Metro South Palliative Care Service

Queensland Government

Metro South Health

phn BRISBANE SOUTH
An Australian Government Initiative

Phase 3: Improving End-of-Life Care for Residential Aged Care Facility Residents Initiative

Final Report

May 2020

Suggested citation:

Taylen-Smith M, Reymond L, Charles M, Sansome X. *Phase 3: Improving End-of-Life Care for Residential Aged Care Facility Residents Initiative: Final Report.* Submitted to Brisbane South PHN. Brisbane: Brisbane South Palliative Care Collaborative: 2020.

Table of Contents

Abbreviations and explanations

ACP	Advance Care Planning
BSPCC	Brisbane South Palliative Care Collaborative
BSPHN	Brisbane South Primary Health Network
EoI	Expression of Interest
GP	General Practitioner
LoS	Length of Stay
MoU	Memorandum of Understanding
MSH	Metro South Health
MSPCS	Metro South Palliative Care Service
RACF	Residential aged care facility
SDM	Substitute decision maker
SoC	Statement of Choices
SPCS	Specialist palliative care service
SPSS	Statistical Package for the Social Science

Executive Summary

1.0 Context

Both Brisbane South Primary Health Network (BSPHN) and Metro South Palliative Care Service (MSPCS) recognise that more needs to be done to enhance end-of-life care within residential aged care facilities (RACFs). Over the past four years BSPHN and MSH have collaborated with RACFs in the BSPHN region with a goal to improving residents' end-of-life care[1,2]. This document reports on a third collaborative initiative – Phase 3 - between BSPHN and MSPCS and volunteering RACFs. BSPHN commissioned MSPCS with funding of $250,000, over a period of eighteen months, to develop, implement and evaluate the Phase 3 initiative.

Primarily intended to improve end-of-life care outcomes for residents of RACFs, the initiative was based upon an end-of-life model of care which:

- Encourages RACFs to further establish baseline organisational policies and structures concerning end-of-life care
- Implements and evaluates evidence-based care practices using a mentorship programme that:
    - Incorporates the MSH End-of-Life Care Framework (see Figure 1) already used in other care environments in MSH[3]. This Framework is based upon the Australian Commission on Safety and Quality in Health Care, National Consensus Statement: *essential elements for safe and high-quality end-of-life care* (2015)[4] and aligns with the new Aged Care Quality Standards (2019)[5]. The Framework incorporates three key clinical processes considered important for delivery of quality end-of-life care: Advance Care Planning (ACP), palliative care case conferencing and use of terminal care management plans
    - Improves palliative care knowledge, skills, confidence and attitudes of RACF nursing staff
    - Integrates end-of-life care resources into daily practice using face-to-face mentoring
- Facilitates sustainable quality end-of-life resident care using continuous quality improvement activities based upon after death audits.

The expected benefits of the initiative were that participating RACFs would increase their capacity to provide quality end-of-life care ensuring resident-centred care, at the right time and in the environment of the resident's choice.

2.0 Methods

A Steering Committee, comprised of relevant stakeholders, was established to guide strategies to achieve initiative objectives: to provide support and resources to enhance RACF best-practice end-of-life care and to improve resident end-of-life outcomes using those best practices.

Strategies included academic detailing for managers of RACFs, production of resources including adaptable templates for policy and procedures, ten electronic educational modules for nurses, brochures for residents/families, delivery of two RACF End-of-Life Care Conferences, delivery of a three-day clinical mentorship programme for nurses in each participating RACF and importantly implementation of a bespoke quality improvement After Death Audit.

Evaluation of outcomes was based upon a Programme Logic Model approach which constitutes a systematic and visual way to present and share understanding of the relationships between project activities and intended outcomes. Intended outcomes included improved capacity of RACFs to provide quality end-of-life care, improved capacity of RACF nurses to provide quality end-of-life care and improved resident end-of-life outcomes.

Essentially, evaluation rested upon comparison of subjective and objective measures of performance pre and post-initiative intervention. Data were collected from a range of sources:

1) Organisational policies and structures audits (Attachments 9 & 10)
2) Nurses' education surveys (Attachments 12 & 13)
3) After Death Audits (Attachments 17 & 18)
4) Residents' and/or their substitute decision-makers' satisfaction and experience with ACP discussion surveys (Attachments 15 & 16)
5) Mentorship programme attendance
6) Conference participant attendance and feedback sheets
7) Website metrics
8) Queensland Health Office of Advance Care Planning reports of ACP documents uploaded

Ethics approvals were obtained from three different human research ethics committees. Ninety RACFs were invited to take part in the initiative, 30 signed non-binding memorandums of understanding and 28 completed the initiative.

3.0 Findings and outcomes evaluation

Intended outcome: Improved capacity of RACFs to provide quality end-of-life care

Post-intervention all 28 volunteering RACFs (about 30% of the total number of RACFs in MSH) significantly enhanced aspects of their facility-level policy/procedures and guidelines regarding end-of-life care, particularly the use of continuous quality improvement activities for key end-of-life care processes and delivery of facility-level education.

Intended outcome: Improved capacity of RACF nurses to provide quality end-of-life care

Subjective post-intervention measures of nurses' knowledge and skills indicated significant improvements in their capacity to provide elements of quality end-of-life care including communications with residents and their families, provision of symptom management and use of terminal care plans. There was no significant difference in their perceived confidence to deliver palliative care. Their attitudes towards palliative care, already very positive, did not improve.

Subjective findings of increased capacity were supported by objective comparisons of pre and post-After Death Audit measures. Significantly more residents had had a palliative care case conference. Nurses were significantly more able to recognise when a resident was approaching death, significantly more residents had a preferred place of death documented and there were significant improvements in documented evidence that nurses had considered residents' preferences in the formulation of care plans.

Intended outcome: Improved resident end-of-life outcomes

Importantly, post-intervention, there was significantly improved concordance between resident preferred and actual place of death. After Death Audit data also revealed significant reductions in the proportion of residents transferred to hospital in their last week of life together with decreased resident/ family requests for hospital transfer. For the fewer number of residents transferred, the average length of hospital stay was 4.83 days.

Data collected from residents/family regarding satisfaction with their experience of ACP discussions were limited, only eight of 405 residents/families completed surveys. All eight agreed that it was fitting to hear about ACP in the RACF and that they were satisfied with their experience of ACP discussions.

4.0 Discussion

This third initiative highlights benefits consequent to the collaboration between BSPHN, MSPCS and volunteering RACFs in achieving improved end-of-life care outcomes for residents of RACFs by facilitating quality end-of-life care practices. Effectively the initiative has allowed significantly more residents to receive care in accordance with their wishes and to avoid unnecessary hospitalisations at end of life.

The initiative focussed on capacity-building of participating RACFs based upon the three key clinical processes contained within the MSH End-of-Life Care Framework and implemented using a multi-modal approach inclusive of development of resources targeted to managers and clinical staff, delivery of educational events and a flexible in-facility staff mentorship programme. The elements were interdependent and so it is difficult to quantify the contribution of individual components. However, the mentorship programme was possibly the major influence on outcomes as many facility-level pre-intervention ratings were already high, with few post-intervention significant improvements.

Intended outcomes

One transformative clinical success of this third initiative was an apparent increase in RACF nurses' ability to recognise impending death and to translate residents' documented care preferences into clinical care during the terminal phase. This is evidenced by a significant decrease in the number of resident deaths that nurses classified as unexpected in post-intervention After Death Audits along with significant increases in nurses' knowledge to apply criteria for commencing a terminal end-of-life care pathway and in skills for providing evidence-based terminal care and finally, by documented evidence that the nurses considered the residents' preferences for end-of-life care in their delivered care. The importance of this success should not be underrated as it is this that allows nurses to competently and compassionately care for residents in their RACF as they die and to avoid distressing, unwanted and inappropriate transfers to hospital. Decreased resident/family requests for transfer to hospital, suggest that residents/families were more secure in the care provided by RACF staff. Within the lesser number of residents who were transferred to hospital, symptom management was the principal reason for transfer, indicating that staff were aware of the bounds of their capabilities and were operating within their scope of practice. Safety is an important component of quality care.

Continuous quality assurance processes within modern healthcare systems are increasingly aimed at achieving improved resident outcomes and resident reported experience measures[6]. Arguably improved resident end-of-life care outcomes is the most important intended outcome of this initiative.

While in Australia there are no nationally agreed quality clinical indicators for palliative care, there is consensus that care delivered in the environment of the person's choice is a hallmark of best-practice palliative care[7]. For the first time, since the collaboration between BSPHN, MSH and RACFs began, this outcome has been achieved. Not only were more residents' preferred place of death known and considered but significantly more residents were able to be cared for and die in their place of choice. The majority of residents wanted to die in their facility. It is possible that residents consider their RACF their home and that, like the majority of Australians, they too wish to die at home[7,8].

Phase 3 initiative limitations

There were important limitations to this Phase 3 initiative. Volunteering RACFs are likely to have had a high motivation to improve end-of-life care, thus perhaps reducing the generalisability of the findings to other RACFs. The initiative had a short timeframe, limiting sustainability evaluation. No attempt was made to calculate the cost-effectiveness of the intervention. Regardless, it appears the initiative constitutes high-value care, as each terminal-care hospital avoidance appears to have saved between four to five acute bed days.

Summary

Overall, the initiative can be regarded as a new collaborative model of care, based upon mentorship and continuous quality improvement activities, that can improve resident outcomes as well as staff and resident experiences in receiving and/or providing care. It is likely to impact positively on the hospital acute care sector.

The scalability and sustainability of the initiative requires further exploration.

5.0 Recommendations

On-going collaboration between BSPHN, MSH and volunteering RACFs can led to a sustainable model of quality end-of-life care that improves resident outcomes and experiences.

Recommendations based on findings from this Phase 3 initiative include:

- Continued pursuit of the first recommendation from the Phase 2 initiative: that BSPHN and MSPCS structure interventions that enhance the translation of best end-of-life practice into clinical care to promote sustainable high-quality end-of-life care for residents of RACFs and their significant others. This recommendation is in direct alignment with the jointly developed *Brisbane South Older Peoples' Health and Wellness Strategy, 2019-2024*[9] and the MSH *What Matters to Bill and Betty Frail Older Person's* project, 2019[10]. It reflects the recommendations of the Queensland Parliamentary Inquiry into Aged Care, End of Life and Palliative Care and Voluntary Assisted Dying (2020)[11] and the Royal Commission into Aged Care Quality and Safety (2019)[12].

- BSPHN and MSH jointly explore sources of recurrent funding to appoint two Specialist Palliative Care Clinical Nurse Consultants to embed the nurse mentorship programme introduced in this initiative into all willing RACFs within the MSH area. Without on-going modelling of best palliative care practice any gains are likely to be lost in a shifting RACF workforce

- BSPHN and MSH explore RACF resident-preferred outcomes at end of life and increase documentation of advance care plans that are easily accessible by treating clinicians

- BSPHN commission an in-depth study across RACFs to:
    - Implement palliative care case conferences at appropriate times and

    - increase the utilisation of terminal care plans and processes therein

- MSPCS continue to maintain and expand the www.PallConsult.com.au website.

1.0 Introduction

1.1 National Context and Background

Care demands within Australia's Residential Aged Care Facilities (RACFs) are set to double by 2040[10]. Older Australians entering RACFs are increasingly experiencing unpredictable prognostic trajectories characterised by periods of disability, frailty and illness[13,14]. With 60,000 older Australians dying in RACFs annually, there is agreement across Australian government policy makers, peak professional bodies and carers that the provision of end-of-life care should be core business[12,14,15,16]. Yet aged care services struggle to provide the appropriate resident-centred care, focused on individuals' goals and quality of life during residents' end-of-life journeys[11,12,15].

The 2018 Productivity Commission report[17] on end-of-life care states that improving the effectiveness of end-of-life care service provision in RACFs should be a key focus for further reform, as the care residents currently receive during their end-of-life journey is often suboptimal. The Commission recommends putting users' needs and choices at the heart of end-of-life care services. This report prompted system recognition of the importance of quality end-of-life care in RACFs including the provision of palliative care. Palliative care aims to reduce suffering through the early identification, assessment and treatment of physical, psychosocial and spiritual needs, as well as addressing families need for support. Ultimately it is such care that supports a good life and death for residents[14].

