Rosemary Bryant AO Research Centre

Clinical Pathways for Best Practice in Dementia Care

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The Rosemary Bryant AO Research Centre (the Centre) is a partnership between the Rosemary Bryant Foundation and the University of South Australia. The Centre aims to strengthen the role of the nursing and midwifery professions across the health system through the development of a research-driven, evidence-based platform of healthcare. To achieve this, the Centre has developed a comprehensive research program focused on advancing the nursing and midwifery disciplines, and patient care in the domains of population and public health, workforce reform, safety and quality, clinical practice, patient outcomes, and integration into education.

Clinical Pathways for Best Practice in Dementia Care

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Acknowledgement of Country

We acknowledge the Traditional Custodians of the lands on which we work and live, and recognise their continuing connection to land, water and community. We pay our respects to Elders past, present and emerging.

Acknowledgements

We would like to thank the nurses, care leaders and management of Eldercare, and especially those at Trowbridge House. Without their willing participation and support this project would not have been possible. In particular we would like to thank Jane Vassallo, Daniel Fleming, Perena T Paija, Dr Timothy Chew and Scott Boerth for their feedback on the initial design of the clinical pathway.

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Executive summary

Background

In Australia, one in 10 people over 65 years and three in 10 people over 85 years are diagnosed with dementia and it is the second leading cause of death.[1] There are an estimated 459,000 Australians living with dementia and approximately 1.6 million people involved in their care.[2] The management of behavioural and psychological symptoms of dementia (BPSD) (e.g. agitation, wandering, aggression) in Australia is informed by the seven-tiered model of service delivery developed by Brodaty et al.[3] The model is based on severity and prevalence of BPSD, ranging from no dementia (tier 1) through tiers of dementia with increasing behavioural disturbance (no BPSD, mild, moderate, severe, and very severe BPSD) to extreme BPSD with the propensity for violence (tier 7), which is rare.[3] This model estimates up to 90% of people with dementia will experience BPSD at some point, with mild (tier 3) through to severe (tier 5) BPSD in approximately 60% of people living with dementia.[4]

Residential Aged Care Facilities (RACFs) are key providers of support to those experiencing more severe forms of BPSD (Tiers 3-6), who require care in dementia specific facilities (i.e.: those with memory support units) or by case management under a dementia specialist team.[4] This necessitates that RACFs ensure robust, evidence-based practice (EBP) around the management of BPSD as part of providing safe, high quality, person-centred care to residents. EBP is often available in the form of a clinical practice guideline (CPG). Clinical pathways based on a CPG are used to provide structured plans that improve quality of care, reduce variation and maximise treatment or health outcomes in a specific population group, which can be contextualised to the local setting with the aim of standardising care for that clinical issue.[5]

As per the evidence presented in the Oakden inquiry[6] and the Royal Commission into Aged Care Quality and Safety,[7] there are gaps in operationalising safe and effective care for people living with dementia in Australia. This highlights the need for research into creating or contextualising clinical pathways for use by nursing and personal care staff in RACFs (see the Oakden Report[8] and the Royal Commission into Aged Care Quality and Safety Interim Report[7] and Final Report[9] for in-depth analysis of these gaps, and the recommendations on how to address them). On 1 July 2019 the Aged Care Quality and Safety Commission introduced new Aged Care Quality Standards for RACFs. The new Standards are designed to place the consumer at the centre of their care, and reinforce the need for using EBP when providing care to consumers.[10]

Given the prevalence of dementia in RACFs and the current gaps in operationalising safe, dignified, and respectful care for people living with dementia, a clinical pathway for use by staff in RACFs to prevent or manage the onset of BPSD, based on current best practice evidence would be beneficial.

Methodology

The Rosemary Bryant AO Research Centre (RBRC) team followed a 3 Phase stepped process to achieve the overarching project aim of providing a clinical evidence-based pathway, contextualised to the local setting. The clinical pathway was then tested for feasibility and implementability at the Eldercare Trowbridge House, Payneham South, South Australia.

This research aimed to develop or contextualise a clinical pathway, based on current best practice guidelines, for implementation in Australian RACFs. The aim of the clinical pathway is to: assist the nurses using it to feel confidence in their progression through the BPSD treatment options; ensure current EBP has been followed and; ensure documentation to support all decisions are easily accessible for monitoring or future care decisions, and for service auditing purposes.

The objectives of this project were to: (1) search the literature to find current clinical pathways or tools to apply EBP or guidance on the management of BPSD in RACFs; (2) contextualise an existing, or develop a new, clinical pathway with key check points based on this literature and; (3) assess the acceptability and implementability of the clinical decision-making pathway for use by nurses in the memory support unit of one RACF.

Phase 1: the literature review

An iterative, systematic search using PRISMA reporting guidelines[11] was conducted to find CPG and/or clinical pathways for the successful and safe evidence-based prevention or management of BPSD, for use by nurses in RACFs. Six databases and nine grey literature websites were searched. Reference lists and personal libraries of the authors were searched to find additional relevant literature.

The search identified 509 unique publications for title and abstract screening. Of these, 444 articles were excluded as ineligible and 65 publications were screened in full text. A further 58 publications were excluded based on the inclusion criteria, seven publications were extracted. No clinical pathways for BPSD management were identified.

There are two types of interventions primarily used to manage BPSD: pharmacological treatments, and non-pharmacological approaches. It is generally agreed that non-pharmacological approaches should be the first-line intervention.[12-14] Clinical practice guidelines and guidance from key government health bodies recommend assessment of causative factors and adoption of person-centred strategies to manage the underlying cause(s) of behaviour, which may be environmental, psychosocial, and/or physiological. Evidence suggests that psychotropic drugs should be avoided where possible and used only if there is a risk of harm to self or others [4,13-16] due to the increased risk of serious adverse events linked to these medications.[13] When pharmacological treatment is appropriate it should always be used in conjunction with consistent non-pharmacological strategies, and monitored regularly.[13,15,17,18]

The information found in the literature was collated into process stages based on BPSD risk management and care principles. These stages were:

