

**Evaluating the Impact of a Falls Prevention  
Community of Practice in a Residential  
Aged Care Organisation**

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requirements for the degree of  
Doctor of Philosophy

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## **Author's Declaration**

This thesis is composed of my original work and contains no material previously published or written by another person except where due reference has been made in the text. I have clearly stated the contribution by others to jointly authored works that I have included in my thesis.

I have clearly stated the contribution of others to my thesis as a whole, including statistical design, survey design, data analysis, design of the intervention, professional editorial advice and any other original research work used in my thesis. The content of my thesis is the result of work I have carried out since the commencement of my research higher degree candidature and does not include a substantial part of work that has been submitted to qualify for the award of any other degree, diploma in any university or other tertiary institution. I have clearly stated which parts of my thesis, if any, have been submitted for another award.

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**Jacqueline Francis-Coad**

September 2016

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## Abstract

Falls in the residential aged care (RAC) sector are a global concern with humanitarian and economic consequences. Reducing falls using a multifactorial approach involving multidisciplinary staff is recommended, but it is not clear how RAC organisations in Australia can achieve this in a resource constrained environment. One potential solution is to develop a sustainable means of addressing falls prevention from within an organisation, creating a forum for staff to share ideas, expertise and achieve goals in a community of practice (CoP). The purpose of this research was to evaluate the impact of a falls prevention CoP on falls outcomes in a RAC setting.

A mixed methods design framed by a realist approach was undertaken, to better understand how CoP interventions were influenced by current conditions (contexts) in triggering (mechanisms) the observed outcomes. Diverse data sources including surveys, electronic CoP discussion transcripts, semi-structured interviews and organisational falls data were used to triangulate findings. The CoP was mapped across three phases. Phase 1 described how the CoP was developed, then evaluated its establishment and operation across 13 geographically diverse RAC sites. In Phase 2 the CoP identified gaps in falls prevention practice using evidence-based audit and feedback, determining the areas for priority intervention. Phase 3 comprehensively evaluated the impact of CoP activity at three levels; member, site and organisation.

Overall the CoP had a positive impact; members gained new peer connections and falls prevention knowledge, the proportion of residents supplemented with vitamin D improved significantly and a falls prevention policy and risk assessment tool were developed and implemented across the organisation. Management recognition and support were key mechanisms in achieving successful outcomes. Falls rates pre CoP were 10.1/1000 occupied bed days (OBD) compared with 10.9 /1000 OBD post CoP operation [coefficient 0.7, 95% CI (-33.5, 34.9)  $p = .967$ ]. This was potentially confounded by an increased use of beds for short stay transition care services and identified differences in defining falls between sites. A downward trend in the rate of injurious falls resulting in fractures was observed (pre CoP 0.2/1000 OBD compared

with 0.1/1000 OBD post CoP; [coefficient -0.3, 95% CI (-1.1, 0.4)  $p = .423$ ]. As the prioritised CoP interventions required design and development, implementation only occurred towards the end of the research period meaning the intervention effect on falls outcomes may require longer term follow up. The CoP remains operational and is ideally positioned to continue to lead evidence-based falls prevention practice change as determined by its membership.

## Publications, Presentations and Awards

### Published Works by the Author Incorporated into this Thesis

- Francis-Coad J.**, Haines T., Etherton-Ber C., Nobre D., & Hill A-M. (in press). Evaluating the impact of operating a falls prevention community of practice on falls in a residential aged care setting. *Journal of Clinical Gerontology and Geriatrics*
- Francis-Coad, J.**, Etherton-Ber, C., Naseri, C., & Hill, A-M. (2017). The effect of complex falls prevention interventions on falls in residential aged care settings: A systematic review protocol. *JBIS Database of Systematic Reviews and Implementation Reports*, 15(2), 236-244. doi: 10.11124/JBISRIR-2016-002938
- Francis-Coad, J.**, Etherton-Ber, C., Bulsara, C., Nobre, D., & Hill, A-M. (2016). Can a web-based community of practice be established and operated to lead falls prevention activity in residential care? *Geriatric Nursing*, Advance on line publication, <http://dx.doi.org/10.1016/j.gerinurse.2016.09.001>
- Hang, J., **Francis-Coad, J.**, Burro, B., & Hill, A-M. (2016). Assessing knowledge, motivation and perceptions about falls prevention among care staff in a residential aged care setting. *Geriatric Nursing*, 37, 464-469. doi:10.1016/j.gerinurse.2016.06.019
- Francis-Coad, J.**, Etherton-Ber, C., Bulsara, C., Nobre, D., & Hill, A.-M. (2016). Using a community of practice to evaluate falls prevention activity in a residential aged care organisation: A clinical audit. *Australian Health Review*, 41(1), 13-18. doi:10.1071/AH15189
- Francis-Coad, J.**, Etherton-Ber, C., Bulsara, C., Nobre, D., & Hill, A-M. (2015). Investigating the impact of a falls prevention community of practice in a residential aged-care setting: A mixed methods study protocol. *Journal of Advanced Nursing*, 71(12), 2977-2986. doi:10.1111/jan.12725