Unfortunately, present data concerning end-of-life care of Australians, particularly those within RACFs, are fragmented and incomplete. According to the Royal Commission into Aged Care Quality and Safety Interim Report "there are no measures available to quantify the extent of the substandard care"[12]. Consequently, it is challenging to know how best to support residents and the RACFs who care for them. Improved understanding of current practices in end-of-life resident care within RACFs will assist with development and implementation of sustainable models of care to meet the expected increase in care demand.

1.2 Care Delivery

Across Australia, care of dying RACF residents is mostly delivered by General Practitioners (GPs) and internal RACF staff augmented with some consultative input from Specialist Palliative Care Services (SPCSs), though specialist palliative care is not a standard component of service delivery in RACFs. Issues associated with GPs servicing RACFs include workforce shortages, time required to care for the RACF population and poor remuneration for RACF delivered services[14,15,16]. The 2017 Aged Care Survey report by the Australian Medical Association (AMA) found that one third of GP respondents intended, in the next two years, to either not see new RACF patients, decrease their patient numbers or stop visiting RACFs entirely[18]. RACF staff report that the current fee for service model of care is contributing to difficulty accessing GPs, suboptimal quality of and access to care and rising rates of acute service facility usage[19]. Either new initiatives to maintain and expand GPs' presence in RACFs, or new models of care that meet the medical and psychosocial requirements of RACF residents, are needed to ensure optimal resident care.

Nurses in RACFs are aware that their workforce is struggling to provide quality care[17,20]. Complex care demands, high task-orientated workloads, lower professional and community status and poor pay parity have all contributed to low recruitment and greater attrition of qualified nursing staff in RACFs[20]. Further, most RACFs are private or not-for-profit entities and exhibit tensions between provision of quality care, resource utilisation and cost minimisation[14]. RACF nurses are increasingly expressing dismay at the diminishing quality of care for residents and fear that without adequate support, staff will continue to experience increasing rates of anxiety, frustration and burnout[17,20]. This situation is complicated by an increase in international nursing graduates seeking employment in RACFs, who present with unique cultural, professional and educational needs[17,21]. Meeting future demands for safe and effective end-of-life care in RACFs depends upon identifying and supporting the needs of this entire workforce as it is apparent that the intrinsic rewards of the caring role are what attract nurses to the aged care specialty, irrespective of role or experience. Retaining altruistically motivated nurses requires a supportive work environment that values and nurtures them[1].

Specialist palliative care services (SPCSs) are well placed to support RACF staff to provide the quality of care required at end-of-life in the residents' homes, though they are not resourced to do so. Having access to a SPCS has been shown in pilot studies to enable RACF staff to improve their skills and confidence to provide palliative care and to refer to SPCS when the needs of residents become complex or challenging[1,2]. Education and support provided by local SPCSs is shown to empower nursing staff and may reduce staff turnover and keep skilled palliative nursing staff in the RACFs where they are desperately needed. A collaborative working relationship between RACFs and their local SPCS will benefit the residents, staff and the broader community.

In summary, given the above, new models of end-of-life care in RACFs are required, models that are resident-centred and evidence-based, where professional care providers are available, valued and supported to provide quality care for a growing and vulnerable population.

1.3 Local Context and the Phase 3 Intervention

Both Brisbane South PHN (BSPHN) and Metro South Palliative Care Service (MSPCS) recognise that more needs to be done to progress end-of-life care for RACF residents. Over the past four years BSPHN and MSH have collaborated with RACFs in the BSPHN region with a goal to improve end-of-life care for residents by exploring the development, implementation and impact of evidence-based interventions on end-of-life care[1,2]. This document reports on the third collaborative initiative between BSPHN and MSPCS and volunteering RACFs. This Phase 3 initiative directly builds upon the five recommendations of the Phase 2 initiative report.

The Phase 3 initiative, primarily intended to improve end-of-life care outcomes for residents of RACFs, is based upon an end-of-life model of care that:

- Encourages RACFs to further establish baseline organisational policies and structures concerning end-of-life care
- Implements and evaluates evidence-based practices in end-of-life care using a mentorship programme that:
    - Incorporates the MSH End-of-Life Care Framework (see Figure 1) already used in other care environments in MSH. This Framework is based upon the Australian Commission on Safety and Quality in Health Care, National Consensus Statement: *essential elements for safe and high-quality end-of-life care* (2015)[4] and aligns with the new Aged Care Standards (2019)[5]. The Framework incorporates three key clinical processes considered

    important for delivery of quality end-of-life care: Advance Care Planning (ACP), palliative care case conferencing and use of terminal care management plans
  - Improves palliative care knowledge, skills, confidence and attitudes of RACF nursing staff
  - Integrates end-of-life care resources into routine RACF practice
- Facilitates sustainable quality end-of-life resident care using continuous quality improvement activities based upon after death audits.

Phase 3 initiative activities were designed to target both facility managers and clinical providers of care as both are essential to the successful and sustainable implementation of clinical change[22].

Phase 3: Facility Manager activities

Resources, with reference to the new Aged Care Quality Standards[23], and academic detailing for facility managers, were developed and include:

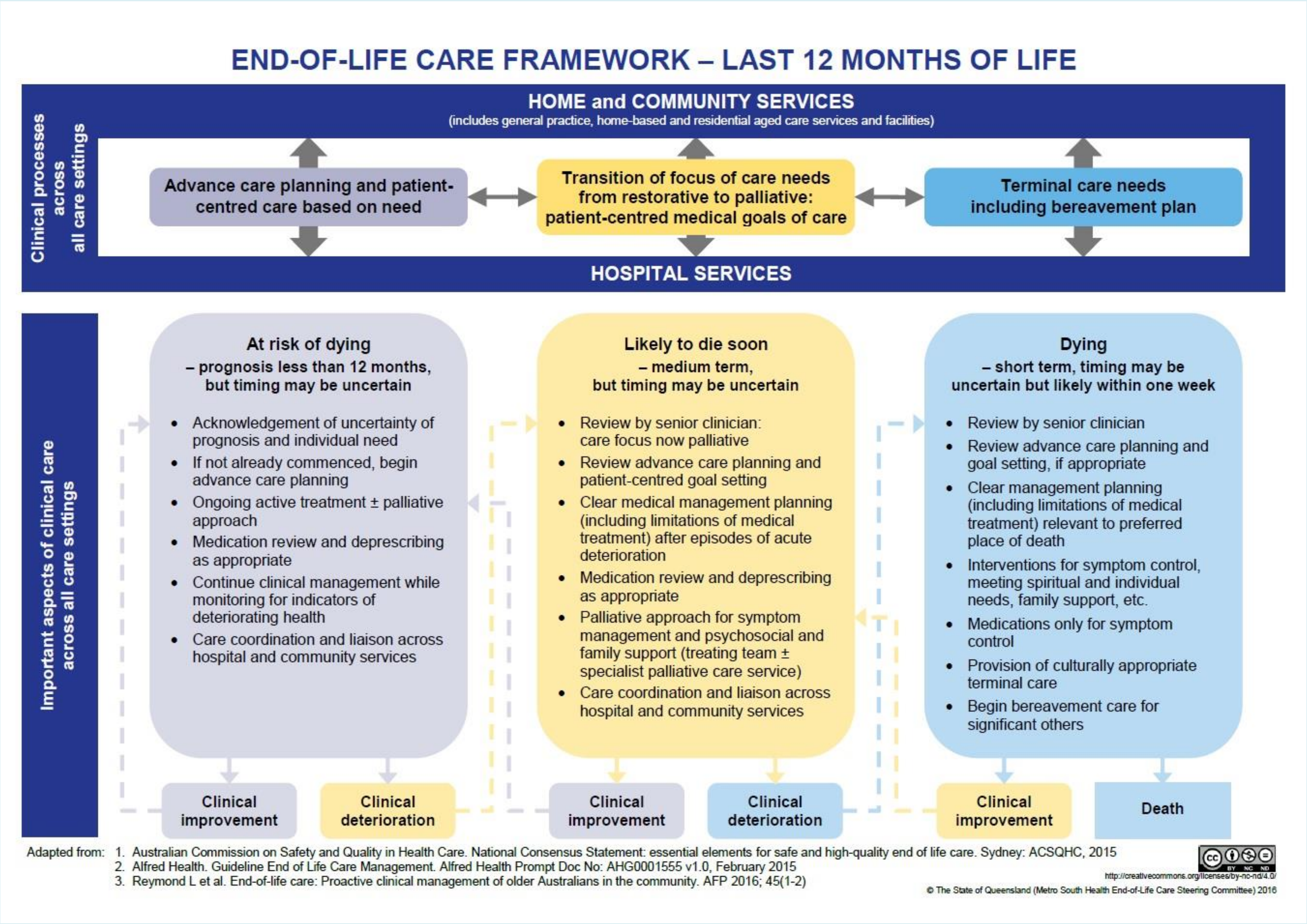
- Templates and example end-of-life care policy and procedure documents for facility managers to modify and embed within their RACF
- Literature covering end-of-life care and ACP topics for residents, interested family and/or friends and external providers
- Instructions to facilitate review and upload of residents' ACP documents to a central access point (The ACP Tracker within Queensland Health Viewer)
- Quality assurance processes based on the establishment of continuous quality improvement cycles informed by use of a bespoke after death audit
- Example education calendars and training policy and procedures including end-of-life care and ACP education available for all facility staff

Phase 3: Clinical provider activities

Activities developed for clinical providers of care include:

- Two one-day conferences with multiple speakers and interactive components on quality end-of-life care to provide attending nurses opportunity to consolidate their learning and network with other RACF nurses and their local SPCS.
- A mentorship programme for RACF nurses, conducted by specialist palliative care nurses from MSPCS. The mentoring process incorporated a 3-day programme of relevant education, training and professional development activities, as well as on-going opportunistic clinical discussions with specialist palliative care nurses
- Online end-of-life care education modules focussing on aspects of quality end-of-life care
- ACP education modules aimed at educating facility nursing staff about ACP, relevant Queensland law, standardised documentation and best-practice principles for introducing ACP into RACFs
- Use of a bespoke after death audit to monitor continuous quality improvements in end-of-life care.

Figure 1: Diagrammatic representation of the MSH End-of-Life Care Framework - Last 12 Months of Life



END-OF-LIFE CARE FRAMEWORK – LAST 12 MONTHS OF LIFE

At risk of dying
– prognosis less than 12 months, but timing may be uncertain

- Acknowledgement of uncertainty of prognosis and individual need
- If not already commenced, begin advance care planning
- Ongoing active treatment ± palliative approach
- Medication review and deprescribing as appropriate
- Continue clinical management while monitoring for indicators of deteriorating health
- Care coordination and liaison across hospital and community services

Likely to die soon
– medium term, but timing may be uncertain

- Review by senior clinician: care focus now palliative
- Review advance care planning and patient-centred goal setting
- Clear medical management planning (including limitations of medical treatment) after episodes of acute deterioration
- Medication review and deprescribing as appropriate
- Palliative approach for symptom management and psychosocial and family support (treating team ± specialist palliative care service)
- Care coordination and liaison across hospital and community services

Dying
– short term, timing may be uncertain but likely within one week

- Review by senior clinician
- Review advance care planning and goal setting, if appropriate
- Clear management planning (including limitations of medical treatment) relevant to preferred place of death
- Interventions for symptom control, meeting spiritual and individual needs, family support, etc.
- Medications only for symptom control
- Provision of culturally appropriate terminal care
- Begin bereavement care for significant others

Adapted from:
1. Australian Commission on Safety and Quality in Health Care. National Consensus Statement: essential elements for safe and high-quality end of life care. Sydney: ACSQHC, 2015
2. Alfred Health. Guideline End of Life Care Management. Alfred Health Prompt Doc No: AHG0001555 v1.0, February 2015
3. Reymond L et al. End-of-life care: Proactive clinical management of older Australians in the community. AFP 2016; 45(1-2)

1.4 Aim, Objectives and Benefits

Overall aim of Initiative

The overall aim of the initiative was to support volunteering RACFs to embed best-practice end-of-life care in RACFs through the development, implementation and evaluation of an adaptable evidence-based model for delivery of quality end-of-life care. The initiative consolidates and builds upon the two earlier collaborations between BSPHN, MSH and RACFs.

Objectives

The primary objectives of this initiative were to:

1. Provide support and resources to enhance adoption of best practice end-of-life care in RACFs.
2. Improve resident end-of-life outcomes by further developing, promoting and evaluating advance care planning adoption, and other end-of-life interventions, across registered RACFs within BSPHN catchment area

Benefits of Initiative

The expected benefits are:

1. Increased capacity of participating RACFs and staff to provide quality end-of-life care
2. RACF residents receive resident-centred care, at the right time in their environment of choice.