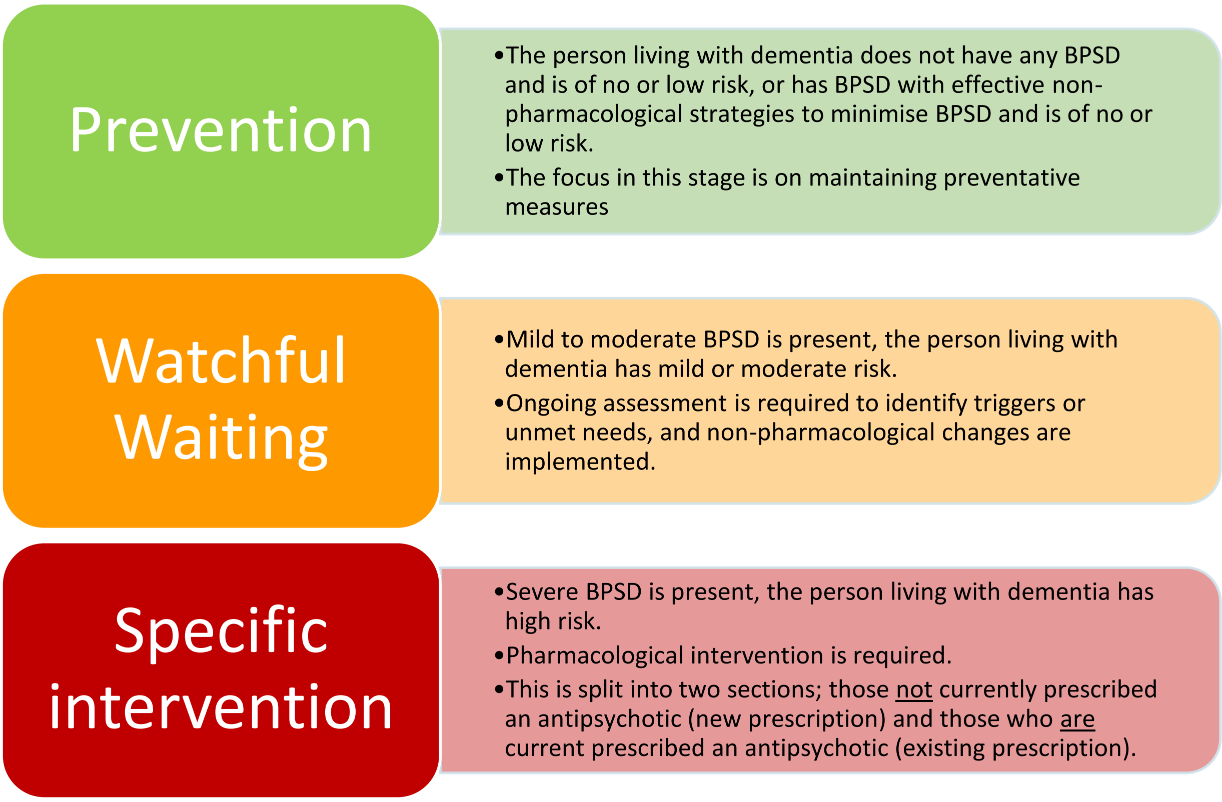
- 'Risk assessment' – an assessment of the person's current health and wellbeing to enable later identification of possible causes or triggers for any changes in the person's behaviour;
- 'Prevention (no or low risk)' – this includes person-centred care based on knowledge of the person, either first hand or through the person living with dementia, their family or other caregivers;
- 'Watchful waiting (mild to moderate risk)' – addressing unmet needs and introducing individualised non-pharmacological interventions;
- 'Escalation (high risk)' – immediate action in high-risk situations, including referral to acute or specialist services; and
- 'Pharmacological interventions' – medication management.

These stages were identified within the literature as critical aspects to be addressed in the evidence-based management of BPSD in RACFs, that is coordinated and managed by nurses and supported by other care staff.

Phase 2: Pathway development

The literature identified in Phase 1 of this study was used to develop the clinical pathway. Recommendations from the publications were extracted and arranged into a draft clinical pathway (flowcharts and instruction booklet) which outlined the process for BPSD management at different risk and severity levels based on the best practice evidence. The draft pathway was contextualised in consultation with the multidisciplinary team at the RACF test site (site manager, nurses, clinical care consultants, clinical leaders, a general practitioner, and a pharmacist) who gave feedback and expert advice from the local context. This process was an iterative one; discussions regarding local needs and processes were made, and feedback was taken into consideration leading to adjustments to the clinical pathway for ease of use and clarity of treatment options and required documentation. The clinical pathway was then re-assessed for accuracy and adherence to the best practice evidence and the updated version was presented to the multidisciplinary team for further discussion.

The pathway follows a basic stepped care model based on a colour-coded traffic light system (Figure 1). Green represents 'prevention', Amber represents 'watchful waiting', and Red represents 'specific intervention'.



Prevention

- The person living with dementia does not have any BPSD and is of no or low risk, or has BPSD with effective non-pharmacological strategies to minimise BPSD and is of no or low risk.
- The focus in this stage is on maintaining preventative measures

Watchful Waiting

- Mild to moderate BPSD is present, the person living with dementia has mild or moderate risk.
- Ongoing assessment is required to identify triggers or unmet needs, and non-pharmacological changes are implemented.

Specific intervention

- Severe BPSD is present, the person living with dementia has high risk.
- Pharmacological intervention is required.
- This is split into two sections; those <u>not</u> currently prescribed an antipsychotic (new prescription) and those who <u>are</u> current prescribed an antipsychotic (existing prescription).

Figure 1. Colour coded traffic light risk assessment system.

Colour coded flowcharts assist staff with determining the best care and treatment for each person living with dementia, while an instruction booklet gives details on the processes and documentation required for each step. The instruction booklet also contains background information on BPSD, types of nonpharmacological interventions, person-centred care information and strategies recommended in the literature, and a BPSD consultation form developed to step through the antecedents, behaviour, and consequences of the behaviour for staff to work through.

Phase 3: Trial of the pathway at the test site.

The pathway became the standard practice at the test site for five months. Due to the onset of the SARS-CoV-2 (COVID-19) pandemic the trial was paused for five months while the RACF adapted to the new COVID-19 requirements.

Pre- and post-implementation data collection

A survey of the nurses and clinical care leaders was conducted pre and post implementation period. The population groups at both surveys consisted of approximately 20 nurses, chaplains, and clinical leaders. Due to the disruptions of COVID-19 on the timeline of the survey there was an extended period between the pre and post intervention surveys (approximately 12 months). In this time the original clinical team involved in the development of the pathway moved on from employment at the test site; the site operations manager, physiotherapist, occupational therapist and Wellbeing Co-oridnator and the chaplain remined. The survey asked respondents to self-rate their knowledge and confidence in managing BPSD, the clarity of documentation regarding guidance on managing BPSD, the treatment options available and the recording of treatments actions in their workplace, perceived usefulness of a checklist or pathway (pre) or actual usefulness of the clinical pathway (post) and any dementia specific education they had completed. Email invitations were sent to the nurses, lifestyle coordinators and clinical leaders at the test site (n = 20). Ten respondents participated in the pre intervention survey (50% response rate), and nine respondents participated in the post intervention survey (45% response rate).

A record audit was conducted of the six months prior to the pathway being implemented at the site and again after the trial period had ended, covering the five months of the trial period. The audit was conducted on 10% of the residents who were permanent residents of the site (i.e. not short term or respite care), and had a diagnosis of dementia, chosen at random from the electronic health records. The audit assessed record keeping and clinical outcomes before and after the implementation of the pathway.

Finally, meeting times were arranged at the end of the trial period with the staff who used the pathway to discuss any feedback relating to the acceptability of the pathway their thoughts on using it, and any suggestions for improvements or changes to the pathway or to the implementation of it.

Discussion of results

The feedback from participants was that the pathway shifted the focus from the behaviour itself to the causes of the behaviour, and this has revolutionised how all staff work with, and think about, the resident’s dementia and BPSD. By looking for the causes of the behaviour the care has shifted in regard to how the staff approach their interactions with the resident and they found this resulted in more successful outcomes. Staff felt this shift in approach has also resulted in significantly less antipsychotic use and BPSD incidents. Staff felt the pathway removed the ad-hoc approach to communication and care delivery within the team in the multidisciplinary meetings, making them much more guided and directed. They also felt it improved staff communication about care and actions to be taken and gave them more confidence in their decisions around care for the residents, particularly if care needed to be escalated. The staff highlighted that the use of the pathway and the resulting documentation had given them a more directed way to consult with GPs and Geriatricians, regarding care planning.

Staff said using the pathway increased their job satisfaction, and knowledge and confidence in managing BPSD. They found much more satisfaction in finding a solution that worked for the resident rather than using medication to manage behaviours. All respondents said they would take the pathway process with them if they left Eldercare.

The allied health team used the clinical pathway to develop their own referral pathway for residents displaying BPSD during manual handling, transfers and activities of daily living based on the clinical pathway RBRC developed. They noted this assisted in earlier detection of BPSD by personal care workers and allied health staff.