## **Manuscripts Submitted by the Author for Publication Under Peer Review**

**Francis-Coad, J.**, Etherton-Beer, C., Bulsara, C., Blackburn, N., Chivers, P., & Hill, A-M. What worked translating evidence into practice: A realist evaluation of the impact of a falls prevention community of practice. (*Ref. No.: BHSR-D-16-00388*)

## **Other Published Works by the Author during Candidacy Not Forming Part of the Thesis**

Hill, A-M., McPhail, S.M., **Francis-Coad, J.**, Waldron, N., Etherton-Beer, C., Flicker, L., Ingram, K., & Haines, T.P. (2016). 'My independent streak may get in the way': How older adults respond to falls prevention education in hospital'. *BMJ Open*, 6(7), E012363. doi:10.1136/bmjopen-2016-012363

Hill, A-M., McPhail, S.M., **Francis-Coad, J.**, Waldron, N., Etherton-Beer, C., Flicker, L., Ingram, K., & Haines, T.P. (2015). Educators' perspectives about how older hospital patients can engage in a falls prevention programme: A qualitative process evaluation. *BMJ Open*, 5(12), E009780. doi: 10.1136/bmjopen-2015-009780

Moran, L., **Francis-Coad, J.**, Patman, S., & Hill, A-M. (2015). Using a personalized DVD to prescribe an exercise program to older people post-hip fracture enhances adherence to the exercises – A feasibility study. *Geriatric Nursing*, 36(4), 273-280. doi:10.1016/j.gerinurse.2015.02.025

**Francis-Coad, J.**, & Hill, A-M. (2014). Discovering what experiences physical therapy students identify as learning facilitators in practical laboratories. *Journal of Physical Therapy Education*, 28(3): 42-49.

## **Oral Conference Presentations by Author**

### *International Conferences*

**Francis-Coad, J.**, Haines, T., Etherton-Beer, C., Nobre, D., & Hill, A-M. *Evaluating the impact of operating a falls prevention community of practice on falls in a residential aged care setting*. Presented at the 7<sup>th</sup> Biennial Australian and New Zealand Falls Prevention Conference, Melbourne, Australia, 27-29 November 2016

**Francis-Coad, J.,** Etherton-Beer, C., & Hill, A-M. *Using a community of practice (CoP) to measure falls prevention activity in a residential aged care setting – mind the gap.* Presented at the 44<sup>th</sup> Annual Conference of the British Society of Gerontology, Newcastle, UK 1-3 July 2015

**Francis-Coad, J.,** Etherton-Beer, C., & Hill, A-M. *Investigating the impact of a falls prevention community of practice (CoP) in a residential aged care setting.* Presented at the 6<sup>th</sup> Biennial Australian and New Zealand Falls Prevention Conference, Sydney, Australia, 16-18 November 2014

### *National Conferences*

**Francis-Coad, J.,** Etherton-Beer, C., Bulsara, C., Nobre, D., & Hill, A-M. *To determine the feasibility of implementing and operating a virtual falls prevention community of practice across multiple residential care sites.* Australian Physiotherapy Association National Conference 2015, Gold Coast, QLD, 3-6 October 2015. Abstract retrieved from:  
<http://physiotherapy.asn.au/conference>