2.0 Methodology

Table 1 lists a summary of the activities and tasks undertaken as part of the Phase 3 initiative. The timeline of the initiative is presented in Attachment 1.

Table 1: Summary of initiative components and associated activities

Initiative Component	Activities
Governance	• Project Schedule signed 02/11/2018 • Cost centre created • Steering Committee and terms of reference established • Project team and meeting dates established • Staff recruited
Design of the multicomponent initiative	• Programme Logic plan development • Development of initiative strategies, including academic detailing, mentoring, resource production, education and events, overseen by the Steering Committee • Initiative Management Plan endorsed by Steering Committee, 29/10/2018
Recruitment of RACFs	• Expression of Interest (EoI) • Memorandum of Understanding (MoU)
Initial engagement and baseline data collection from participants and clinical notes	Pre-implementation meetings and baseline data collection from: • RACF managers • RACF nurses • After Death Audits of RACF decedents (prior to 7/2/2019)

Initiative Component	Activities
Development of resources, delivery of academic detailing, education and mentoring	• Review of Example ACP policy and procedure document • Review and update of website www.PallConsult.com.au • Online development of four end-of-life care and six ACP modules • Development of RACF End-of-Life Conference materials • Mentorship programme development for RACF staff and resource toolkit development • Production of information sheets for residents, families and/or substitute decision maker • Development of pre (prior to 7/2/2019) and post (7/2/2019 – 31/10/2019) -implementation After Death Audit schedule and data collection process for RACF decedents • Delivery of 2 one-day conferences, 3-day flexibly delivered, in-facility mentorship programme and personalised email delivery of the ACP and end-of-life care modules to all interested facility staff.
Pre-implementation and Implementation of initiative	• Pre-implementation (base-line clinical end-of-life care) data collection commenced 5/11/18 • Implementation commenced 7/2/2019
Evaluation	• Pre and post implementation data collection and analysis: • Evaluation data collection completed 31/10/19 • Data collation and analysis commenced 1/11/19
Final project report	• Final project report completed and submitted June 2020

2.1 Governance

Steering Committee

The primary role of the Steering Committee was for members to guide the achievement of the Phase 3 initiative intended outcomes and to identify potential risks to the initiative by utilising their experience, knowledge and perspectives.

The members of the Steering Committee included representatives from the initiative team, BSPHN, Brisbane South Palliative Care Collaborative (BSPCC) and the aged care sector.

The Terms of Reference (including list of members) for the Steering Committee are in Attachment 2.

Initiative team

The initiative team met regularly to oversee operations. The team comprised of the Initiative Director, Initiative Manager, Manager of BSPCC, Clinical Nurse Consultant and the administrative assistant.

Staff

An initiative manager, clinical nurse consultant and administrative assistant were recruited to conduct the initiative.

2.2 Design of the Phase 3 initiative

A Programme Logic Approach was adopted to guide design and development of the Phase 3 initiative (see Figure 2).

Initiative development aligned with national quality standards and documents and drew upon evidence and consensus-based best practice including:

- The new Aged Care Quality Standards (2019)[4] which place the rights of older people at the centre of care. These standards reflect current evidence on how best to deliver quality care and services for older Australians. They reflect a demand on improving end-of-life care for residents by identifying and addressing a resident's goals and preferences for end of life and place expectations on the facility to maximise the residents' comfort and maintain their dignity during end of life by having access to an appropriately skilled workforce
- The National Palliative Care Standards (2018)[24] are an essential best-practice reference as they aim to ensure that all people, their family and carers receive access to the highest quality of care as they approach end of life
- Quality Use of Medicines (QUM) documents utilised to guide decision making around suitable, safe and effective use of medicines to allow residents timely access to appropriate medications that support the comfort of those approaching end of life
- A review of relevant evidence-based end-of-life care literature that informed the RACF manager academic detailing and nurse clinical mentoring programme
- The MSH End-of-Life Care Framework[3] that provides a clinical framework for appropriate end-of-life care by utilising quality systems that support three key end-of-life clinical processes
- MSPCS experience with local RACFs. MSPCS has had a long relationship with primary care to support quality end-of-life care delivery since 2008 with the rollout of the national project for the Palliative Approach Toolkit.
- Findings and recommendations reported in the February 2019 Phase 2 Initiative Final Report *"Improving end-of-life care for residential aged care residents*"[2] produced by BSPCC for the BSPHN.
- Facility baseline system and clinical data was collected and assessed to ensure that the initiative met the needs of the intended populations.

2.3 Phase 3: Initiative components

The broad initiative components are listed in Table 1.

Temporal rollout of the initiative components included:

1. Recruitment of RACFs and RACF Manager academic detailing
2. Initial engagement and data collection from participants and decedent After Death Audits
3. Development and delivery of resources, education mentoring and events
4. Evaluation

2.3.1 Recruitment of RACFs and RACF Manager academic detailing

Facility Expression of interest (EoI) and memorandum of understanding (MoU)

An information pack concerning the initiative was posted to all RACFs (90) in the BSPHN area that met eligibility requirements. Those requirements were that the facility provides high-care beds, has twenty-four-hour registered nurse support and internet access for the nursing staff. The pack included:

- Letter of invitation (Attachment 3)
- EoI application form (Attachment 4)
- Information sheet for managers (Attachment 5)
- Factsheet about the initiative (Attachment 6)
- Draft copy of non-legally binding memorandum of understanding (MoU) that managers would be expected to sign (Attachment 7)
- Staff contact details form (Attachment 8)

The initiative manager then met face-to-face with all the managers of interested RACFs and, if willing, a Memorandum of Understanding (MoU) was completed. This was followed by the initiative manager providing one-on-one academic detailing for facility managers regarding the multicomponent intervention and implementation of system level requirements to provide quality end-of-life care.

A convenience maximum target number of participating RACFs was set at 30.

2.3.2 Initial engagement and data collection from participants and decedent After Death Audits

Data was collected from:

a. Facility managers

During the initial face-to-face meeting with facility mangers a measure of baseline facility support to deliver end-of-life care was achieved when managers completed a pre-implementation organisational policies and structures audit (Attachment 9). At the end of the initiative, managers were emailed a second (post-implementation) organisational policies and structures audit (Attachment 10). The surveys were coded and re-identifiable to facility only.

b. RACF nursing staff

Nursing intervention activities commenced on February 7, 2019 with a one-day end-of-life care conference attended by nurses from participating facilities nurses. Attendees completed a nurse information sheet (Attachment 11) and a pre-education survey (Attachment 12) to establish baseline clinical knowledge and practice. At the conclusion of the second conference in October 2019 nurses were given a post-implementation education survey (Attachment 13).

After the first conference, specialist palliative care nurses from MSPCS delivered a staggered rollout of the three-day mentorship programme, delivered flexibly in each RACF. Developed resources were made available to all participating facility staff during the intervention period, including on-line modules on ACP and end-of-life care topics; SPCS referral and support; communication and ACP skills; Office of Advance Care Planning (Office ACP) services, policy and procedure documents on ACP and symptom management guidelines for end-of-life care.

Following the mentoring, the initiative manager began collection of After Death Audits completed by RACF nurses for all residents who died during the intervention period.

During and subsequent to, the mentorship programme, RACF nursing staff were expected to approach residents (or, where relevant, substitute decision makers) as part of their clinical care to discuss ACP. The number of ACP documents resulting from such conversations and uploaded to The Viewer were collected each month and compared with document numbers uploaded from the same facilities in the corresponding period from the previous year.

c. Resident and substitute decision maker recruitment for ACP feedback

Residents or substitute decision maker(s) who had participated in ACP were approached by a facility nurse to ask if they would be interested in taking part in a survey regarding their experience of, and satisfaction with, their ACP discussion. If the resident or substitute decision maker(s) indicated their interest an appointment time was organised for the initiative manager to attend the facility and explain the survey. At that appointment a participant information and consent form (Attachment 14) concerning the survey was provided, and time allocated to ask questions of the initiative manager. If agreeable, the participant was given a copy of the survey (Attachment 15 or Attachment 16) and asked to complete it, seal it in the attached envelope and return the envelope to the initiative manager.

d. Decedent After Death Audits

Baseline clinical end-of-life care practice was obtained prior to implementation when nurses completed up to five After Death Audits (Attachment 17) for residents who had lived in their respective facilities. Post-implementation RACF nurses completed an After Death Audit (Attachment 18) for all decedents at the end of every month from February 2019 to October 2019. Data collected included information about the completion of ACP documentation, palliative care case conferencing activity, use of end-of-life care (terminal) pathways and admission to hospital in the last week of life.

Table 2 summarises intervention participants, the process of their recruitment, relevant data collection and associated documentation.

Table 2: List of participants, recruitment processes, data collection and documentation

	Participant	**Process and data collection**	**Documentation**
Intervention	RACF managers	End-of-life pack disseminated to all eligible facilities in the BSPHN catchment. Interested facilities contacted the initiative manager to discuss and consented using an MoU. Academic detailing and pre-intervention organisational and policies and structures audit completed. Post-intervention audit completed 12 months later	EoI pack documents include: • Invitation letter • Fact sheet • EoI form MoU documents include: • MoU • contact details form
	RACF nursing staff	A minimum of 2 nurses invited by their manager to participate. Participation involved: • pre and post intervention educational surveys completed;	Completion of the contact details form in the MoU pack

	Participant	Process and data collection	Documentation
		- baseline after death audits completed; attendance at conferences, mentoring programme; completion of after death audits for all residents who died during the implementation period.	
Evaluation	Residents and substitute decision makers	Residents and substitute decision makers involved in ACP conversations with staff invited by a RACF nurse to participate in a survey exploring their ACP experience. If interested they provided written consent to the initiative manager and completed a satisfaction survey	Information sheet and Completion of a consent form
	Decedents' After Death Audits	RACF nurses undertook audits of 5 consecutive deaths pre-intervention and all residents who died between Feb-Oct 2019	Pre-After Death Audit and post-intervention after-death audit

2.3.3 Development of Resources, Delivery of Education, Mentoring and Events

Resources, education, mentoring and events were developed for RACF staff. Elements included:

- An Example Policy and Procedure: Implementation of Advance Care Planning in Residential Aged Care Facilities (Attachment 19) was developed and reviewed for participating RACFs to use to either develop or review their own documentation to support implementation in their facility. Managers in RACFs could adapt the content of the example to meet their own identified and unique local needs.
- Two one-day conferences that specifically focussed on issues associated with end-of-life care in RACFs. Each conference included multiple speakers and concluded with a hypothetical case that encouraged interaction between conference participants and an expert panel. Participants and speakers had adequate time to network and consolidate earlier online learnings.
- Clinical mentorship included a 3-day programme of relevant education, training and professional development activities based upon the three key clinical processes of the MSH End-of-Life Care Framework. Mentoring was delivered with a broad topic for the day; an advance care planning day, an end-of-life care day and a sustainable practices day. These days included opportunistic clinical discussions with specialist palliative care nurses which were delivered flexibly dependent on the needs of each individual facility.
- Access to www.PallConsult.com.au that contains end-of-life care news updates and ten educational modules including:
  - ACP foundation modules: introducing ACP in RACFs; understanding ACP documents commonly used in Queensland and facilitating completion of the Statement of Choices (SoC) document.
  - ACP train-the-trainer modules: Cultural considerations for end-of-life care; how to have ACP discussions with RACF residents using the PREPARED framework[25] and implementing your knowledge of the SoC document.

- End-of-life care modules: nurturing resilience and fostering self-care as an aged care nurse; palliative care case conferencing in RACFs; principles of quality terminal care and end-of-life care in RACFs: pharmacological symptom management.

2.3.4 Evaluation

The primary purpose of the evaluation was to analyse objective measures of changes in intended outcomes (see Table 3) as a result of implementing the initiative compared with pre-intervention (baseline) measures.

A Programme Logic model of evaluation was chosen as this is well suited to evaluating health interventions that wish to focus on intended outcomes. A logic model is a systematic and visual way to present and share understanding of the relationships between project activities and the outcomes expected[26,27,28].

A logic model is the first step in evaluation (see Figure 2). The two boxes on the left of the diagram in the upper table represent project activities and participants. The two boxes on the right represent the intended outcomes of the project.