Respondents said there was more paperwork involved in the set-up stages of the care plans and placing a resident on the pathway. However, they noted this led to reduced work in other areas as the residents were less likely to have BPSD incidents, and the increased documentation made handovers easier and improved the continuity of care over time, providing structure and guidance.

Suggested changes to the pathway from the site staff

All participants felt knowledge of the pathway aims and general outline needs to be shared with all staff, not just the permanent nursing staff and clinical care leaders. They felt that anyone working on the site who was likely to have regular interactions with the residents (agency nurses, allied health, personal care workers, chaplain, kitchen and cleaning staff) needed to be aware of the purpose of the pathway. They felt they may notice something and could bring it to the attention of the nurses, but also that they may inadvertently trigger a BPSD incident if they were not aware of the actions being taken based on the pathway.

Barriers to implementation

Staff	Education	Extraneous factors
• High staff turnover during the implementation and trial period • The use of agency staff who do not know about the pathway • Not including personal care workers	• Staff knowledge of dementia and BPSD • Not educating personal care workers and agency staff in the use of the pathway	• COVID-19

Enablers to implementation

Staff	Education	Extraneous factors
• Consistent project leadership (champion) at the site level • Inclusion of allied health staff and the site chaplain • Improvements in care and outcomes increased confidence and drive to use the pathway • Embedding it into the weekly multidisciplinary meeting kept it on everyone’s agenda and ensured focus on the pathway at least once a week	• Making it standard practice across the site • Educating the clinical leaders in how best to implement it	• Ensures the site is able to show easily and clearly that they are meeting all national regulatory reporting and practice/audit requirements • Addresses a high-risk area of care • Provides all documentation required for new Serious Incident Response Scheme

Conclusion

The BPSD clinical pathway was easy to implement and well accepted by nursing and clinical care staff as part of standard care and practice. Staff have indicated the pathway has become embedded in the site processes and they will continue to use it even though the trial period has ended. Staff self-reported an increase in their confidence to manage BPSD and a perceived reduction in both antipsychotic use and BPSD incidence, as well as improvements in communication within and between site staff, medical professional and resident's and their family and carers. Allied health staff used the pathway to initiate risk assessment during manual handling and other care tasks that allowed them to earlier flag potential BPSD in residents. The pathway provides accessible documentation that both shows, and ensures, the site is meeting national audit and reporting outcomes required of RACFs. Use of the pathway makes it easy for site managers to provide this data with little addition to staff workload.

Minor changes have been suggested to improve the overall usability and clarity of the pathway and the implementation process. The preliminary outcomes appear to indicate it could be useful for the safe, person-centred care of BPSD in RACFs, but this will need to be tested across multiple facilities before efficacy in reducing antipsychotic use and improving BPSD incidents can be shown.

Considerations to build an education package for the BPSD Clinical Pathway has been suggested by staff and management involved in the trail as a step towards embedding the pathway across Eldercare sites as routine quality care, and to inform and guide agency or relieving staff.

Feedback from the site manager

Scan the QR code below to hear the feedback on the project provided by Jo Wagner, the Eldercare site manager at the volunteer test site.

Rosemary Bryant AO
Research Centre

Preamble

The purpose of this report is to outline the steps undertaken to develop a clinical pathway for the support and management of behavioural and psychological symptoms of dementia (BPSD) in residents living in an Australian residential aged care facility (RACF). The report outlines the process from finding the current best practice literature, through development and then testing of the pathway at one memory support unit operating in South Australia.

The report is presented in the 3 Phases of project development:

Phase 1: the literature review

Phase 2: the development of the clinical pathway

Phase 3: the feasibility trial

Background

Dementia is the second leading cause of death in Australians and three in 10 people over 85 years, and one in 10 people over 65 years have been diagnosed with this disease.[1] According to Dementia Australia,[2] there are an estimated 459,000 Australians living with dementia and approximately 1.6 million people involved in their care. People diagnosed with dementia often experience BPSD, which can include aggression, apathy, anxiety, agitation, psychotic symptoms, depression, disinhibited behaviours, wandering, nocturnal disruption and vocally disruptive behaviour.[4,13,15,18] BPSD can impact both the person living with dementia and their carer(s), and can significantly affect a carer's ability to care effectively for the person, can contribute to stress and burn-out of personal care staff, and adversely affect the quality of life of the person living with dementia, particularly during relocation to a RACF.[13] Appropriate and safe management of BPSD is an important aspect of dementia care.

The management of BPSD in Australia is informed by the seven-tiered model of service delivery developed by Brodaty et al.[3] The model is based on severity and prevalence of BPSD, ranging from no dementia (tier 1) through tiers of increasing behavioural disturbance (no BPSD, mild, moderate, severe, and very severe BPSD) to extreme BPSD with the propensity for violence (tier 7), which is rare.[3] Each tier is associated with a different model of intervention, and people may move up or down between tiers depending on their condition, care, and response to interventions provided.[3] This model estimates up to 90% of people with dementia will experience BPSD at some point, and the prevalence of mild (tier 3) through to severe (tier 5) BPSD is approximately 60% of the population of older people living with dementia.[4] BPSD are highly complex and varied with many contributing factors, however, these changes in behaviour can often be due to an unmet need or a sensation that the person living with dementia is experiencing but is unable to communicate verbally.[19]

RACFs are key providers of support to those experiencing more severe forms of BPSD (Tiers 3-6, including physical aggression, severe depression, and suicidal ideation), who require care in dementia specific facilities or by case management under a dementia specialist team.[4] This necessitates that RACFs ensure robust, evidence-based practice (EBP) to manage BPSD as part of providing safe, high quality, person-centred care to residents; often available in the form of clinical practice guidelines (CPGs). However, CPGs can be large documents, making implementation and accessibility to all levels of health care workers challenging.[18]

Clinical pathways based on CPG are used to provide a structured plan that improves quality of care, reduces variation and maximises treatment or health outcomes in a specific population group.[5] They do this by specifying standardised steps or guidelines for what to do in certain situations, and when to implement each step. Clinical pathways provide a structured plan of care based on the current best evidence, which can be contextualised to the local setting with the aim of standardising care for that clinical issue.[5] Currently there are gaps in operationalising safe and effective care for people living with dementia in Australia, which highlights the need for research into creating or contextualising clinical pathways for use by nursing and personal care staff in RACFs. This was highlighted by the Oakden inquiry, conducted by the Independent Commissioner Against Corruption in South Australia and the concerns raised in that report about the management of people living with dementia.[6] Subsequent to this, the Government of the Commonwealth of Australia conducted a Royal Commission into Aged Care Quality and Safety from 2018 to 2021.[7] The Royal Commission made 148 recommendations required to bring the care of Australia's older populations to an acceptable, safe and dignified level[9] (see the Oakden Report[8] and the Royal Commission into Aged Care Quality and Safety Interim Report[7] and Final Report[9] for in-depth analysis of these gaps, and the recommendations on how to address them). On 1 July 2019, the Aged Care Quality and Safety Commission introduced new Aged Care Quality Standards for RACFs. The new Standards place the consumer at the centre of their care, and reinforce the need for using evidence-based practice when providing care to consumers.[10]

The prevalence of dementia in RACFs combined with the current inconsistencies reported in operationalising safe, dignified, and respectful care for people living with dementia needs to be addressed. An evidence based clinical pathway for use by nurses in RACFs to prevent or manage the onset of BPSD, thus reducing the number of emergency department visits, and specialist referrals for escalations of BPSD would be beneficial.