Hill, A-M., McPhail, S.M., **Francis-Coad, J.,** Waldron, N., Etherton-Beer, C., Flicker, L., Ingram, K., & Haines, T.P. *Educating older patients to engage in falls prevention strategies while in hospital: Mutual understanding is required.* Australian Physiotherapy Association National Conference 2015, Gold Coast, QLD, 3-6 October 2015. Abstract retrieved from:  
<http://physiotherapy.asn.au/conference>

**Francis-Coad, J.,** Etherton-Beer, C., & Hill, A-M. *Can a community of practice (CoP) measure falls prevention activity and identify gaps in practice?* GrassRoots falls festival: A Multidisciplinary Falls Management Conference, Perth, Australia 19-20 February 2015

### *Conference Posters*

**Francis-Coad, J.,** Etherton-Beer, C., Bulsara, C., Blackburn, N., Chivers, P., & Hill, A-M. *What worked translating evidence into practice: A mixed methods evaluation of the impact of a falls prevention community of practice.* Poster presented at the 7<sup>th</sup> Biennial Australian and New Zealand Falls Prevention Conference, Melbourne, Australia, 27-29 November 2016

Hang, J., **Francis-Coad, J.,** Burro, B., & Hill, A-M. *What care staff think about falls prevention: A pilot survey.* Poster presented at the 48<sup>th</sup> Annual National Conference of the Australasian Association of Gerontology, Alice Springs, Australia, 4 - 6 November 2015

## **Awards**

**Francis-Coad, J.** (2016). Winner WA Health FutureHealth Research Travel Fellowship (**\$5000**) – To undertake a collaborative research project with Swansea University, Wales evaluating residents’ knowledge, motivation and perceptions about falls and falls prevention in residential and care home settings (October 2016).

**Francis-Coad, J.** (2014). Nominee for the Journal of Physical Therapy Education’s **Stanford Award** for the research paper containing the most influential educational ideas.

**Francis-Coad, J.** (2013). Awarded PhD stipend (**\$90,000**) as part of the Collaborative Research Networks (CRN) program. The University of Notre Dame Australia has been awarded \$5.96 million over the period 2013-2017 from the Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education to build collaborative research activity.

## **Research Supervision**

Hang, J. (2014-2015). Evaluation of Care staff knowledge, motivation and perceptions about falls prevention in a residential aged care setting. Supervisors: Anne-Marie Hill, **Jacqueline Francis-Coad** and Bianca Burro. Awarded first class honours.

## Statement of Contribution by Others

### Contributions to Jointly Authored Works

Signed statements of consent for inclusion of jointly authored works in this thesis were obtained from all co-authors (see Appendix A).

**Francis-Coad, J.,** Etherton-Beer, C., Naseri, C., & Hill, A-M. (2017). The effect of complex falls prevention interventions on falls in residential aged care settings: A systematic review protocol. *JBI Database of Systematic Reviews and Implementation Reports*, 15(2), 236-244. doi: 10.11124/JBISRIR-2016-002938

JFC, AMH and CEB, were principal contributors to conceptualisation of the systematic review design and protocol manuscript. The drafting of the manuscript was led by JFC, with all authors contributing to critical revision of the manuscript.

**Francis-Coad, J.,** Etherton-Beer, C., Bulsara, C., Nobre, D., & Hill, A-M. (2015). Investigating the impact of a falls prevention community of practice in a residential aged-care setting: A mixed methods study protocol. *Journal of Advanced Nursing*, 71(12), 2977-2986. doi:10.1111/jan.12725

JFC, AMH and CEB, were principal contributors to conceptualisation of the study design and protocol manuscript. AMH is the chief investigator of the funding awarded for this research activity. JFC and AMH were responsible for the design of the survey. CB provided guidance in qualitative methodology and DN in planning study data collection. The drafting of the manuscript was led by JFC, with contribution from AMH and all authors contributed to critical revision and approved the final manuscript for submission.

**Francis-Coad, J.,** Etherton-Beer, C., Bulsara, C., Nobre, D., & Hill, A-M. (2016). Can a web-based community of practice be established and operated to lead falls prevention activity in residential care? *Geriatric Nursing*, Advance on line publication. <http://dx.doi.org/10.1016/j.gerinurse.2016.09.001>



JFC, AMH and CEB, were principally responsible for Study 1 conception and design. CB provided guidance in qualitative methodology and DN in planning study data collection. The interpretation of data, analysis and drafting of the manuscript was led by JFC with contributions from AMH, with all authors contributing to critical revision.