Please note that due to initiative time constraints, only short-term outcomes could be evaluated. The box at the bottom of Figure 2 presents a table showing the indicators for measuring initiative processes and the short- and long-term outcomes.

Figure 2: Initiative Programme Logic model

Activities	**Participants**	**Short term outcomes**	**Long-term outcomes**
Development of model Development of templates/policy/procedures Recruitment of RACFs and academic detailing for facility managers Development and delivery of educational and mentoring programme Development and implementation of After Death Audit for continuous quality improvement activities	RACFs RACF Nurses RACF residents and SDMs	**1.** Improved capacity of RACFs to provide quality end of life care: # Facilities have policies/procedures to implement quality end-of-life care # Facilities embed continuous quality improvement and education programs for end-of-life care **2.** Improved capacity of RACF nurses to provide quality end-of-life care: #Nurses exhibit improved knowledge, attitudes, skills and confidence in providing end-of-life care **3.** Improved RACF resident end-of-life outcomes: # Residents and their substitute decision maker are satisfied with their experience of ACP discussions # Residents' end-of-life preferences are considered # More residents die in their preferred environment of care	RACF service profiles meet the needs of the population RACF residents receive quality end-of-life care, at the right time and in the setting of their choice
Process	**Tracking**	**Intervention outcomes**	
Indicators:	Indicators:	Measures:	Measures:

Activities	Participants	Short term outcomes	Long-term outcomes
Development of resources for RACF staff, website, learning modules Delivery end-of-life conferences Delivery of mentorship programme End-of-life model of care implemented	# RACFs participating # RACF nurses mentored and educated # educational resources delivered # resident end-of-life outcomes	RACFs # number of RACFs that implemented the end-of-life care model # increase in RACFs with embedded end-of-life policies/procedures and continuous quality improvement activities for end-of-life care aligning to accreditation standards # increased numbers of ACP documents readily available # increased numbers of palliative care case conferences delivered # increased numbers of terminal care pathways implemented # increased numbers of residents provided end-of-life care according to their wishes Nurses: # % of mentored nurses showing increases in knowledge, attitudes, skills and confidence for end-of-life care Residents: # resident/SDM report satisfaction with their experience of ACP discussions # % increase in numbers of residents whose end-of-life preferences were aligned with delivered care # % increase in residents dying in the choice of setting # % decrease in residents transferred to hospital in last week of life	Brisbane South PHN Whole of Region Needs Assessment[29]

Outcomes

Intended initiative outcomes with associated activities, data sources and objectives are listed in Table 3.

Table 3: Intended initiative outcomes, associated data sources and component objectives

Intended Outcome	Activities	Data Source	Objectives
1. Improved capacity of RACFs to provide quality end-of-life care	Facility manager academic detailing Development of nursing professional activities and resources: Website, ACP and end-of-life care modules Mentorship program – ACP, end-of-life care and sustainability day	• Number of participating RACFs that implemented the quality end-of-life model (RACFs completing MoUs and After Death Audits) • Pre and post intervention organisational policies and structures audit (evidence end-of-life care model capacity building) • RACF staff participation with developed resources and mentoring • Pre and post After Death Audits (ACP activity, palliative care case conferences, use of terminal care pathway) • Numbers of ACP documents uploaded to The Viewer	1, 2
2. Improved capacity of RACF nurses to provide quality end-of-life care	Nursing professional development activities: Website activity, end-of-life care modules completion Engagement in Mentorship programme – ACP, end-of-life care end-of-life care and sustainability day Conference attendance	• Pre and post intervention education surveys • Pre and post intervention After Death Audit • Numbers of nurses engaging in educational activities and use of resources • Conference attendance sheets	1
3. Improved RACF resident end-of-life outcomes	ACP discussions and survey completion	• Pre and post After Death Audits (especially numbers of residents in terminal phase transferred to hospital in last week of life) • ACP satisfaction/experience surveys	1, 2

2.4 Data Analysis

Data was collected from the following sources:

9) Organisational policies and structures audits (pre and post-intervention [Attachments 9 & 10])
10) Nurses education surveys (pre and post-intervention [Attachments 12 & 13])
11) After Death Audits (pre and post-intervention [Attachments 17 & 18])
12) Residents and/or their substitute decision-makers - satisfaction and experience with ACP discussion survey (Attachments 15 & 16)
13) Mentorship programme attendance lists
14) Conference participant attendance and feedback sheets
15) CareSearch website informatics
16) Office of Advance Care Planning reports of numbers of ACP documents uploaded

Audit and survey responses were quantitatively analysed. Rating scale data were analysed with descriptive and inferential statistics computed using International Business Machine (IBM) Statistical Package for the Social Sciences (SPSS) software.

2.5 Ethics

To ensure that this this initiative was conducted in accordance with principles of the National Statement of Ethical Conduct in Human Research it was submitted to the MSH Princess Alexandra Hospital Ethics Committee. Ethics approval was obtained in November 2018 (HREC/2018/QMS/46537:SSA/2019/QMS/46537).

Subsequent ethics approvals were required, and provided, by both the Blue Care Ethics Committee and the St Vincent's Health and Aged Care Human Research and Ethics Committee (SVHAC HREC) (HREC18/38).

3.0 Results and Evaluation

3.1 Overview

3.1.1 Participating RACFs

Ninety RACFs within the BSPHN catchment area were invited to be part of the initiative intervention. Thirty MoUs were signed. Two facilities withdrew their commitment to participate after completion of the pre-implementation organisation policies and structures audit; RACFs were not required to provide a reason for leaving the initiative. Twenty-eight RACFs completed all intervention activities. Of these, two RACFs (owned by the same provider) chose not to provide copies of their completed After Death Audits data to the initiative manager.

3.1.2 Activities

As mentioned, a range of resources to enhance quality end-of-life care in RACFs was developed including example ACP and Palliative Approach policy and procedure documents, ACP and end-of-life care training modules and other professional development activities. A summary of the resources includes:

- Reviewed, updated and uploaded examples of ACP and End-of-life Care Policy and Procedures documents available, via www.PallConsult.com.au for use by RACF managers
- A three-day in-facility End-of-Life Care Mentorship programme rolled out in 28 facilities.
- Three ACP foundation modules, three Train-the-Trainer ACP modules designed to encourage sustainability and four End-of-Life Care modules (See Table 4 for reported activity) were uploaded to the website.
- Two End-of-Life conferences targeted specifically to aged-care staff were convened and favourably received by aged-care staff (Attachments 20 and 21).

3.1.3 RACF Manager involvement

Facility-level pre-intervention baseline measures of aspects of end-of-life care were obtained from 30 RACF managers. These measures were compared against 18 post-intervention organisational policy and structures audits. (Tables 4A-D).

3.1.4 Nursing staff involvement

Sixty-five nurses completed After Death Audits that canvassed various aspects of end-of-life care. One hundred and twenty-six baseline pre-intervention After Death Audits were completed. These were compared against 405 post-intervention death audits.

Sixty-five nurses completed pre-intervention educational surveys aimed at determining baseline measures of knowledge, skills, confidence and attitudes concerning aspects of clinical end-of-life care. Forty-two completed post-intervention educational surveys.

3.1.5 Resident/family/SDM involvement

Five ACP experience/satisfaction surveys were received from residents and three from family members.

3.1.6 Data Collection

Pre-implementation baseline data collection began 5/11/2018. Post-initiative data collection began on 7/2/2019 and continued until 31/10/2019.

3.2 Findings and Evaluation

Evaluation findings of this initiative are presented according to the intended outcomes of the intervention, as listed in Table 3. Intended outcomes include objective measures of activities to indicate that the objectives have been met.

3.2.1 Intended outcome: Improved capacity of RACFs to provide quality end-of-life care

The initiative resulted in improved capacity for RACFs across BSPHN catchment area to provide quality end-of-life care. Twenty-eight (93.3%) of the maximum targeted number of 30 RACFs implemented aspects of the quality end-of-life model based upon the Australian Commission on Safety and Quality in Health Care, *National Consensus Statement: essential elements for safe and high-quality end-of-life* *care* (2015)[4] and aligned with the new Aged Care Quality Standards[5]. Twenty-eight facilities represent 31.1% of all registered RACFs within BSPHN.

Facility-level capacity

At a facility-level, changes in the capacity of volunteering RACFs to provide quality end-of-life care is evidenced by comparisons of RACF managers' responses in the pre and post-intervention organisational policies and structures audits. Reported audit items were subsumed under four broad headings:

a) existence of relevant service-level policies and procedures
b) use of ACP templates and processes
c) facility-level education initiatives
d) continuous quality improvement activities.

Results are reported in Tables 4 A, B, C and D where ratings were on a scale of 1 (strongly disagree) to 5 (strongly agree). Items showing significant improvements post-implementation are marked with an asterisk.

a) Existence of relevant facility-level policies and procedures

The audit examined existence of facility-level procedures/guidelines for providing end-of-life care. For most items, the mean level of agreement at the pre-intervention audit was above 4 (which was labelled 'agree' on the audit form, with a maximum possible of 5 'strongly agree'). This indicates that the managers of participating RACFs already had in place many of the policies/procedures required for delivery of quality end-of-life care. For these items, there was no significant increase in mean level of agreement from pre to post-intervention in independent samples t-tests (Table 4A).

The establishment of a palliative care working party was one procedure that showed a statistically significant increase across the intervention. The responsibility of this working party is the promotion and facilitation of continuous quality improvements in end-of-life care within the RACF, and the mean level of agreement that there was such a party within the facility increased from 3.28 pre-intervention to 4.39 post-intervention (t=3.21, df = 45, p = .002).

Table 4A: Facility-level audit of organisational policies and structures: service-level policies and procedures

Facility-level policy/procedure	**Pre-Intervention Mean (SD) N = 30**	**Post-Intervention Mean (SD) N = 18**	**95% Confidence Interval for the mean difference**
Our facility has a policy regarding the care of residents towards end-of-life	4.60 (0.50)	4.50 (0.51)	-0.40, 0.20
*Our facility has a palliative care working party responsible for promoting and facilitating quality end-of-life care (p=.002)	3.28 (1.33)	4.39 (0.78)	0.42, 1.81
Our facility has a staff member(s) responsible for promoting and facilitating quality end-of-life care	3.80 (1.10)	4.00 (0.97)	-0.43, 0.83
Our facility has specific procedures/guidelines for:			
Identifying when a resident requires palliative care	4.04 (1.17)	4.28 (0.83)	-0.40, 0.88

Facility-level policy/procedure	Pre-Intervention Mean (SD) N = 30	Post-Intervention Mean (SD) N = 18	95% Confidence Interval for the mean difference
Assessing and managing pain	4.47 (0.68)	4.50 (0.51)	-0.34, 0.41
Assessing and managing shortness of breath or dyspnoea	4.03 (1.13)	4.44 (0.62)	-0.17, 0.99
Assessing and managing oral health	4.33 (0.76)	4.39 (0.61)	-0.37, 0.48
Arranging for specialist palliative care review when appropriate	4.10 (0.96)	4.50 (0.51)	-0.09, 0.89
Palliative care case conferences	4.13 (0.94)	4.33 (0.77)	-0.33, 0.73
Terminal care (last weeks or days of life)	4.23 (0.97)	4.44 (0.62)	-0.30, 0.73

* Difference between pre and post-intervention mean is significant at .05 level in an independent samples t-test.

b) Use of ACP templates and processes

Utilisation of ACP templates and processes is a further indicator of promotion of quality end-of-life care. Comparisons of ACP specific issues pre and post-intervention are shown in Table 4B.

Table 4B: Facility-level audit of organisational policies and structures: advance care planning template and processes

Facility-level templates and processes	Pre-Intervention Mean (SD) N = 30	Post-Intervention Mean (SD) N =18	95% Confidence Interval for the mean difference
ACP is routinely discussed, at an opportune time, when an individual moves into our facility	3.90 (1.30)	4.28 (0.75)	-0.30, 1.05
Each resident, who has volunteered to document their advance care plan, has that plan filed in a specific area of their chart	4.50 (0.82)	4.50 (0.51)	-0.43, 0.43
Systems have been established by our facility for transferring residents' advance care plans from residential aged care to hospital	4.47 (0.63)	4.17 (0.99)	-0.77, 0.17
Our facility's current advance care plan template and advance care planning process includes:			
Establishing and documenting the goals of care for each resident, consistent with a resident's personal preferences or values	4.29 (0.71)	4.35 (0.61)	-0.35, 0.49
Potential to regularly review the resident's changes in preference with regard to future health care	4.25 (0.70)	4.35 (0.61)	-0.35, 0.52
Potential to regularly review the resident's preferences with regard to life sustaining or prolonging treatments	4.18 (0.82)	4.35 (0.61)	-0.29, 0.64
Potential to regularly review the resident's preference in regard to preferred place of death	4.32 (0.67)	4.41 (0.51)	-0.29, 0.47
*Sending ACP documents to the Office of Advance Care Planning for uploading (p =.008)	3.57 (1.26)	4.47 (0.51)	0.25, 1.55

* Difference between pre and post-intervention mean is significant at .05 level in an independent samples t-test.