Aims and objectives

The desired outcome of the research was to develop or contextualise a clinical practice guide or clinical pathway, based on current best practice guidelines, for implementation in Australian RACFs. The clinical pathway aimed to assist in making the nurses using it feel confidence in their progression through the BPSD treatment options, ensure EBP has been followed, and ensure that documentation to support all decisions are easily accessible for monitoring, future care decisions and service auditing purposes.

The objectives of this project were to (1) search the literature to find current clinical pathways or tools to apply best practice evidence or guidance on the management of BPSD in aged care settings; (2) contextualise an existing, or develop a new, clinical pathway with key check points based on this literature and; (3) assess the acceptability and implementability of the clinical decision-making pathway in the memory support unit of one RACF.

Methodology

Clinical need

The Rosemary Bryant AO research Centre (RBRC) was approached by the site manager at one Eldercare Inc. site in South Australia to research ways to improve the management of BPSD in RACF residents living with dementia. After discussions with the research team, it was decided that a clinical care pathway for the management of dementia would be the most useful tool for the needs of the Eldercare site. The RBRC team followed a stepped process (Figure 2) to achieve the overarching project aim of providing a clinical pathway, contextualised to the local setting. The clinical pathway was then tested for feasibility and implementability at the Eldercare Trowbridge House, in Payneham South, South Australia.

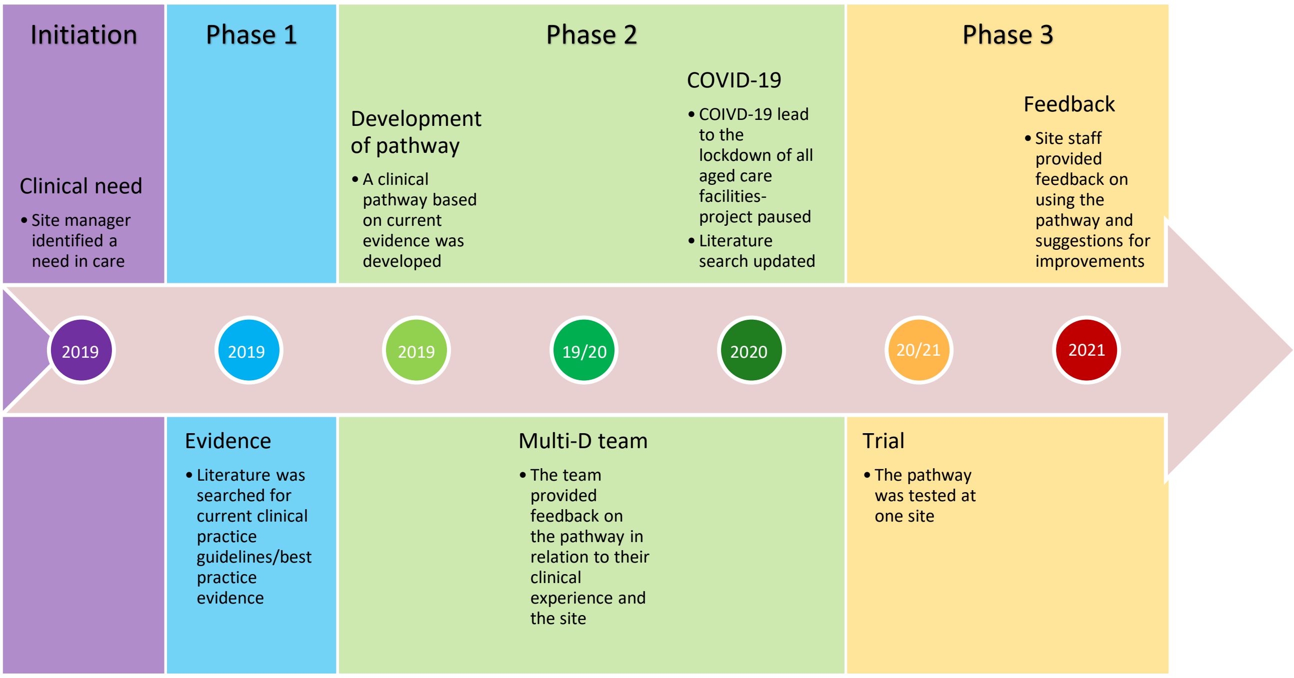


Figure 2. Clinical pathway development process

Ethics

This project 202613 has been approved by the Human Research Ethics Committee of the University of South Australia.

Phase 1: The literature review

Aim

An iterative, systematic search was conducted to find CPGs and/or pathways for the successful and safe evidence-based prevention or management of BPSD in RACFs.

Methodology

The review followed the PRISMA reporting guidelines.[11] Combinations of terms, phrases and Medical Subject Headings (MeSH) relevant to the concepts of dementia, BPSD, behavioural changes, expressions of unmet need, residential aged care, and clinical pathways or practice guidelines were searched in each evidence source. A full search strategy for Medline is provided in Appendix I. Results were limited to English language and restricted to the last 10 years to ensure any guidelines found were relevant to the current healthcare context. Database searches were completed in November 2019.

The following databases were searched: The Cochrane Library, Embase, Ovid Emcare, Medline (PubMed), PsychInfo and Joanna Briggs Institute EBP database. Reference lists and personal libraries of the authors were searched to find additional relevant literature. The following grey literature sites were also searched: NHMRC Guidelines Portal, SA Health, Dementia Australia, RNAO Best Practice Guidelines, NICE, GIN, CPG Infobase, Evidence Search and Google.

Study selection criteria

The search results from each database were exported into EndNote,[20] and duplicates were removed. The results were then imported into Covidence systematic review software.[21] Studies underwent a two-part screening process. Articles (both peer reviewed and grey literature) were first screened by title and abstract by two reviewers (DF, KK). Relevant articles were then read in full for study inclusion by one reviewer (KK).

Publications were included if they were: (i) a clinical practice guideline for the management or care of dementia, with specific mention of BPSD; (ii) a tool, protocol, pathway or guide for the prevention or management of BPSD in a RACF; or (iii) a description of the development, testing or use of a tool, protocol, pathway or guide for the prevention or management of BPSD by nurses, in a RACF. Exclusion criteria included: opinion pieces, conference papers and abstracts, study protocols, not considering management of dementia related behaviour change, not specific to RACFs (i.e.: acute and community settings), studies that did not consider non-pharmacological options, publications older than 10 years at the time of the search, and studies not in English.

Results

Systematic searching of evidence sources identified 509 unique publications for title and abstract screening. Of these, 444 articles were excluded as ineligible and 65 publications were screened in full text. A further 58 publications were excluded based on the inclusion criteria (Figure 3). In total, seven publications were extracted.