**Francis-Coad, J.**, Etherton-Ber, C., Bulsara, C., Nobre, D., & Hill, A.-M. (2016).

Using a community of practice to evaluate falls prevention activity in a residential aged care organisation: A clinical audit. *Australian Health Review*, 41(1), 13-18. doi:10.1071/AH15189

JFC, AMH and CEB conceptualised and contributed to all aspects of Study 2. DN co-ordinated data collection and CB provided guidance in qualitative methodology. The drafting of the manuscript was led by JFC with contributions from AMH and all authors contributed to critical revision.

**Francis-Coad, J.**, Etherton-Ber, C., Bulsara, C., Blackburn, N., Chivers, P., & Hill, A-M. What worked translating evidence into practice: A realist evaluation of the impact of a falls prevention community of practice. (Ref. No.: BHSR-D-16-00388. Under peer review at journal)

JFC, AMH and CEB conceptualised and contributed to all aspects of Study 3. JFC and AMH were responsible for the design of the surveys. JFC wrote the first draft of the manuscript, CB contributed to qualitative methods, PC to statistical support and NB to data collection. All authors contributed to manuscript appraisal, revision and editing.

**Francis-Coad J.**, Haines T., Etherton-Ber C., Nobre D., & Hill A-M. (in press).

Evaluating the impact of operating a falls prevention community of practice on falls in a residential aged care setting. *Journal of Clinical Gerontology and Geriatrics*

JFC, AMH and CEB conceptualised and contributed to all aspects of Study 4. DN co-ordinated data collection. The interpretation of data and analysis was undertaken by AMH, TH and JFC, with all authors contributing to critical revision of the manuscript.

Hang, J., **Francis-Coad, J.**, Burro, B., Nobre, D., & Hill, A-M. (2016). Assessing knowledge, motivation and perceptions about falls prevention among care staff in a residential aged care setting. *Geriatric Nursing*, 37, 464-469. doi:10.1016/j.gerinurse.2016.06.019

JFC and AMH conceptualised and JH, AMH, JFC and BB contributed to all aspects of this manuscript. AMH was principal supervisor, with JFC and BB as co-supervisors for JH's Honours project and dissertation. AMH, JFC, JH and BB were responsible for design of the survey, DN assisted with planning data collection. JH wrote the first draft and all authors contributed to manuscript appraisal, revision and editing.

### **Contributions to the Thesis as a Whole**

Associate Professor Anne-Marie Hill was the principal supervisor who conceptualised the research and was the principal investigator on the successful grant application to the Collaborative Research Network awarded to The University of Notre Dame Australia (Fremantle). Associate Professor Anne-Marie Hill provided major guidance and assistance with the drafting and editing of all manuscripts and the thesis, scrutinising iterative drafts of the chapters and the final document.

Professor Christopher Etherton-Ber was the associate supervisor who brought his extensive expertise on conducting research in RAC settings. He also provided guidance and assistance with the design, structure, data analysis and editing of all manuscripts and the thesis.

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*“Stand on the shoulders of giants”*

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## List of Abbreviations

<b>A&amp;F</b>	Audit and Feedback
<b>BLUP</b>	Best Linear Unbiased Predictor
<b>CEO</b>	Chief Executive Officer
<b>CI</b>	Confidence Interval
<b>CMO</b>	Context-Mechanism-Outcome
<b>CCMO</b>	Conjectured Context-Mechanism-Outcome
<b>COM-B</b>	Capability, Opportunity, Motivation – Behaviour change
<b>CoP</b>	Community of Practice
<b>I<sup>2</sup></b>	I squared statistic
<b>ICT</b>	Information and Communication Technology
<b>OBD</b>	Occupied Bed Days
<b>OR</b>	Odds Ratio
<b>RAC</b>	Residential Aged Care
<b>RCT</b>	Randomised Controlled Trial
<b>RR</b>	Risk Ratio
<b>SNA</b>	Social Network Analysis