ACP templates and processes were reported to be well established in the facilities at the pre-intervention stage (most means were over 4 pre-intervention). The only significant increase in capacity was reported in the sending of ACP documents to the Office of ACP for uploading (mean level of agreement that documents were sent to the Office of ACP increased from 3.57 to 4.47, t = 2.79, df = 43, p = .008).

c) Facility-level education initiatives

The intervention was successful in increasing educational materials and opportunities within the RACFs. Facility managers are statistically significantly more likely post-intervention to agree that educational materials are available in their facility for residents and families, and that on-going service education includes topics relevant to quality end-of-life care such as communication skills, symptom assessment and management, nutrition, oral care, hydration, and bereavement care, as well as knowledge of legal issues relevant to ACP.

All items surveyed were in the expected direction (see Table 4C), with increases to all means of 4+ in the post-intervention period. (For the two items that did not reach the level of statistical significance [whether utilising an end-of-life care pathway and cultural/spiritual/religious beliefs and preferences related to palliative care] the changes approached statistical significance.)

Table 4C: Facility-level audit of organisational policies and structures: facility-level education initiatives

Facility-level education initiative item	**Pre-Intervention Mean (SD) N = 30**	**Post-Intervention Mean (SD) N =18**	**95% Confidence Interval for the mean difference**
*Our facility has educational materials available for residents/families on decision-making and care for those requiring palliative care and/or terminal care (p = .019)	3.57 (1.25)	4.33 (0.59)	0.13, 1.40
On-going service education for end-of-life care for nursing and care staff (RN/EN/care worker) includes:			
*Basic knowledge of legal and other regulations pertaining to ACP (p = .010)	3.50 (1.04)	4.28 (0.83)	0.12, 1.40
*Communication skills for understanding and supporting dying residents and their families (e.g. conducting a palliative care conference) (p = .004)	3.47 (1.04)	4.33 (0.77)	0.30, 1.44
*Symptom assessment and management for residents requiring palliative care (p = .002)	3.67 (1.09)	4.56 (0.51)	0.34, 1.44
*Issues related to nutrition and hydration for residents at end of life (eg dysphagia, the benefits and risks of feeding tubes) (p = .004)	3.50 (1.04)	4.33 (0.69)	0.28, 1.39
*Issues related to oral care for residents requiring palliative care (p = .003)	3.73 (0.94)	4.50 (0.51)	0.28, 1.30
Utilising an end-of-life care pathway	3.87 (1.04)	4.39 (0.50)	-0.01, 1.05
Cultural, religious and spiritual beliefs and preferences related to palliative and end-of-life care	3.70 (0.99)	4.22 (0.81)	-0.03, 1.01
*Bereavement care for staff and families (p = .004)	3.43 (1.04)	4.28 (0.75)	0.28, 1.41

* Difference between pre and post-intervention mean is significant at .05 level in an independent samples t-test.

d) Continuous quality improvement activities

Continuous quality improvement activities are the cornerstone of any sustainable intervention. There is evidence that RACFs embedded continuous quality improvements as a result of the intervention; these are reported in Table 4D. Statistically significant increases pre to post-intervention were seen in agreement for quality assurance mechanisms for monitoring outcomes for palliative care case conferencing and use of end-of-life care pathways.

Table 4D: Facility-level audit of organisational policies and structures: continuous quality improvement activities

Continuous quality improvement items	**Pre-Intervention Mean (SD) N = 30**	**Post-Intervention Mean (SD) N = 18**	**95% Confidence Interval for the mean difference**
Quality assurance mechanisms have been established for:			
*Monitoring the outcomes for palliative care case conferences (p = .008)	3.27 (1.29)	4.22 (0.88)	0.27, 1.65
*Monitoring the outcomes related to the use of end-of-life care pathways (p = .002)	3.33 (1.24)	4.39 (0.61)	0.42, 1.69
Transferring residents' ACP documentation across settings from RACF to hospital	3.90 (1.05)	4.28 (0.83)	-0.21, 0.97
Residents' deaths are reviewed to assess quality of care at the end of life (e.g. After Death Audit)	3.69 (1.37)	3.89 (1.37)	-0.63, 1.03

* Difference between pre and post-intervention mean is significant at .05 level in an independent samples t-test.

RACF staff capacity

A summary of RACF staff engagement with activities designed to increase RACF capacity to provide quality end-of-life care is listed in Table 5.

Table 5: Summary of the engagement of RACF staff during the initiative.

Activity	**N**
RACF manager academic detailing	30
Mentorship days (3/facility)	84
Mentorship participants	521
Website visits	5475
Online ACP education modules completed	245
Online end-of-life care education modules completed	304
2 x one-day conference attendees	220

In total 521 nurses completed aspects of the education programme – online modules, conference attendance and/or peer mentorship programme participation. This number is likely to be conservative as data were not collected from non-mandatory sign-up sheets for modules.

Two hundred and twenty RACF clinical staff attended the End-of-Life Care for RACF conferences.

After Death Audits

Further evidence of RACF increased capacity to provide quality end-of-life care is provided by comparisons of pre and post-intervention quality end-of-life process measures within decedent After Death Audits. Pre-implementation, 126 resident deaths were audited, and post-implementation 405. Clinical activity surrounding the three key clinical processes; ACP documentation, delivery of palliative care case conferences and use of a terminal end-of-life care pathway, outlined in the MSH End-of-Life Care Framework were explored.

Advance Care Planning documentation

Pre-intervention, 57.9% (73) of decedents had documented advance care plans; post-intervention 63.7% (258) of decedents had documented advance care plans. This increase, although in the predicted direction, is not statistically significant (chi-square = 1.36, df = 1, p = .24).

Table 6 displays the types of documented advance care plans completed by residents in pre- and post-intervention periods. The most common documents completed were the Enduring Power of Attorney (EPoA) (personal/financial decisions) and the Statement of Choices (SoC).

Table 6: Types of ACP documentation (residents may have completed more than one type of document; percentages are of the number of people who had documents)

ACP document type	Pre-Intervention Audit % (N=73 had ACP document)	Post-Intervention Audit % (N=258 had ACP document)
Advance Health Directive	11.0% (8)	14.3% (37)
Enduring Power of Attorney (personal/financial decisions)	58.9% (43)	27.5% (71)
Statement of Choices	57.5% (42)	57.8% (149)
## Other	17.8% (13)	24.0% (62)

Other refers to any type of ACP document unable to be uploaded to the Queensland Health Viewer

According to data provided by the Queensland Health Viewer there was an increase in the number of advance care plans completed by residents/SDMs from participating RACFs and uploaded to the Queensland Health Viewer, as a result of the intervention. In the pre-intervention period, 325 documents were uploaded, compared to the post-intervention period, with 441 documents uploaded. This is a statistically significant increase in a chi-square goodness of fit test (chi-square = 17.6, df = 1, p<.001).

Delivery of palliative care case conferences in the last 6 months of life

A key clinical process in the End-of-Life Care Framework is the conducting of a palliative care case conference within the last 6 months of life. Table 7 shows information about the case conferences conducted pre and post-intervention.

Table 7: Case conference within the last 6 months

Case conference within last 6 months	Pre-Intervention % (N = 126)	Post-Intervention % (N = 405)
Yes	32.5% (41)	54.3% (220)
No	67.5% (85)	45.7% (185)

Pre-intervention 32.5% of decedents had had a palliative care case conference within the last six months of life. The corresponding figure post-intervention was 54.3% (N=220). This increase in case conference activity was statistically significant (chi square = 18.24, df = 1, p < .001).

The number of days between the palliative care case conference and the resident's death did not differ significantly from pre to post-intervention. In an independent samples t-test, pre-intervention the case conference was held on average 5.3 days before death (SD = 9.2), and post-intervention the case conference was held on average 5.2 days before death (SD=8.1; t = 0.6, df = 259, p = .95).

Numbers of decedents commenced on an end-of-life (terminal) care pathway

A further key clinical process in the MSH End-of-Life Care Framework is the commencement of an end-of-life care pathway in which specified activities (such as comfort care offered regularly; access to end-of-life care medicines, deprescribing of inappropriate medicines and ceasing of non-therapeutic interventions and observations) are undertaken to provide quality end-of-life care.

For 41 of the residents, the commencement of an end-of-life care pathway was deemed to be not appropriate (for example, because the resident died in hospital or the death was unexpected; this applied to 30 residents pre-intervention, and 11 post-intervention). Table 8 shows the information for those decedents for whom commencement of an end-of-life care pathway would have been appropriate. Pre-intervention 30.2% (29) of decedents had been commenced on an end-of-life (terminal) care pathway compared with 40.6% (160) post-implementation.

Table 8: End-of-life care pathway commenced

End of Life Care Pathway commenced	Pre-Intervention % (N = 96)	Post-Intervention % (N = 394)
Yes	30.2% (29)	40.6% (160)
No	69.8% (67)	59.4% (234)
Residents not applicable	30	11

The change from 30.2% pre- to 40.6% post-intervention was in the appropriate direction and approached, but did not reach, the level of statistical significance (chi-square = 3.52, df = 1, p = .06).

The mean number of days between commencement of the end-of-life care pathway and death was 3.79 (SD=3.61) pre-intervention, and 3.37 (SD=4.41) post-intervention. These means did not differ significantly in an independent samples t-test (t=0.49, df = 187, p = .63).

Review of residents' deaths by palliative care working party using the After Death Audit

Review of After Death Audit forms by the RACF palliative care working group was not reported at all in the pre-intervention phase but was reported to have taken place in 13.3% of deaths in the post-intervention phase, indicating a statistically significant increase in review activity (chi-square = 18.7, df = 1, p < .001).

3.2.2 Intended outcome: Improved capacity of RACF nurses to provide quality end-of-life care

Comparisons of pre and post-educational surveys

Pre-intervention, 67 RACF nursing staff returned education surveys and post-intervention, 44 surveys were returned. Characteristics of nurses completing surveys include: 94% were RN or EN, 96% worked in facilities with at least 50 residents, 90% had worked there for more than one year, with their clinical role in caring for residents accounting for more than 50% of their job.

The pre and post-interventional educational surveys compared nurses' rated changes in their:

a) *knowledge* regarding elements of end-of-life care,
b) *skill* in end-of-life communications with fellow staff, residents and families, and other professionals; provision of symptom management, and use of a terminal care pathway, and
c) *confidence* in communicating with families, residents, and their GP and appropriately initiating discussions
d) *attitudes* concerning the importance of ACP and a palliative approach to care.

Pre and post-intervention ratings to specific items are shown in Tables 9, 10 and 11. To guarantee anonymity, individuals could not be identified from the surveys, so responses could not be paired and changes in responses from pre to post-intervention were assessed with independent samples t-tests.

a) RACF nurse knowledge regarding elements of end-of-life care

Table 9: RACF nurses rated knowledge of relevant end-of-life topics pre- and post-intervention (on a scale ranging from 0 – no knowledge to 5 – extensive knowledge).

