



Building capacity in evidence synthesis through ESI Fellowships

IMPACT

1. Greater capacity for production of synthesised evidence
2. Greater evidence-based decision-making in policy and practice
3. Irish researchers as leaders in synthesis contribution



Photo 1: ESI Fellows Aoife Egan and Jenny McSharry visit Andrea Tricco's group in Toronto (2019)

SUMMARY

To strengthen the capacity of individuals to **do** and **use** evidence synthesis research, we developed and implemented a novel Evidence Synthesis Ireland (ESI) Fellowship model¹. Centred around **mentorship**, the scheme uses virtual placement of Fellows with high-functioning teams who are conducting impactful health and social care reviews in Ireland and internationally. This is creating a new generation of researchers with the **knowledge, capacity** and **networks** to drive excellent research impacting policy and practice.

DESCRIPTION

Fellows receive **structured theoretical training** from ESI, join an **experienced** review team and gain **hands-on evidence synthesis experience** in a high-quality, virtual environment. The **reach** of the ESI Fellowship scheme is significant. We have placed **43** Fellows (13 ♂ : 30 ♀). **Six** are based in **Northern Ireland**, and **2** from ROI were placed in NI, supporting cross-

border collaboration. Fellows are from varied disciplines and career stages: **academics** (13, many of whom have joint clinical appointments); full-time **clinicians** (11); **clinician-researchers** (7); **postdoctoral researchers** (10); and **policymakers** (3). This represents a diversification in the professional backgrounds of Fellows compared with the previous HRB Cochrane Fellowship Scheme (42% tenured academics; 25% healthcare professionals²). They work in **health and social care** and in **research** and **teaching**. The disciplines span medicine (15); nursing and midwifery (8); physiotherapy (6); social sciences/care (5) and others. In March 2021, we placed the **Director of Public Health** who is Clinical Lead for Health Protection, Knowledge, Evidence and Quality Improvement in the National Office for Health Protection (HSE), on a HRB-funded **Cochrane Public Health** review on knowledge translation for policy and practice. Fellows are therefore well placed to implement evidence and be a source of methodological expertise within their organisations.



WHO MENTORS THE FELLOWS?

We have **18** host centres across the world, including the island of Ireland, the UK, Europe, Canada, Australia and Japan³. Through these **collaborations**, we have established a reputation for placing high-calibre Fellows with experienced teams doing quality, impactful syntheses. This has led to further opportunities, including more Fellowships, training, and new collaborations. The scheme is strongly supported by host centres. They recognise the need for such training, and are impressed by the **quality of appointed Fellows**, which is underpinned by a **rigorous, transparent award process**. They also benefit from the exchange of “people and ideas” (Prof Sarah Miller, Campbell UK & Ireland, Queens University Belfast, personal communication 13 April 21).

Crucially, Fellows gain experience in **innovative methodologies** and **methods** across 11 review types (Table 1). Through monitoring, we see that Fellows and mentors identify that the schemes’ required competencies and skills are being achieved. We place Fellows on **practice- and policy-relevant reviews** that are commissioned, prioritised or funded by organisations such as the World Health Organisation, Public Health Agency of Canada, Health Canada, Public Health England, Cochrane, Campbell, the Department of Health (Ireland), the European Commission, National Institute for Health Research, and others.

In addition to skills in specific synthesis methods, Fellows gain knowledge in review **topics** across broad **clinical areas** such as public health, mental health, health services, physiotherapy, vaccination, palliative care, addiction, diabetes, cardiovascular disease and more, as well as in knowledge translation and communication strategies⁴. These **diverse methods** and topics demonstrate the widespread reach of ESI’s **impact on capacity building** while **addressing the needs** of health and social care across the globe and within Ireland.

The **beneficiaries** of this scheme are the **Fellows**, the organisations they work in, their **patients** and **students**, the review **teams**, and ultimately, the **end-users** of the research.

We measure capacity building in knowledge, skills and confidence through milestone-based interim reports and impact-focused final reports, completed with the mentor. Dr Andrea Tricco in Canada is now using our evaluation process as a “gold standard” on a training initiative of the Drug Safety and Effectiveness Network. Fellows apply their learning “back on the job” – for example, they report better critical appraisal of research, using evidence to inform their decisions, being more up-to-date with research for clinical practice, being invited to peer-review, developing further collaborations, receiving funding, and leading systematic reviews. Fellows also report teaching others in evidence synthesis: for example, Fellow Jenny McSharry developed resources for 10 stages of the systematic review process, including 5 videos, for students across postgraduate Psychology programs at NUI Galway.

