perez J, Ritunnano R, Thompson A, Upthegrove R, Wilson J, Kenny A, Isok I, Joyce EM, Wykes T. [Understanding the Mechanisms of Cognitive Remediation on Recovery in People With Early Psychosis: A Mediation and Moderation Analysis](#). *Schizophr Bull*. 2024: sbae021.
- Torlinska B, Raza K, Filer A, Jutley G, Sahbudin I, Singh R, de Pablo P, Rankin E, Rhodes B, Amft N, Justice E, McGrath C, Baskar S, Trickey J, Calvert M, Falahee M. [Predictors of quality of life, functional status, depression and fatigue in early arthritis: comparison between clinically suspect arthralgia, unclassified arthritis and rheumatoid arthritis](#). *BMC Musculoskelet Disord*. 2024; **25**(1): 307.
- Tuomainen H, McGowan R, Williams-Ridgway A, Guy K, McNeil S. [Protocol for a scoping review to identify research reporting on eating disorders in minority ethnic populations in the UK, Canada, Australia and New Zealand](#). *BMJ Open*. 2024; **14**(2): e075034.
- Turk F, Sweetman J, Chew-Graham CA, Gabbay M, Shepherd J, van der Feltz-Cornelis C; STIMULATE-ICP Consortium. [Accessing care for Long Covid from the perspectives of patients and healthcare practitioners: A qualitative study](#). *Health Expect*. 2024; **27**(2): e14008.
- Vousden N, Bunch K, Kenyon S, Kurinczuk JJ, Knight M. [Impact of maternal risk factors on ethnic disparities in maternal mortality: a national population-based cohort study](#). *Lancet Reg Health Eur*. 2024; **40**: 100893.
- Walters B, Midwinter I, Chew-Graham CA, Jordan KP, Sharma G, Chappell LC, Crosbie EJ, Parwani P, Mamas MA, Wu P. [Pregnancy-Associated Cancer: A Systematic Review and Meta-Analysis](#). *Mayo Clin Proc Innov Qual Outcomes*. 2024; **8**(2): 188-99.
- Watson L, Protheroe J, Mallen CD, Muller S, Roddy E. [Health literacy and gout characteristics in a primary care cohort](#). *Rheumatol Adv Pract*. 2024; **8**(2): rkae034.
- Williams NH, Collins B, Comerford TJ, Dodd S, Fisher M, Hardwick B, Hennessy S, Jolly K, Jones I, Lane D, Lip GYH, Morgan E, Ralph P, Thijssen D, Singh SJ. [Effectiveness and cost-effectiveness of a web-based cardiac rehabilitation programme for people with chronic stable angina: protocol for the ACTIVATE \(Angina Controlled Trial Investigating the Value of the 'Activate your heart' Therapeutic E-intervention\)](#). *BMJ Open*. 2024; **14**(3): e084509.
- Winsper C, Bhattacharya R, Bhui K, Currie G, Edge D, Ellard D, Franklin D, Gill P, Gilbert S, Khan N, Miller R, Motala Z, Pinfold V, Sandhu H, Singh SP, Weich S, Giacco D. [The impact of reduced routine community mental healthcare on people from minority ethnic groups during the COVID-19 pandemic: qualitative study of stakeholder perspectives](#). *Br J Psychiatry*. 2024; **224**(5): 150-6.
- Woodcock C, Cornwall N, Dikomitis L, Harrison SA, White S, Helliwell T, Knaggs R, Hodgson E, Pincus T, Santer M, Mallen C, Ashworth J, Jinks C; PROMPPT research team. [Designing a primary care pharmacist-led review for people treated with opioids for persistent pain: a multi-method qualitative study](#). *BJGP Open*. 2024: BJGPO.2023.0221.
- Woodward A, Nimmons D, Davies N, Walters K, Stevenson FA, Protheroe J, Chew-Graham CA, Armstrong M. [A qualitative exploration of the barriers and facilitators to self-managing multiple long-term conditions amongst people experiencing socioeconomic deprivation](#). *Health Expect*. 2024; **27**(2): e14046.