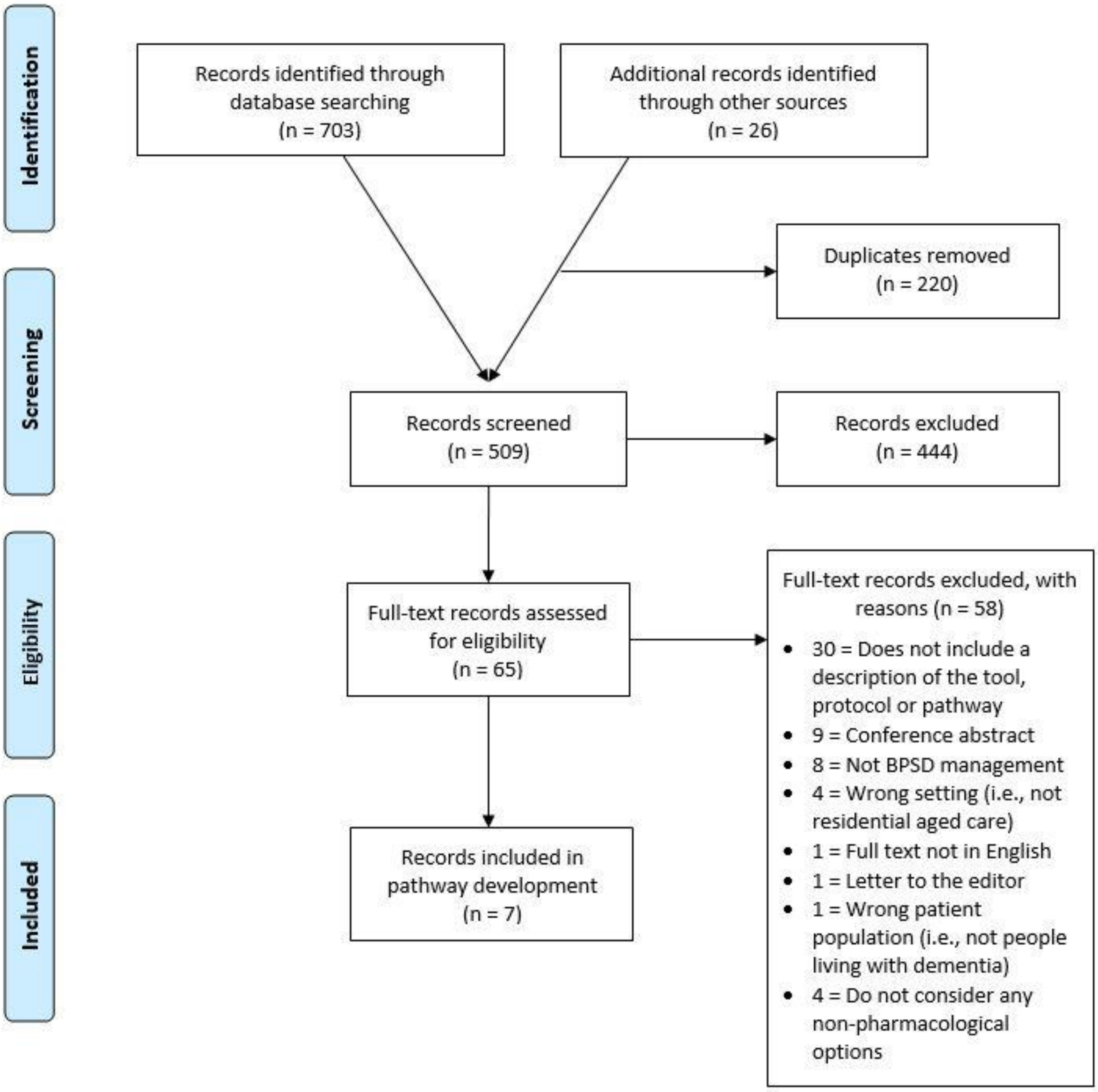


Figure 3. PRISMA flowchart of the study selection process

Characteristics of included studies

No clinical pathway specific to the management of BPSD was identified. The seven included publications included two operational guides for clinicians,[17,18] four CPGs, [4,13,15,16] and one systematic review.[22] All were assessed for methodological quality, and all were considered low risk of bias (Table 1).

Table 1. Characteristics of the included references

Author, date, publication type	Country	Topics	CAT score/total
Silva et al., 2018 [22], Systematic Review	N/A	''Snoezelen'' (TM) or multisensory stimulation for the prevention or management of BPSD.	9/11 (low risk of bias)
Burns et al., 2012 [4], CPG	Aust	CPG for BPSD care, aimed at DBMAS service providers.	12/14 (low risk of bias)
Guideline Adaption Committee, 2016 [13], CPG	Aust	CPG for dementia care, aimed at health and aged care staff. Has companion implementation document.	14/14 (low risk of bias)
Bjerre et al., 2018 [16], CPG	Canada	CPG for deprescribing antipsychotics in dementia care, aimed at clinicians, pharmacists and prescribing nurses.	13/14 (low risk of bias)
NICE, 2018 [15], CPG	UK	CPG for diagnosing and managing dementia, aimed at health and social care professionals/providers, people living with dementia and their families.	13/14 (low risk of bias)
Victorian Department of Health and Human Services, 2018 [17], Operational guidance for practitioners	Aust	Standardised care processes for BPSD management	6/6 (low risk of bias)
National Health Service, 2011 [18], Operational guidance for practitioners	UK	Best practice guide for management of BPSD	5/6 (low risk of bias)

There are two categories of intervention primarily used to manage BPSD: pharmacological treatments, such as psychotropic drugs; and non-pharmacological approaches, such as tailored activities, physical exercise, music and art therapies, and environmental modifications. It is generally agreed that non-pharmacological approaches should be the first-line intervention.[12-14] Clinical practice guidelines and guidance from key government health bodies recommend assessment of causative factors and adoption of person-centred strategies to manage the underlying cause(s) of behaviour, which may be environmental, psychosocial, and/or physiological. Evidence suggests that psychotropic drugs should be avoided where possible and used only if there is a risk of self-harm or harm to others,[4,13-16] due to the increased risk of serious adverse events linked to these medications.[13] When pharmacological treatment is appropriate it should always be used in conjunction with consistent non-pharmacological strategies, and monitored regularly.[13,15,17,18]

The information found in the literature was collated into process stages based on BPSD risk management and care principles (Table 2). These stages were: 'risk assessment' – an assessment of the person's current health and wellbeing to enable later identification of possible causes or triggers for any changes in the person's behaviour; 'prevention (no or low risk)' – this includes person-centred care based on knowledge of the person, either first hand or through the person living with dementia, their family or other caregivers; 'watchful waiting (mild to moderate risk)' – addressing unmet needs and introducing individualised non-pharmacological interventions; 'escalation (high risk)' – immediate action in high risk situations, including referral to acute or specialist services; and ‘pharmacological interventions’ – medication management. These stages were identified within the literature as critical aspects to be addressed in the evidence-based management of BPSD in RACFs by nurses and other care staff.

Table 2. Summary of the evidence that informed the development of the pathway stages

Phase of the pathway	**Brief summary of evidence**
Risk assessment	A comprehensive health assessment, including a thorough medical review, should be conducted on admission, on change in level of risk, or at initiation of changes in the person’s behaviour, to detect any general health problems that may impact on quality of life, wellbeing or other symptoms.[4,17,18]
Prevention (no or low risk)	The preferred approach is to minimise the development or impact of symptoms by providing person-centred care. Person-centred care is based on understanding the person’s history and experiences (e.g. work, hobbies, family, environment and religious beliefs), their likes and dislikes, and taking their perspective into account. It is also important to ensure that the person has the opportunity for human contact and warm relationships with others.[4,18] Care plans should be developed in collaboration with the person with dementia and their family or nominated decision-maker, should support the person’s ability to be involved in decisions about their care, and should provide education and psychosocial support to the person with dementia and their family. [4,15,18]
Watchful waiting (mild to moderate risk)	Where risks or behaviour severity are mild or moderate (i.e. not causing serious distress or harm), a comprehensive assessment should be carried out as standard in response to any change in behaviour, and nonpharmacological approaches to care should be the first line of intervention. Changes in treatment and care and the use of behavioural management interventions could avoid the use of antipsychotic drugs in people with dementia.[4,13,15,17,18]
Escalation (high risk)	Immediate action is required if the risk or behaviour severity is high (occurring frequently, causing serious distress or harm to self or others). Interventions to prevent harm can include referral to acute or specialist services, and/or the swift introduction of nonpharmacological and pharmacological approaches to risk mitigation.[13,15,17,18] It is likely that responses to high risk BPSD involve a combination of these immediate actions, plus those discussed above, including risk assessment and person-centred care strategies.
Pharmacological interventions	The use of psychotropic medications in people with BPSD can be associated with potential harms and are not effective at controlling all symptoms; however, pharmacological interventions may need to be considered in situations of high risk BPSD.[4,13,15-18,22] They should only be integrated into the care plan upon consultation with the family/carer(s), the person living with dementia and a GP or geriatrician, after a full discussion with all parties about the possible benefits and risks of treatment.[4,13,15-18,22] Target symptoms should be identified, quantified and documented; comorbid conditions, such as depression, should be considered; and the dose should be initially low and titrated upwards if necessary.[17] If efficacy is not observed within a relatively short timeframe (usually one to two weeks), treatment should be discontinued.[13,17]