Rated knowledge of:	**Pre-Intervention Mean (SD) N = 67**	**Post-Intervention Mean (SD) N = 44**	**95% Confidence Interval for the mean difference**
* End-of-Life Care Framework – last 12 months of life	3.00 (1.23)	3.51 (1.12)	0.05, 0.97
How to access resources regarding palliative care	3.39 (1.03)	3.79 (1.19)	-0.02, 0.83
* The purpose of Advance Care Planning	3.79 (0.78)	4.23 (0.87)	0.13, 0.76
* The law relating to ACP in Qld	2.75 (1.01)	3.33 (1.15)	0.17, 0.99
* Steps for upload of ACP document to the Viewer	2.49 (1.63)	3.21 (1.63)	0.08, 1.35
* Accessing resources about ACP	3.00 (1.30)	3.51 (1.28)	0.01, 1.01
Elements and value of a palliative care case conference	3.54 (1.09)	3.88 (1.16)	-0.09, 0.78
* Symptom management consistent with palliative care	3.43 (1.05)	4.02 (1.08)	0.18, 1.01
* Criteria for commencing an end-of-life care pathway	3.38 (1.09)	3.91 (1.17)	0.09, 0.97

* Difference between pre and post-intervention mean is significant at .05 level in an independent samples t-test

As seen in Table 9, for all nine items related to knowledge, the change is in the expected direction, with nurses rating their knowledge as more extensive post-intervention; seven of these were statistically significant in independent samples t-tests. Nurses demonstrate statistically significant increased knowledge in elements of end-of-life care, as seen specifically in the rationale for, and activities related to ACP and symptom management consistent with a palliative approach to end-of-life care.

b) RACF nurse skills in end-of-life care provision

In addition to rated knowledge, RACF staff rated their skill in eight end-of-life care activities, including discussions with residents and/or families about ACP and end-of life care and symptom management. Ratings are listed in Table 10.

Table 10: RACF nurses rated skill in relevant end-of-life topics pre- and post-intervention (on a scale ranging from 0 – no ability to 5 – high ability).

Rated skill in:	**Pre-Intervention Mean (SD) N = 67**	**Post-Intervention Mean (SD) N = 43**	**95% Confidence Interval for the mean difference**
Introducing discussions about end-of-life care with residents and/or their family	3.51 (1.09)	3.70 (1.08)	-0.23, 0.61
Introducing discussions about ACP with residents and/or their family	3.54 (1.08)	3.74 (1.12)	-0.22, 0.63
* Explaining differences between ACP documents used in QLD	2.97 (1.03)	3.42 (1.28)	0.01, 0.89
Coordinating and participating in a palliative care case conference	3.41 (1.31)	3.60 (1.29)	-0.31, 0.70
* Providing evidence-based symptom management consistent with quality palliative care	3.24 (1.02)	3.69 (1.20)	0.02, 0.89
* Providing evidence-based terminal care guided by an End-of-Life Care Pathway	3.12 (1.09)	3.60 (1.23)	0.03, 0.92
Teaching other RACF staff about the benefits of ACP	3.27 (1.10)	3.55 (1.44)	-0.21, 0.76
* Providing appropriate referrals to the specialist palliative care service	3.30 (1.23)	3.79 (1.18)	0.01, 0.96

* Difference between pre and post-intervention mean is significant at .05 level in an independent samples t-test

For all items, the mean level of rated skill changed in the expected direction, though only four of eight skills improved significantly. The intervention increased perceived skill in providing evidence-based care for symptom management and terminal care, and in the ability to liaise appropriately with a specialist palliative care service. A statistically significant increase was also evident in ability to explain the differences between the different ACP documents used in Queensland. Interestingly, rated skills in introducing discussions about ACP and end-of-life care did not increase significantly, nor did skills involved in teaching other staff about ACP benefits or co-ordination of palliative care case conferences.

c) RACF nurse confidence in end-of-life communications

RACF nurse confidence did not change significantly across any of the end-of-life communications rated, as shown in Table 11, though all mean changes were in the expected direction. Pre-intervention ratings indicate nurses were already quite confident in their ability to have relevant discussions with residents, families, GPs and other staff.

Table 11: RACF nurses rated confidence in relevant end-of-life communications pre- and post-intervention (on a scale ranging from 0 – not confident to 5 very confident).

Rated confidence in:	**Pre-Intervention Mean (SD) N = 67**	**Post-Intervention Mean (SD) N = 43**	**95% Confidence Interval for the mean difference**
Initiating end-of-life discussions in response to cues from residents and families	3.44 (1.05)	3.79 (1.07)	-0.69, 0.76
Recognising the appropriate time to introduce discussions about ACP	3.38 (0.97)	3.73 (1.10)	-0.05, 0.76
Approaching colleagues to change the focus of care for a resident after recognising that the resident's condition has changed	3.70 (0.96)	3.88 (1.17)	-0.23, 0.59
Initiating conversations with GPs to complete a resident's advance care plan	3.68 (1.01)	3.83 (1.21)	-0.28, 0.58
Initiating a conversation with the GP to consider commencement of an end-of-life care pathway	3.62 (1.03)	3.88 (1.21)	-0.17, 0.19
Teaching other facility staff about the benefits of ACP or palliative care	3.55 (1.08)	3.76 (1.21)	-0.23, 0.71

* Difference between pre and post-intervention mean is significant at .05 level in an independent samples t-test

Ratings could range from 0 to 5, where 0 indicated not confident and 5 indicated very confident.

d) RACF nurse attitudes to ACP and a palliative approach

A further two questions in the educational surveys investigated nurses' attitudes to ACP and a palliative approach. Pre-intervention, respondents strongly agreed with the importance of ACP (mean of 4.75 out of a maximum of 5) and adopting a palliative approach (mean of 4.69) for the provision of high-quality care for residents and their families. These attitudes were maintained in the post-intervention educational survey (corresponding means were 4.95 and 4.93 post-intervention). There was no significant difference between pre and post-ratings.

Pre and post-After Death Audits: Comparison of RACF nurses' recognition of approaching death and consideration of residents' preferences

Recognition of the approaching death of a resident is essential for the timely and proactive implementation of appropriate end-of-life activities. Pre-intervention, 15.1% (19/126) of audited deaths were considered unexpected, whereas post-intervention, that had reduced to 8.6% (35/405). This reduction is statistically significant (chi-square = 4.36, df = 1, p < .05).

To provide resident-centred terminal end-of-life care nurses must not only be aware that the resident is approaching death, they must also be aware of the resident's preferences for care and to be able to translate those preferences into delivery of care. Table 12 illustrates the percentage change in documented evidence that nurses considered residents' preferences for care in the care they provided. This increase is significant (chi-square = 22.23, df = 1, p < .001).

Table 12: Documented evidence that ACP preferences were taken into consideration during end-of-life care. Unexpected deaths (19 pre-intervention and 35 post-intervention have been excluded)

ACP consideration at EoL	Pre-Intervention % (N =107)	Post-Intervention % (N =370)
Yes	29% (31)	54.9% (203)
No	71% (76)	45.1% (167)

3.2.3 Intended outcome: Improved resident end-of-life care outcomes

Improvement in resident end-of-life care outcomes were primarily measured using comparisons of pre and post-After Death Audit data. A secondary measure was reported levels of consumer satisfaction with ACP discussions held with clinicians.

After Death Audit findings

a) Concordance between preferred and actual place of death

An important intended outcome of the intervention was an increase in concordance between number of residents who died in their place of choice as documented in their advance care plan and reported in the pre and post-intervention After Death Audits.

Documented preferences for and actual places of death, as reported in After Death Audits, are shown in Tables 13A and B. According to pre-intervention After Death Audits, 34.1% (43/126) of decedents had a documented preferred place of death and this increased to 50.1% (203/405) in post-intervention After Death Audits. This change in the level of documentation of preferences is statistically significant (chi-square = 9.89, df = 1, p <.05).

Table 13A: Pre and Post-After Death Audits: Documented preferred place of death

Documented Preferred Place of Death	Pre-Intervention % (N = 43)	Post-Intervention % (N = 203)
RACF	79.0% (34)	88.2% (179)
Hospital or RACF	4.6% (2)	3% (6)
Other	16.3% (7)	8.9% (18)

As can be seen in Table 13A, most residents with a documented preferred place of death chose their RACF. Both pre and post-intervention, the majority of residents preferred to die in their RACF.

Table 13B: Pre and Post-After Death Audits: Documented actual place of death

Actual Place of Death	Pre-Intervention % (N = 126)	Post-Intervention % (N = 405)
RACF	67.5% (85)	80.7% (327)
Hospital	32.5% (41)	18.8% (76)
Other	0% (0)	0.5% (2)

Both the preferred and actual place of death were recorded for 246 residents, but 25 who preferred 'other' were not able to be matched for concordance, so 221 cases were considered for concordance. Table 13C summarises concordance between preferred and actual place of death.

Table 13C: Concordance between residents' preferred and actual place of death

	Pre-Intervention % (N = 36)	Post-Intervention % (N = 185)
Actual and preferred place of death concordant	72.2% (26)	85.9% (159)
Actual and preferred place of death differ	27.8% (10)	14.1% (26)

Pre-intervention 72.2% of residents died in their preferred environment of care, and post-intervention 85.9% were able to do so. This change is statistically significant (chi-square = 4.16, df = 1, p = 0.04), indicating the intervention has improved capacity of residents to die in their environment of choice.

b) Reduction in the number of transfers to hospital in the last week of life

After Death Audits explored whether residents were transferred to hospital in the last week of their lives and, if so, for what reason. Relevant data is shown in Table 14A and B.

Table 14A: Pre and Post-After Death Audits: Residents transferred to hospital in last week of life

Transferred to hospital in last week?	Pre--Intervention % (N = 126)	Post-Intervention % (N = 405)
Yes	41.3% (52)	25.2% (102)
No	58.7% (74)	74.8% (303)

Pre-intervention the proportion of decedents transferred to hospital in the last week of life was 41.3% post-intervention this decreased to 25.2%. The reduction in the proportion of residents transferred to hospital is statistically significant (chi-square = 12.08, df = 1, p=.001). Principal reasons for hospital transfer are recorded below.

Table 14B: Pre and Post-After Death Audits: Principal reason for transfer to hospital in the last week of life

Reason for transfer to hospital	Pre--Intervention (N=52)	Post-Intervention (N=102)
*Symptom management	11.5% (6)	31.4% (32)
Sudden, unexpected deterioration	17.3% (9)	11.8% (12)
Following a fall	7.7% (4)	15.7% (16)
*Resident/family request	26.9% (14)	8.8% (9)
GP request	28.9% (15)	29.4% (30)
Other	7.7% (4)	2.9% (3)

* Proportions differ (p<.05) from pre to post-intervention in a chi-square test of independence.

Chi-square tests of independence were carried out to test for changes from pre- to post-intervention in the principal reason for transfer to hospital. For four of the suggested reasons, there was no significant difference across occasions. The proportion of admissions due to symptom management was significantly higher post-intervention than pre-intervention. Resident or family requests for transfer were significantly fewer (in proportion) post-intervention than pre-intervention.

Length of stay (LoS) after hospital transfer was recorded. Mean LoS was 4.06 days (SD=5.04) pre-intervention, and 4.83 days (SD=4.93) post-intervention. The difference is not statistically significant in an independent samples t-test (t = 0.91, df = 152, p = 0.37).

c) Consumer satisfaction and experience with ACP discussions

It was considered important to gauge resident or family/substitute decision maker (SDM) satisfaction and experience of the process of nurse-initiated ACP discussions within the RACF. Disappointingly, only five residents and three SDMs (all of whom were family of the resident) volunteered to complete surveys about their satisfaction with the process. Given the small number of respondents and lack of a comparator group, no statistical analysis was attempted.

Of the target residents, three were aged 70-79 years, and five were 80 years of age or older. In two cases residents' health was reported as good, two were neither good nor poor, and four were poor. One resident had not been admitted to hospital in the previous 12 months, four had been one or two times, and three had had three or more admissions.

Responses to the survey are shown in Table 15A, B and C. Resident and SDM reactions to ACP discussions are combined.

Table 15A: Resident and substitute decision maker reactions to ACP discussions (N = 8)

Statement	Disagree	Uncertain	Agree
Fitting to be approached while in the RACF to hear about ACP			8
Would have preferred to hear about ACP before moving into RACF*	1		5
Satisfied with the way the nurse introduced the topic of ACP**		2	5
The nurse who spoke about ACP cared about me**		2	5
I got all the information I wanted about ACP	1	1	6
Prefer to have ACP discussions with GP rather than facility nurse	2		6
Hearing about ACP was confronting for me	7		1
Hearing about ACP was a relief for me	1	1	6
Overall satisfied with experience of ACP			8

[#] Responses were recorded on a 6-point scale from strongly disagree to strongly agree. For purposes of clarity of reporting, the responses were reclassified into 3 categories: disagree (= strongly disagree and disagree), uncertain (=somewhat disagree and somewhat agree), and agree (=agree and strongly agree).

* two residents did not complete this question.