Impact on the Fellows, and the specific research they are working on will be illustrated using individual case examples primarily focusing on:

- 1) **capacity development** in Fellows,
- 2) impact of reviews on **policy & practice**, and
- 3) **strengthened international collaboration**.

Review Types
Rapid Review
Scoping Review
Mixed methods Review
Systematic Review
Living Scoping Review
Systematic Review and Network Meta-analysis
Qualitative Evidence Synthesis
Evidence and Gap Map
Cochrane reviews of effectiveness
Cochrane Living Systematic Review
Cochrane Qualitative Evidence Synthesis

Table 1



Knowledge Translation Program, Toronto

Fellow Dr Aoife Egan
Mentor Dr Andrea Tricco

Dr Aoife Egan, now Assistant Professor of Medicine and Endocrine Fellow at the Mayo Clinic, was placed with Dr Andrea Tricco on a rapid review titled “The Effects of Recreational Cannabis use in People with Diabetes”. This review was **commissioned** by Diabetes Canada to inform their **clinical care guidelines**, in the context of recreational cannabis being legalised in the country. The results were used to establish **recommendations** that are being **used in patient care today**. The results also led to the publication of the Diabetes Canada position statement to **inform and guide best practices** for the care of people with diabetes⁵, as well as an **open access** rapid review published in Systematic Reviews⁶. The review findings are important to **patients and clinicians** and are relevant to **countries** with or considering legal access to cannabis.

Aoife says⁷ she now feels **confident** in her appraisal of evidence:

“[the Fellowship]...made a big difference to how I interpret evidence, how I critique the literature in a meaningful way and how I understand study limitations”. In her clinical practice, the review findings have informed Dr Egan’s counselling of her patients. Aoife said “I gained specific knowledge and skills in evidence synthesis methodology, knowledge in the specific topic as a bonus, as well as knowledge translation skills.”

Aoife also spoke of the benefit of gaining an international perspective in research, career and mentorship. This was consolidated with a visit to Dr Tricco with ESI Fellow, Dr Jenny McSharry (Photo 1.), supported by the Fellowship travel bursary. The Fellows found this an inspiring experience that supported **relationship building**. A year after the fellowship, Aoife is **collaborating** with Dr Tricco in: 1) applying for **funding for a systematic review** in diabetes, and 2) methodology **support** for a Core Outcome Set for gestational diabetes, highlighting strengthened networks and greater capacity for production of synthesised evidence.

Fellow Dr Gary Mitchell
Mentor Dr Andrea Tricco

Dr. Gary Mitchell, is a registered nurse and Lecturer at Queen’s University Belfast, **Northern Ireland**. Gary was placed with Dr Tricco on a systematic review **commissioned** by the **Public Health Agency** of Canada on the relationship between social isolation and falls amongst older patients. The review is completed and will be **submitted** to a high-impact international journal (Age and Ageing) and the results will be used by the Public Health Agency to develop supports for older adults.

Gary was then **invited to collaborate** with Dr Tricco on a **scoping review** for the Public Health Agency of Canada. The experience has also given him the **confidence to lead his own** scoping review.

“We are at the screening stage for this project and it has also been invaluable learning as it is my first experience of a scoping review. In terms of my own funded research (Burdett Trust, UK), I will be using what I am learning with the ESI Fellowship to lead my first scoping review about supporting health of older people living in community settings.”⁸



Dr Aoife Egan



Dr Gary Mitchell



Cochrane EPOC

Fellow Dr Paul MacDaragh Ryan | Mentor Prof Jeremy Grimshaw

Paul MacDaragh Ryan is an **Academic Track Intern Junior Doctor** (Cork University Hospital) with a PhD in microbiology. He is working with **Prof. Jeremy Grimshaw** on a **Cochrane living systematic review** of quality improvement strategies for adults with diabetes, which will be published in Q3 2021. This review is funded by **Diabetes Canada** and will be used for **guideline development** that will have direct impacts on patient care. The review will also allow for 'on call' responsiveness to stakeholder-driven queries; supporting **knowledge needs of stakeholders** aiming to improve diabetes care through evidence-based initiatives.

Paul said⁹:

"I have learned an immense amount about evidence synthesis, specifically in the context of a living systematic review, which has a number of unique methodological considerations. I have also learned the constituents of a well-designed and reported clinical study. Having a basic science background, I have had the opportunity to learn about a wide range of quality improvement strategies, as well as their application and execution."