For the full details on the conduct and results of the literature review please see Kennedy, K, Forsythe, D, Wagner, J, Eckert, M. 2021. Clinical pathways for the evidence-based management of Behavioural and Psychological Symptoms of Dementia in a residential aged care facility: a rapid review. Australasian Journal on Ageing. https://doi.org/10.1111/ajag.12990

Phase 2: Pathway development.

The literature identified in Phase 1 of this study was used to develop the clinical pathway. Staff, management, and consultant healthcare providers at Eldercare's Trowbridge House gave feedback and expert advice from the local context during the development of the clinical pathway.

Contributing publications

The core of the information included in the clinical pathway was based on recommendations from the Clinical Practice Guidelines and Principles of Care for People with Dementia,[13] an Australian CPG. This CPG was adapted to the Australian health care setting in 2016, from a United Kingdom CPG on dementia care. The United Kingdom CPG was further updated in 2018,[15] and this newer version was used to check the currency of the Australian CPG recommendations. This content was supplemented by Australian-specific operational guides from Victoria Health,[17] an Australian CPG developed for Dementia Behaviour Management Advisory Service (DBMAS) providers,[4] a systematic review on the effectiveness of multisensory stimulation [22] and a Canadian CPG on deprescribing antipsychotics for BPSD.[16]

Recommendations from these publications were extracted and arranged into a draft clinical pathway (flowcharts and instruction booklet) which outlined the process for BPSD management at different risk and severity levels based on the best practice evidence. The draft pathway was then contextualised in consultation with the multidisciplinary team at the volunteer RACF test site. This process was an iterative one; discussions regarding local needs and processes were made, and feedback was taken into consideration leading to some adjustments to the clinical pathway for ease of use and clarity of treatment options and required documentation (Figure 4). The clinical pathway was then re-assessed for accuracy and adherence to the best practice evidence and the updated version was presented to the multidisciplinary team for further discussion. This process was repeated until agreement was reached between all parties. The multidisciplinary team included the site manager, clinical care consultants, clinical leaders, a general practitioner, and a pharmacist.

Development of the clinical pathway

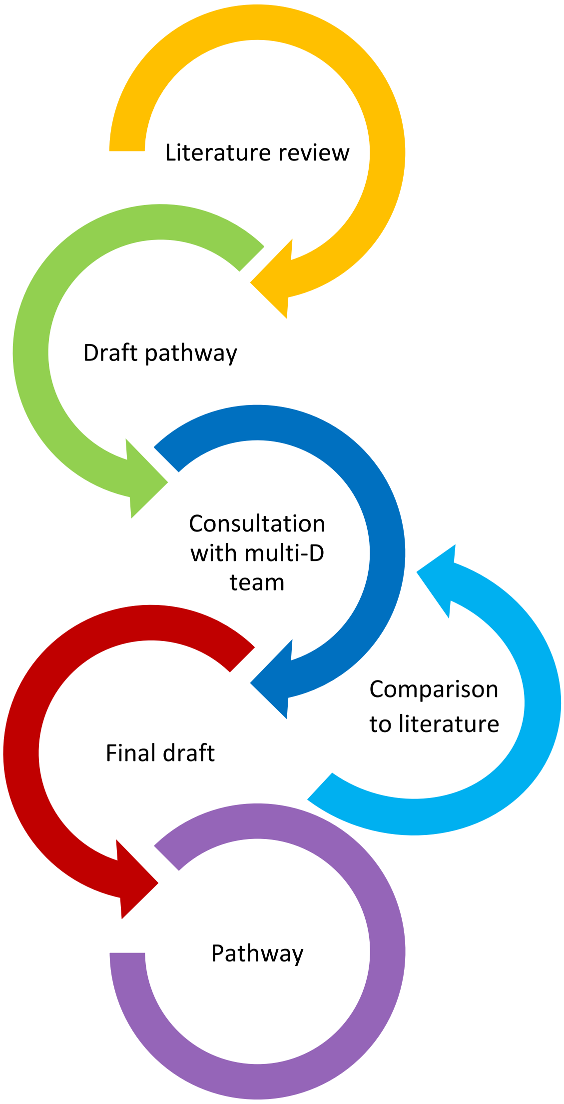


Figure 4. Steps in the development of the clinical pathway

The clinical pathway

The pathway follows a basic stepped care model based on a colour-coded traffic light system to indicate risk level and required actions (Figure 5). Green represents 'prevention'; the person living with dementia does not have any BPSD, or has BPSD with effective non-pharmacological strategies to minimise BPSD and is of no or low risk. The focus in this stage is on prevention through clinical assessment and effective non-pharmacological strategies, and/or maintenance through preventative strategies. On admission or at any change in the level of risk a comprehensive and holistic clinical, wellbeing and medical review should be conducted to detect any general health problems or issues that may impact on a person's quality of life and wellbeing. A care plan should be developed and communicated to all relevant stakeholders and reviewed regularly (6 monthly) or if any changes to the person's behaviour leading to an increase in risk level should occur.

Amber represents 'watchful waiting'; mild to moderate BPSD is present; the person living with dementia has mild or moderate risk. Ongoing assessment is required to identify triggers or unmet needs, and non-pharmacological changes are implemented. A comprehensive and holistic clinical assessment should be completed as for 'prevention', but the focus at this stage is on the ongoing assessment of triggers or unmet needs identified, and implementing non-pharmacological changes to avoid the use of antipsychotic drugs. Referrals are made if required and ongoing reviews and monitoring of behaviours occur. Strategies to manage violence, aggression, and extreme agitation, including de-escalation techniques are used. It is essential to discuss the person's symptoms and possible triggers with staff and family to understand possible reasons for the symptoms and ways to engage the person in activities. It is also essential to have a thorough discussion about what strategies are working to support the person living with dementia with both staff and family. The care plan is developed, communicated, and reviewed regularly to ensure it is effective.

Red represents 'specific intervention'; severe BPSD is present, the person living with dementia has high risk to themselves or to others. Pharmacological intervention is required. The specific intervention is split into two sections; (1)those not currently prescribed an antipsychotic (new prescription) and (2) those who are currently prescribed an antipsychotic (existing prescription). Pharmacological interventions should only be initiated or maintained in consultation with the family and/or carer(s), the person living with dementia, and a GP or geriatrician and only once certain conditions have been met. These conditions include, but are not limited to, consultation with the person living with dementia and their healthcare team, carer(s) and family about the possible benefits and risks of treatment. Also, full documentation and tracking of target symptoms, and regular monitoring of effectiveness of medication on these symptoms is required, with a deprescribing plan in place for either reduction in symptoms or in case of adverse effects. Pharmacological options are based on the best available evidence and should be used within an overall care plan tailored to the person. All antipsychotic prescriptions should be monitored carefully and reviewed every 4 weeks with deprescribing considered at 12 weeks.