** One respondent did not complete this question.

For two of the statements, all respondents agreed, i.e. that it was fitting to hear about ACP in the RACF and that they were satisfied with the experience of ACP.
Most agreed that they were satisfied with the way the nurse introduced the topic, that the nurse cared about them, and that the discussion had motivated them to talk with their family about ACP.

Table 15B: Resident/family/SDM perceived importance and benefits of ACP

Statement	Disagree	Uncertain	Agree
The discussion convinced me of the importance of ACP		1	7
The discussion motivated me to talk to my family about ACP		2	6
Since hearing about the benefits of ACP, I plan to complete an advance care plan			8

It appears respondents realised the importance and benefits of ACP after the discussion with the nurse and were motivated to talk with their families about ACP and to complete an advance care plan document.

Before the ACP discussion, respondents revealed some awareness of issues and processes related to ACP. Responses to relevant statements are shown in Table 15C.

Table 15C: Residents' arrangements before the ACP discussion

Statement	Yes
Had talked about choices for future health care	6
Was aware of ACP	7
Had formally appointed an Enduring Power of Attorney for Health	8
Had informally chosen a person to make future health decisions	7
Had already completed an Advance Health Directive	4

4.0 Discussion

This third initiative highlights benefits consequent to the collaboration between BSPHN, MSPCS and volunteering RACFs in achieving improved end-of-life care outcomes for residents of RACFs by facilitating quality end-of-life care practices. Effectively the initiative has allowed significantly more residents to receive care in accordance with their wishes and to avoid unnecessary hospitalisations at end of life. Regardless of this short-term success, more needs to be done to ensure sustainability of the outcomes. One way to ensure that the gains demonstrated by this initiative are not lost, and that RACF service profiles meet the needs of the population, is to provide recurrent funding for dedicated palliative care specialist staff to work with RACF staff.

The initiative focussed on capacity-building of participating RACFs based upon the three key clinical processes contained within the MSH End-of-Life Care Framework. This was achieved using a multi-modal approach inclusive of development of end-of-life care resources targeted to managers and clinical staff, delivery of educational events and a flexible in-facility staff mentorship programme. These elements were interdependent and likely to have interacted in complex ways. Also, the initiative was predicated upon earlier work, particularly the Phase 1 and Phase 2 initiatives. For these reasons, no rigorous attempt was be made to quantify the contribution of individual components on the outcome achievements. However, as many facility level pre-intervention audit scores, concerning organisational policies and procedures, were high, with few post-intervention significant improvements, the mentorship programme was possibly the major influence on outcomes.

Achievement and examination of the intended outcomes are presented below. Firstly, it is important to note one transformative clinical success of this third initiative, that is, an apparent increase in RACF nurses' ability to recognise impending death and to translate residents' documented care preferences into clinical care during the terminal phase. This is evidenced by a significant decrease in the number of resident deaths that nurses classified as unexpected in post-intervention After Death Audits along with significant increases in nurses' knowledge to apply criteria for commencing a terminal end-of-life care pathway and in skills for providing evidence-based terminal care and finally, by documented evidence that the nurses considered the residents' preferences for end-of-life care in their delivered care. The importance of this success should not be underrated as it is this that allows nurses to competently and compassionately care for residents in their RACF as they die and to avoid distressing and inappropriate transfers to hospital in their final days of life. It is interesting that post-intervention there were also significantly less resident/family requests for transfer to hospital, indicating residents/families were more secure in the care provided by RACF staff. Within the lesser number of residents who were transferred to hospital, symptom management was the principal reason for transfer, indicating that staff were aware of the bounds of their capabilities and were operating within their scope of practice. Safety is an important component of quality care.

4.1 Intended outcome: Improved capacity of RACFs to provide quality end-of-life care

This initiative reached some 30% of all registered RACFs within BSPHN catchment area. Post-intervention, all RACFs had implemented aspects of the end-of-life model based upon the Australian Commission on Safety and Quality in Health Care, *National Consensus Statement: essential elements for safe and high-quality end-of-life care* (2015)[4] and aligned with the new Aged Care Quality Standards (2019)[5]. This represents a considerable increase in capacity to provide quality end-of-life care for residents across BSPHN. This reach also suggests that the model is transferable across different types of non-government jurisdictions.

Pre-intervention facility-level audits indicated many volunteering facilities already had a range of procedures/guidelines and processes, particularly regarding ACP, to support quality end-of-life care and this is testament to the leadership of those facilities. Phase 1 and Phase 2 interventions, supported by the collaboration between BSPHN, MSPCS and RACFs, are likely to have contributed to this finding.

Pre-intervention facility-level audit responses were used during manager academic detailing to help identify facility gaps in care and for these to be addressed according to the requirements of each RACF. Salient gaps nominated by RACF managers included facility-level education and instigation of continuous quality improvement activities.

Given the high level of staff turnover in RACFs, it is most important that facilities ensure that education and training of new staff in end-of-life care is available. Academic detailing sessions placed emphasis on developing and strengthening facility support of end-of-life care education for staff. Consequently, post-intervention significant improvements were recorded across a range of important end-of-life care educational topics such as communication and symptom management.

Continuous quality improvement activities are essential to embedding sustainable capacity for quality end-of-life care provision[6]. The initiative resulted in facilities establishing palliative care working groups to guide continuous quality improvement activities and review After Death Audits; in the establishment of quality assurance mechanisms for monitoring outcomes of palliative care case conferences; and monitoring outcomes related to the use of end-of-life care pathways.

The motivation of facility staff to increase their capacity for quality end-of-life care is apparent from their engagement in initiative activities. Five hundred and twenty-one nurses participated in the mentorship programme where a specialist palliative care nurse worked alongside staff during their rostered workday. Two hundred and twenty nurses attended the end-of-life care conferences; such attendance reflects investment from both RACF facilities and nurses. The high volume of traffic to the purpose-built educational website and completions of the online ACP and end-of-life care modules, also attest to the notion that facility staff were motivated to increase their end-of-life care capacity.

Comparisons of pre and post-After Death Audit outcomes provide more sensitive measures of increased capacity to provide quality end-of-life care as they reflect actual care provided. Post-intervention After Death Audits indicate improvements in all three key clinical processes associated with quality end-of-life care.

Post-intervention, proportionately more decedents had documented advance care plans, though the difference was not significant. In contrast, total documents from participating RACFs that were uploaded to the Queensland Health Viewer, during the same period, showed a significant increase. A possible reason for this mismatch is that numbers of uploaded Viewer documents were influenced by well residents completing documents as well as decedents. Alternatively, documents from decedents may have been sent to the Viewer independently of RACF staff. Either way, this suggests that ACP activity had increased across the participating RACFs, but, given that ACP is the cornerstone of resident-centred end-of-life care,[7,30] it is disappointing that post-intervention the percentage of residents with an ACP was less than sixty-five percent.

Post-intervention, numbers of residents who were the subject of a palliative care case conference increased significantly. Palliative care case conferencing is a pivotal clinical process that has been found to improve a resident's quality of life and reduce avoidable hospitalisations[31,32]. A palliative care case conference allows for a patient-centred medical goals of treatment plan to be formulated and documented to guide patient-centred care as the resident transitions from curative or restorative care to palliative care and inevitably deteriorates. A palliative care case conference allows residents, family and staff to all be on the same page, so that decisions are not made in a medical crisis. Recognition of these benefits ensured that it was a focus of the mentorship programme and included in the end-of-life care educational modules. Ideally a palliative care case conference should occur a few months prior to death[33,34]. Post-intervention palliative care case conferences, similar to pre-intervention conferences, occurred approximately 5 days before the death of the resident. Clearly this is not optimal. Timing, of course, can be affected by many factors, such as a sudden deterioration in resident condition or availability of important staff members.

The third key clinical process for quality end-of-life care is the commencement of a terminal end-of-life care pathway, suitable to guide care in the last days to week of a resident's life. End-of-life care pathways and plans are known to improve the perceptions of family members that the person died “a good death”, with adequate symptom control[35] Pre-intervention 30.2% of decedents had been commenced on a pathway compared with 40.6% post-intervention. This difference was not significant. While the improvement is encouraging, this remains an important area of care that warrants further continuous improvement. The way people die has significant impacts on the morbidity and bereavement of surviving family, important others and staff[36].

4.2 Intended outcome: Improved capacity of RACF nurses to provide quality end-of-life care

RACF nurses reported numerous subjective improvements in their capacity to provide aspects of quality end-of-life care. Comparisons of pre and post-intervention educational surveys show nurses gained significant improvements in knowledge concerning the MSH Framework for End-of-Life Care and across areas of ACP, symptom management and criteria for commencing an end-of-life care pathway.

As well as improved knowledge, nurses reported statistically significant improvements in their perceived skills in providing end-of-life care, including discussing the differences in ACP documents, provision of evidence-based symptom management, delivering care using end-of-life care pathways and providing appropriate referrals to local specialist palliative care services.

Surprisingly, the initiative did not impact RACF nurses’ level of confidence in relevant end-of-life communications. This may be due to the constrained timeframe of the initiative, perhaps a practitioner’s confidence requires further time to utilise new knowledge and practise newly acquired skills to build a sense of confidence.

Subjective improvements in nurses’ capacity to provide quality end-of-life care are substantiated by objective measures from After Death Audit data. Post-intervention, significantly more residents had their ACP preferences taken into consideration during their end-of-life care, significantly more residents had their preferred place of death documented and significantly more and had had a palliative care case conference either with, or concerning, themselves. Knowing a resident’s preferred place of death allows those involved in the conference to proactively plan to achieve that outcome. As mentioned, nurses were also better abled to recognise impending death and so provide appropriate care allowing significantly more residents to die in their place of choice. One may also infer that, given there were significantly less transfers to hospital in the last week of life, nurses had the capacity to keep their residents’ symptoms well-controlled during the dying process.

4.3 Intended outcome: Improved resident end-of-life care outcomes

Continuous quality assurance processes within modern healthcare systems are increasingly aimed at achieving improved resident outcomes and resident reported experience measures[37]. Arguably improved resident end-of-life care outcomes is the most important intended outcome of this initiative.

While in Australia there are no nationally agreed quality clinical indicators for palliative care, there is consensus that care delivered in the environment of the person’s choice is a hallmark of best-practice palliative care[24]. For the first time, since the collaboration between BSPHN, MSH and RACFs began, unambiguous improvements in residents’ outcomes have been achieved. Data from After Death Audits show that not only were more residents’ preferred place of death known and considered but significantly more residents were able to be cared for and die in their place of choice. This is reflected in the finding that there was a significant increase in concordance between a resident's preferred and actual place of death, both of which were the resident's RACF. It is possible that many residents consider their RACF their home and that, like the majority of Australians, they too wish to die in their home[38].

Further, this finding was associated with a significant reduction in resident transfers to hospital in the last week of life. This suggests that the dying resident was subjected to less distressing movements and probably less futile care. It also has important implications for the hospital system; if unwanted, unnecessary transfers to Emergency Departments are avoided, this allows more efficient use of scarce acute-care resources.

An indirect measure of improved resident and substitute decision maker experience is the finding that post-intervention there were significantly less resident/family requests for transfer to hospital, suggesting their experience of, and confidence in, the care provided by the RACF was more favourable.

Patient-reported experiences are a vital component of health-related evaluation[39]. Unfortunately, so few residents/family members returned surveys concerning their satisfaction with the experience of nurse-led ACP discussions that little can be intuited from these results. It is worth noting, nonetheless, that all respondents thought it appropriate to be approached about ACP within the RACF environment. ACP is the cornerstone of resident-centred end-of-life care and it is recognised across Australia that this activity is sub-optimal[11,12,40]. More work needs to be done in this area.

4.4 Limitations of the Phase 3 Initiative

Findings from this Phase 3 initiative are likely to be confounded by the characteristics of the RACFs involved in the intervention. It is probable that participating RACFs were highly motivated to improve end-of-life care for their residents. Firstly, engagement was voluntary and required a considerable commitment in terms of time and staff requirements. Secondly, although not quantified, some volunteering RACFs are likely to have taken part in aspects of either Phase 1 or Phase 2 initiatives. This probable bias is supported by the relatively high baseline facility-level measures of some aspects end-of-life care. Such a bias could limit the generalisability of Phase 3 findings to other facilities within the BSPHN catchment area as well as beyond.

The Phase 3 intervention was multi-modal and complex, making it difficult to try to isolate the impact of individual components. Further, it is likely that components interacted in complex ways. This would hinder RACFs that were considering introducing single aspects of the initiative.