Since becoming a Fellow, Paul secured an academic-residency position and, for his research project, is undertaking a **further collaboration** with Prof Grimshaw: Paul is now **leading a sister review** on quality improvement strategies in **children with type-1 diabetes** (Cochrane Metabolic and Endocrine Disorders). Not only does this show that ESI Fellows can leverage competitive positions, as Paul plans to become a paediatric endocrinologist with an interest in quality improvement interventions, the new collaboration will be foundational for his future career.

Prof Grimshaw, who is a mentor for **three** ESI Fellows (with a further **five** in 2021 in a novel, team-based approach to maintaining living reviews), said¹⁰:

"[Paul] made a major contribution to our review and was involved in screening, data abstraction and interpretation, and writing up of results. Previous versions of this review have had major impact (e.g. 2012 version published in *The Lancet* has been cited 398 times and has influenced diabetes strategies globally)¹¹. Also, there has been a lot of cross-pollination between the adult and paediatric team members; and the methods (including data abstraction tools) for the paediatric review built on the adult review. Together, these reviews will provide a comprehensive picture of the effects of diabetes quality improvement strategies in adult and paediatric settings."

The skills, knowledge and relationships built through these Fellowships can sustain impact beyond the lifetime of the individual review. This novel model is showing a broad and diverse reach, and in just two years is realising greater capacity for impact through production of evidence synthesis, greater evidence-based decision-making in policy and practice, and positioning Irish researchers as leaders in evidence synthesis.



Dr Paul MacDaragh Ryan



REFERENCES

- 1 **ESI Fellowship programme:** <https://evidencesynthesisisireland.ie/fellowships/>
- 2 Curran B & Barrett R <http://hdl.handle.net/10147/251412>
- 3 **Map of Host Centres**

Host Centres	Mentor Location	Country
SPOR Evidence Alliance	Toronto	Canada
Cochrane Consumers and Communication	Melbourne	Australia
Cochrane Airways	Monash	Australia
EPPI-Centre	London	UK
Cochrane Effective Practice and Organisation of Care (EPOC)	Ottawa	Canada
Health Information and Quality Authority (HIQA)	Dublin	Ireland
Cochrane Effective Practice and Organisation of Care (EPOC)	Oxford	UK
Trinity College Dublin	Dublin	Ireland
Cochrane Public Health	Newcastle	Australia
Campbell UK & Ireland	Belfast	Northern Ireland
Cochrane Pregnancy and Childbirth	Liverpool	UK
Cochrane Schizophrenia	Munich	Germany
Cochrane Ear, Nose and Throat	Oxford	UK
Cochrane Airways	London	UK
Cochrane Anaesthesia	Copenhagen	Denmark
Cochrane Stroke	Edinburgh	Scotland
Cochrane Anaesthesia	Kyoto	Japan

[CLICK HERE TO VIEW MAP](#)

- 4 For **list of ESI Fellows**, their review titles and outputs to date, see the outputs appendix.
- 5 Bajaj HS et al (2019). Diabetes Canada Position Statement on Recreational Cannabis Use in Adults and Adolescents With Type 1 and Type 2 Diabetes, Canadian Journal of Diabetes, 43 (6) <https://doi.org/10.1016/j.jcjd.2019.05.010>
- 6 Porr CJ, Rios P, Bajaj HS, **Egan AM** et al (2020). The effects of recreational cannabis use on glycemic outcomes and self-management behaviours in people with type 1 and type 2 diabetes: a rapid review. Syst Rev 9, 187 (2020). <https://doi.org/10.1186/s13643-020-01411-9>
- 7 Final Fellowship report (7 Sept 2019); ESI Fellowship experience webinar <https://evidencesynthesisisireland.ie/webinar-aoife-egan-esi-fellowship-scheme/> (21 Nov 2019); one-on-one interview (3 Nov 2020).
- 8 Interim Fellowship report (15 June 2020); informal feedback, email (4 Nov 2020).
- 9 Interim Fellowship report (6 Jan 2020); informal feedback, email (2 Nov 2020).
- 10 Letter of Support from **Jeremy Grimshaw** (see appendix)
- 11 Tricco et al (2012) Effectiveness of quality improvement strategies on the management of diabetes: a systematic review and meta-analysis, The Lancet, 379 (9833), [https://doi.org/10.1016/S0140-6736\(12\)60480-2](https://doi.org/10.1016/S0140-6736(12)60480-2)

Other

Letter of Support from **Andrea Tricco** (see appendix)

ESI Fellowship expected competencies:

https://docs.google.com/spreadsheets/d/1E9Z_GuSiNDE4nmMo3lbfgrYJqmpTzVp6OsoCuY-_XU/edit?usp=preview