Prevention

Green - No BPSD, no or low risk

Maintain preventative measures

Watchful Waiting

Amber – Mild or moderate BPSD, mild or moderate risk

Assessment and non-pharmacological interventions

Specific Intervention*

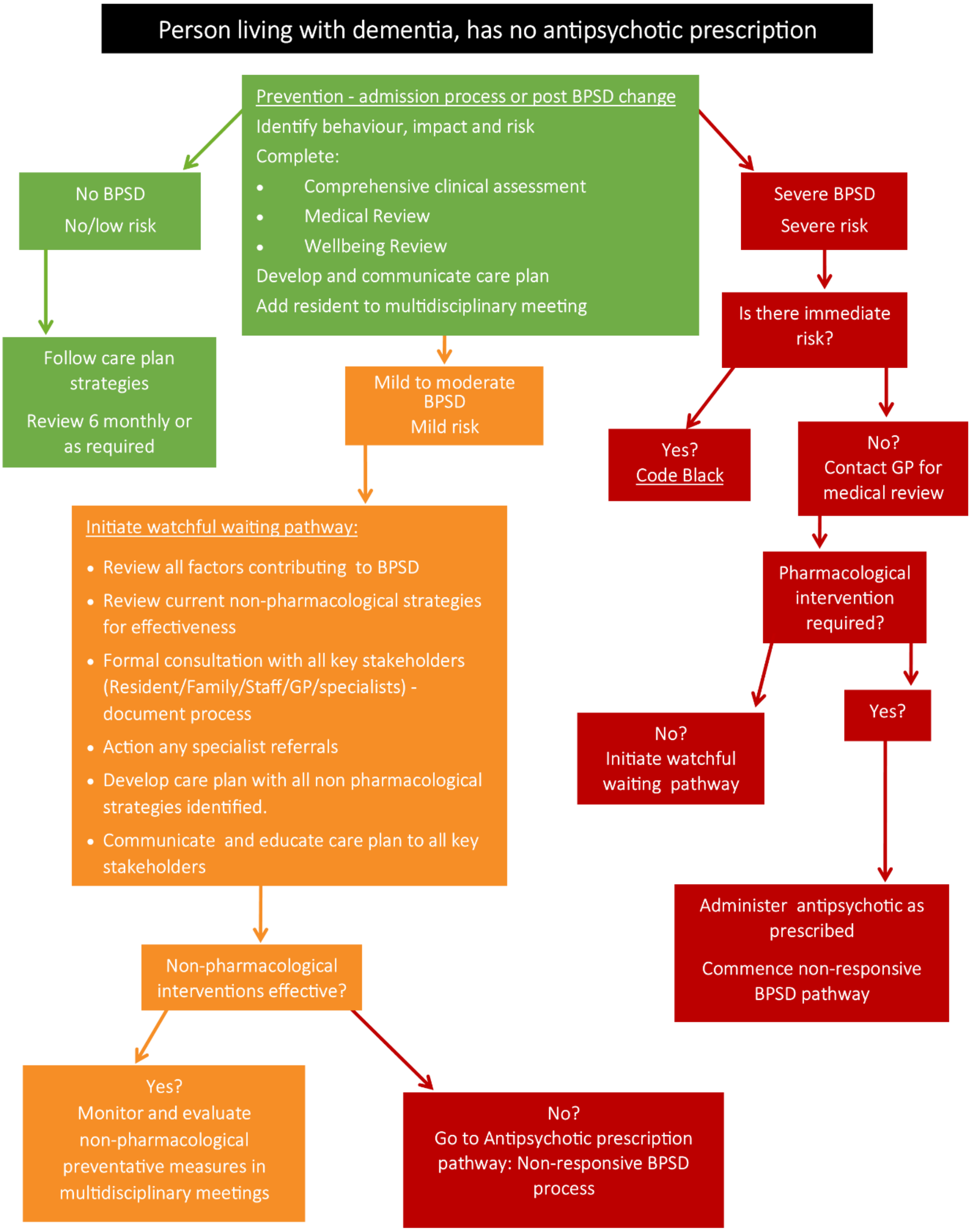
Red – Severe BPSD, high risk

Pharmacological intervention

*The Specific Intervention section has been split into 2 - those not currently prescribed an antipsychotic (new prescription), and those who are currently prescribed an antipsychotic (existing prescription).

Figure 5. The colour coded traffic light system of the clinical pathway

Colour coded flowcharts were developed to assist staff with determining the best care and treatment for each person living with dementia (Figures 6 and 7), while the instruction booklet gives details on the processes and documentation required for each step. The instruction booklet also contains background information on BPSD, types of nonpharmacological interventions, person-centred care information and strategies recommended in the literature, and a BPSD consultation form developed to step through the antecedents, behaviour, and consequences of the behaviour for staff to work through.



Person living with dementia, has no antipsychotic prescription

Prevention - admission process or post BPSD change

Identify behaviour, impact and risk

Complete:

- Comprehensive clinical assessment
- Medical Review
- Wellbeing Review

Develop and communicate care plan

Add resident to multidisciplinary meeting

No BPSD
No/low risk

Follow care plan strategies

Review 6 monthly or as required

Mild to moderate BPSD
Mild risk

Initiate watchful waiting pathway:

- Review all factors contributing to BPSD
- Review current non-pharmacological strategies for effectiveness
- Formal consultation with all key stakeholders (Resident/Family/Staff/GP/specialists) - document process
- Action any specialist referrals
- Develop care plan with all non pharmacological strategies identified.
- Communicate and educate care plan to all key stakeholders

Non-pharmacological interventions effective?

Yes?
Monitor and evaluate non-pharmacological preventative measures in multidisciplinary meetings

No?
Go to Antipsychotic prescription pathway: Non-responsive BPSD process

Severe BPSD
Severe risk

Is there immediate risk?

Yes?
Code Black

No?
Contact GP for medical review

Pharmacological intervention required?

No?
Initiate watchful waiting pathway

Yes?