The intervention was short, hindering any sustainability evaluation. Translation of any evidence-based practice into clinical care is known to be challenging and time consuming in all areas of medicine but given the fluctuating workforce of the aged-care sector it maybe even more problematic[41]. As reported in the Phase 2 Initiative, reasonably five years is required to affect the necessary culture change to fully realise the impact of any continuous quality improvement activity, especially when it is as complicated as the Phase 3 initiative.

No attempt was made to calculate the cost-effectiveness of the intervention. Regardless it appears the initiative constitutes high-value care, as each terminal-care hospital avoidance appears to have saved between four to five acute beddays.

4.5 Overall Summary of the Phase 3 Initiative Outcomes

The Phase 3 initiative has been successful in reaching its intended outcomes.

Overall, the initiative can be regarded as a new collaborative model of care, based upon mentorship and continuous quality improvement activities, that can improve resident outcomes as well as staff and resident experiences in receiving and/or providing care. It is likely to impact positively on the hospital acute care sector.

The sustainability and scalability of the intervention requires further exploration.

5.0 Recommendations

On-going collaboration between BSPHN, MSH and RACFs can led to a sustainable model of quality end-of-life care that improves resident outcomes and experiences.

Recommendations based on findings from this Phase 3 initiative include:

- Continued pursuit of the first recommendation from the Phase 2 initiative: that BSPHN and MSPCS structure interventions that enhance the translation of evidence-based best end-of-life practice into clinical care delivery to promote aspects of sustainable high-quality end-of-life care for residents of RACFs and their significant others. This recommendation is in direct alignment with the jointly developed *Brisbane South Older Peoples' Health and Wellness Strategy, 2019-2024* and the MSH *What Matters to Bill and Betty Frail Older Person's* project, 2019. It reflects the recommendations of the Queensland Parliamentary Inquiry into Aged Care, End of Life and Palliative Care (2020) and the Royal Commission into Aged Care Quality and Safety (2019).

- BSPHN and MSH jointly explore sources of recurrent funding to appoint two Specialist Palliative Care Clinical Nurse Consultants to embed the nurse mentorship programme introduced in this initiative into all willing RACFs within the BSPHN geographical catchment area. Without on-going modelling of best palliative care practice any gains are likely to be lost in a shifting RACF workforce

- BSPHN and MSH jointly explore RACF resident preferred outcomes at end of life and increase documentation of advance care plans that are easily accessible by treating clinicians

- BSPHN commission an in-depth study across RACFs to;
    - Implement palliative care case conferences at appropriate times and
    - increase the utilisation of terminal care plans and processes therein

- MSPCS continue to maintain and expand the www.PallConsult.com.au website

6.0 List of References

(1) Reymond L, Charles M, Cooper K. *Improving End-of-Life Care for Residential Aged Care Facility Residents Initiative: Final Report*. Submitted to Brisbane South PHN. Brisbane: Brisbane South Palliative Collaborative: 2018.

(2) Reymond L, Charles M, Taylen-Smith M. *Improving End-of-Life Care for Residential Aged Care Facility Residents Initiative: Final Report*. Submitted to Brisbane South PHN. Brisbane: Brisbane South Palliative Collaborative: 2019.

(3) Queensland Government. PL2015/0045 Version No. 1. *Policy – End-of-Life Care*. Brisbane; Metro South Health, 2015.

(4) Australian Commission on Safety and Quality in Health Care. *National consensus statement: Essential elements for safe and high-quality end-of-life care*. Sydney: ACSQHC, 2015.

(5) Australian Government Aged Care Quality and Safety Commission. Standard numbers: 1-8. *Aged Care Quality Standards*. Canberra: Australian Government; 2019.

(6) Australian Government Department of Health. *Single Aged Care Quality Framework, Draft Aged Care Quality Standards Consultation Paper*. Canberra: Australian Government Department of Health, 2017. Available from: https://consultations.health.gov.au/aged-care-access-and-quality-acaq/single-quality-framework-draft-standards/supporting_documents/Single%20Aged%20Care%20Quality%20Framework%20%20Draft%20Quality%20Standards%20Consultation%20Paper.pdf. [Accessed 11 May 2020].

(7) Detering KM, Hancock AD, Reade MC, Silvester W. The Impact of Advance Care Planning on end of life care in elderly patients: randomised controlled trial. *British Medical Journal*. 2010; 340: c1345.

(8) Palliative Care Australia. *End of life Care is everyone's affair – tackling the challenge of 'end of life'*. Submission to the National Health and Hospitals Reform Commission. Canberra, 2008.

(9) Queensland Government. Brisbane South Older People's Health and Wellness Strategy 2019-2024. Metro South Health, Brisbane South PHN. 2019. Available from: https://bsphn.org.au/wp-content/uploads/2019/05/BSPHN_OPHW_Strategy_Report_Apr2019_V3_WEB.pdf. [Accessed 15 May 2020].

(10) Queensland Government. *What matters to Bill and Betty Frail Older Person's Project – Draft Project Management Plan*. Metro South Health. 2019.

(11) Queensland Parliament Legislative Assembly. *Queensland Parliamentary Inquiry into Aged Care, End of Life and Palliative Care and Voluntary Assisted Dying*. 2020. Available from: https://www.parliament.qld.gov.au/work-of-committees/committees/HCDSDFVPC/inquiries/current-inquiries/AgedCareEOLPC. [Accessed 11 May 2020].

(12) Commonwealth of Australia. *Royal Commission into Aged Care Quality and Safety. Interim Report - Neglect*. 2019. Available from: https://agedcare.royalcommission.gov.au/publications/Pages/interim-report.aspx. [Accessed 11 May 2020].

(13) Etkind SN, Bone AE, Gomes B, Lovell N, Evans CJ, et al. How many people will need palliative care in 2040? Past trends, future projections and implications for services. *BMC MEDICINE*. 2017;15(1): 102.

(14) Australian Institute of Health and Welfare. Australia's Health 2016. 2016.

(15) The Royal Australian College of General Practitioners. *RACGP aged care clinical guide (Silver Book)*. Fifth edition. 2019. Available from: https://www.racgp.org.au/silverbook. [Accessed 11 May 2020].

(16) Australian College of Nurse Practitioners. *What is a nurse practitioner?* Available from: https://www.acnp.org.au/aboutnursepractitioners. [Accessed 11 May 2020].

(17) Australian Government Productivity Commission. *Introducing Competition and Informed User Choice into Human Services: Reforms to Human Services - Inquiry report*. Australian Government Productivity Commission. Report number: 85. 2017.

(18) Australian Medical Association. *2017 AMA Aged Care Survey Report*. AMA. 2018. Available from: https://ama.com.au/article/2017-ama-aged-care-survey. [Accessed 11 May 2020].

(19) Reymond L, Cooper K, Parker D, Chapman M. End-of-life care: Proactive clinical management of older Australians in the community. *Australian Family Physician*. 2016;45(1/2): 76-8.

(20) Oosterveld-Vlug M, Onwuteaka-Philipsen Br, ten Koppel M, van Hout H, Smets T, Pivodic L, et al. Evaluating the implementation of the PACE Steps to Success Programme in long-term care facilities in seven countries according to the RE-AIM framework. *Implementation Science*. 2019;14(1): 1-9.

(21) Chapman, M, Johnston N, Lovell C, Forbat L, Liu W. Avoiding costly hospitalisation at end of life: findings from a specialist palliative care pilot in residential care for older adults. *BMJ supportive & palliative care*. 2018;8(1): 102-9.

(22) Harvey G, Kitson A. PARIHS revisited: from heuristic to integrated framework for the successful implementation of knowledge into practice. *Implementation science*. 2015;11(1): 33.

(23) Aged Care Quality and Safety Commission. *Guidance and resources for providers to support the Aged Care Quality Standards*. Available from: https://www.agedcarequality.gov.au/providers/standards. [Accessed 11 May 2020].

(24) Palliative Care Australia. *National Palliative Care Standards 5th edn*. Canberra: PCA; 2018. Available from: https://palliativecare.org.au/standards. [Accessed 11 May 2020].

(25) Clayton JM, Hancock KM, Butow PN, Tattersall MHN, Currow DC. Clinical practice guidelines for communicating prognosis and end-of-life issues with adults in the advanced stages of a life-limiting illness, and their caregivers. *The Medical Journal of Australia*. 2007;186(12): S77-108.

(26) Hallinan, CM. Program logic: a framework for health program design and evaluation - the Pap nurse in general practice program. *AUST J PRIM HEALTH*. 2010;16(4); 319-325. Available from: https://eds.b.ebscohost.com/eds/pdfviewer/pdfviewer?vid=3&sid=f178d7e1-864d-4835-92b4-b7b7c355b582%40pdc-v-sessmgr05. [Accessed 15 May 2020].

(27) Rohwer A, Pfadenhauer L, Burns J, Brereton L, Gerhardus A, Booth A, et al. Series: Clinical Epidemiology in South Africa. Paper 3: Logic models help make sense of complexity in systematic reviews and health technology assessments. *Journal of Clinical Epidemiology*. 2017;83: 37-47. Available from: https://www.clinicalkey.com.au/#!/content/playContent/1-s2.0-S0895435616302797?returnurl=null&referrer=null. [Accessed 15 May 2020].

(28) Dykeman M, MacIntosh J, Searman P, Davidson P. Development of a program logic model to measure the processes and outcomes of a nurse-managed community health clinic. *Journal of Professional Nursing*. 2003;19(4): 197-203.

(29) Brisbane South PHN. Whole of Region Needs Assessment 2016. Available from: http://www.bsphn.org.au/wp-content/uploads/2016/04/WORNA-2016.pdf

(30) Nair B, Kerridge I, Dobson A, et al. Advance care planning in residential aged care. *Aust NZ J Med*. 2000; 30:339-343.

(31) Phillips JL, West PA, Davidson PM, Agar M. Does case conferencing for people with advanced dementia living in nursing homes improve care outcomes: evidence from an integrative review? *Int J Nurs Stud*. 2013;50(8):1122-35.

(32) Agar M, Beattie E, Luckett T, Phillips J, Luscombe G, Goodall S. Pragmatic cluster randomised controlled trial of facilitated family case conferencing compared with usual care for improving end of life care and outcomes in nursing home residents with advanced dementia and their families: the IDEAL study protocol. *BMC Palliat Care*. 2015;1(4):63.

(33) King MA, Roberts MS. Multidisciplinary case conference reviews: improving outcomes for nursing home residents, carers and health professionals. *Pharmacy World Science*. 2001;23(2); 41-45.

(34) Del Mar C, Mitchell G, Burridge L, Kennedy R, Weeden K, O'Rourke P, et al. General practitioner, specialist providers case conferences in palliative care: lessons learned from 56 case conferences. *Australian family physician*. 2005;34(5): 389-392.

(35) Reymond L, Israel FJ, Charles MA. A residential aged care end-of-life care pathway (RAC EoLCP) for Australian aged care facilities. *Australian Health Review*. 2011;35(3): 350-356.

(36) Buckley T, Sunari D, Marshall A, Bartrop R, McKinley S, Tofler G. Physiological correlates of bereavement and the impact of bereavement interventions. *Dialogues in clinical neuroscience*. 2012;14(2): 129-139.

(37) Fildes D, Westera A, Masso M, Gordon R, Grootemaat P, Williams K, et al. *Evaluation of the Encouraging Better Practice in Aged Care (EBPAC) Initiative. Final Report*. Centre for Health Services Department, Australian Health Services Research Institute, University of Wollongong. 2015.

(38) Ali M, Capel M, Jones G, Gazi T. The importance of identifying preferred place of death. *BMJ supportive palliative care*. 2019;1(9): 84-91

(39) Greenhalgh J. The applications of PROs in clinical practice: what are they, do they work, and why? *Quality of Life Research*. 2009;18(1): 115-123.

(40) Flo E, Husebo BS, Bruusgaard P, Gjerberg E, Thoresen L, Lillemoen L, et al. A review of the implementation and research strategies of advance care planning in nursing homes. *BMC geriatrics*. 2016;16(1): 24.

(41) Ramanadhan S, Crisostomo J, Alexander-Molloy J, Gandelman E, Grullon M, Lora V, et al. Perceptions of evidence-based programs among community-based organisations tackling health disparities: a qualitative study. *Health Education Research*. 2012;27(4): 717-728.