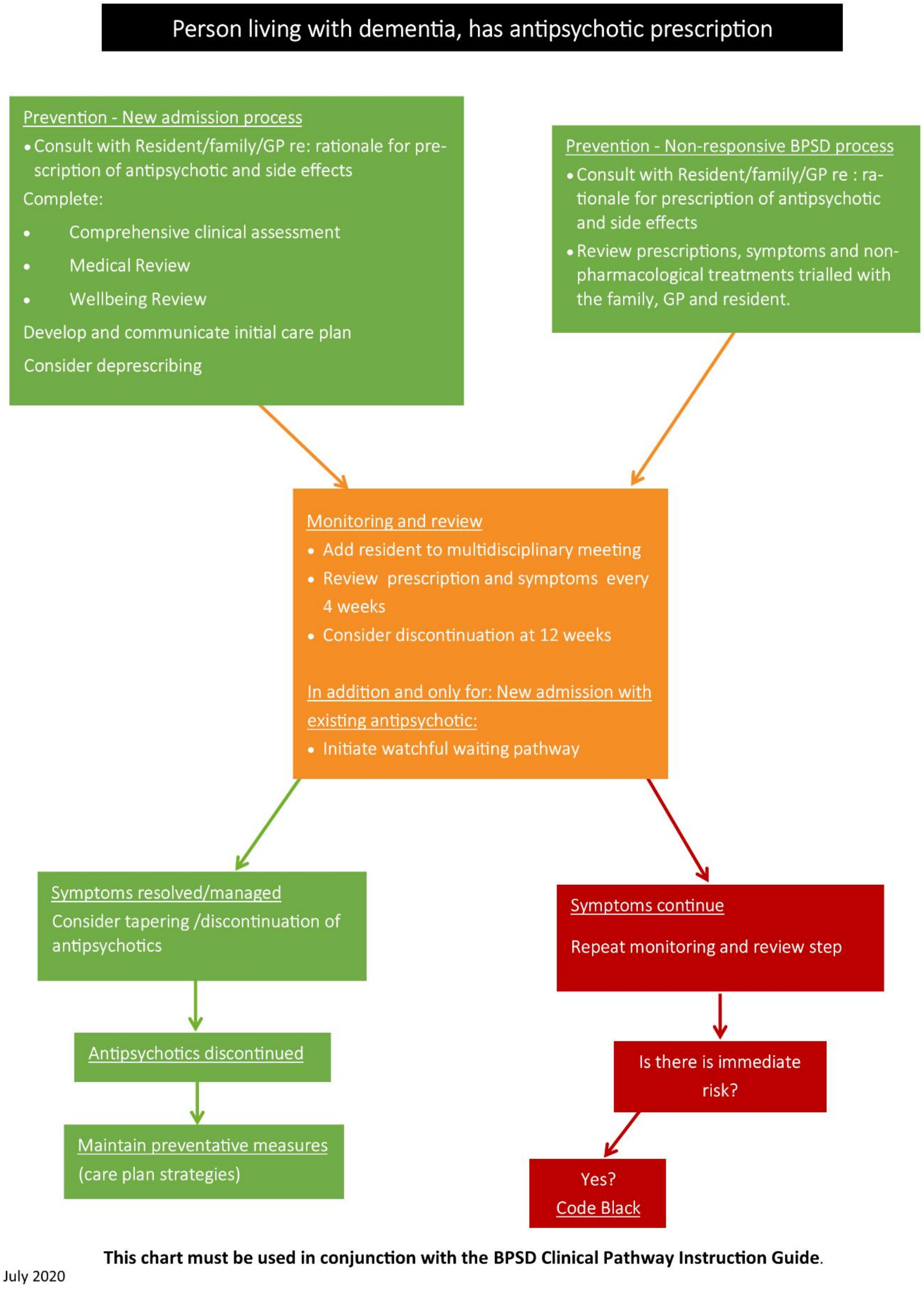
Administer antipsychotic as prescribed

Commence non-responsive BPSD pathway

This chart must be used in conjunction with the BPSD Clinical Pathway Instruction Guide.

July 2020

Figure 6. RBRC No antipsychotic prescription flow chart



Person living with dementia, has antipsychotic prescription

Prevention - New admission process

- Consult with Resident/family/GP re: rationale for prescription of antipsychotic and side effects

Complete:

- Comprehensive clinical assessment
- Medical Review
- Wellbeing Review

Develop and communicate initial care plan

Consider deprescribing

Prevention - Non-responsive BPSD process

- Consult with Resident/family/GP re : rationale for prescription of antipsychotic and side effects
- Review prescriptions, symptoms and non-pharmacological treatments trialled with the family, GP and resident.

Monitoring and review

- Add resident to multidisciplinary meeting
- Review prescription and symptoms every 4 weeks
- Consider discontinuation at 12 weeks

In addition and only for: New admission with existing antipsychotic:

- Initiate watchful waiting pathway

Symptoms resolved/managed

Consider tapering /discontinuation of antipsychotics

Antipsychotics discontinued

Maintain preventative measures

(care plan strategies)

Symptoms continue

Repeat monitoring and review step

Is there is immediate risk?

Yes?

Code Black

This chart must be used in conjunction with the BPSD Clinical Pathway Instruction Guide.

July 2020

Figure 7. RBRC Current antipsychotic prescription flowchart

Phase 3: Trial of the pathway at the test site.

Once the pathway was finalised it was delivered to the site manager at Trowbridge House. Discussions with the site manager and the research team were held as to the best way to introduce the pathway to the site. It was decided that the site manager would present the pathway to the clinical care team leaders, talk them through implementing it and provide copies of the instruction book, with the flowcharts. The pathway became the standard care practice at the test site for five months. Due to the onset of COVID-19 and the lockdown of all aged care facilities, the test site requested a postponement in the start date of the trial in order to ensure they had time to train their staff in the necessary COVID-19 safety procedures first, allowing them the ability to focus on the implementation of the dementia care pathway once these new procedures were in place. The start of the pathway trial period was postponed from April to September 2020. During the testing of the pathway the South Australian Government under the Emergency Management (Residential Aged Care Facilities) Directions 2021 implemented restrictions for staff at RACFs holding jobs at multiple sites.

Implementation of the clinical pathway at the Eldercare site.

Once the pathway had been finalised it was provided to the clinical care team. The site manager conducted education sessions with the clinical care team to familiarise them with the pathway steps and the associated documentation, reporting and management requirements. These consisted of introducing the background and purpose of the pathway, and the changes to current practice involved in following the pathway. New documentation was introduced and guidance on how to fill and file the documentation was provided. The clinical care team were provided with a copy of the pathway flow charts and the instruction guide and advised to refer to these or to the site manager for any questions. The clinical pathway became the standard practice of care in the facility for the duration of the trial period (5 months). Regular researcher support for queries and progress was provided to the site manager through email and phone.

Fourteen residents were placed on the pathway during the five-month trial period, one resident died. Four residents were prescribed antipsychotic medication as a part of the pathway, however, three are in the process of titration (reduction in medication with a goal of halting). The remaining nine residents on the pathway either have no medication prescription (n = 3), had prescriptions on admission to the site and have since been deprescribed (n = 2), were titrated off medication, but are in process of possible recommencement (n = 2) or have a PRN prescription that is not used (n = 2).

Survey

A survey of the nurses and clinical care leaders working at the Eldercare Inc. Trowbridge House RACF was conducted at two time points; before the pathway was implemented at the site and again at the end of the trial period. The population groups at both surveys consisted of approximately 20 nurses, chaplains, and clinical leaders. Due to the disruptions of COVID-19 on the timeline of the survey there was an extended period between the pre and post intervention surveys (approximately 12 months). In this time the original multidisciplinary team involved in the development and implementation of the pathway moved on from employment at the test site; the site manager and the chaplain remined. Therefore, the majority of the people involved in the two time points are different.

Pre-implementation survey responses.

A survey was conducted prior to the development and initiation of the pathway at the site (see Appendix 2 for survey questions). This survey was open from 3/3/2020-23/3/2020, and email invitations were targeted to the nurses, lifestyle coordinators and clinical leaders at the test site (n = 20). The initial email resulted in seven survey responses. The survey was reopened from 21/8/2020 to 1/9/2020 after the COVID-19 lockdown eased, with reminders sent to the group (n = 20) for anyone who had not completed it in the previous round to please do so now. This garnered a further three responses, giving ten respondents in total (50% response rate).

When asked to self-rate their current knowledge in managing BPSD on a five-point Likert scale from excellent to poor, the majority (60%) felt their current knowledge of non-pharmacological treatments for BPSD were very good, (the remainder of responses were 30% good, and 10% average). There was a greater spread of answers for current knowledge of pharmacological treatments; 40% selected very good and the rest split between excellent (10%), good (20%), average (10%) and poor (20%).

Self-reported confidence in their ability to successfully manage a resident with BPSD resulted in only 10% indicating excellent confidence, the remaining were evenly spread in very good, good and average (30% for each response) with none indicating poor confidence.

Participants were asked to rate guidance, documentation or record keeping within the workplace around the management of BPSD on a five-point Likert scale from very clear to very unclear. For the most part respondents felt these were somewhat clear to very clear, with none selecting very unclear for any of the questions (Figure 8).

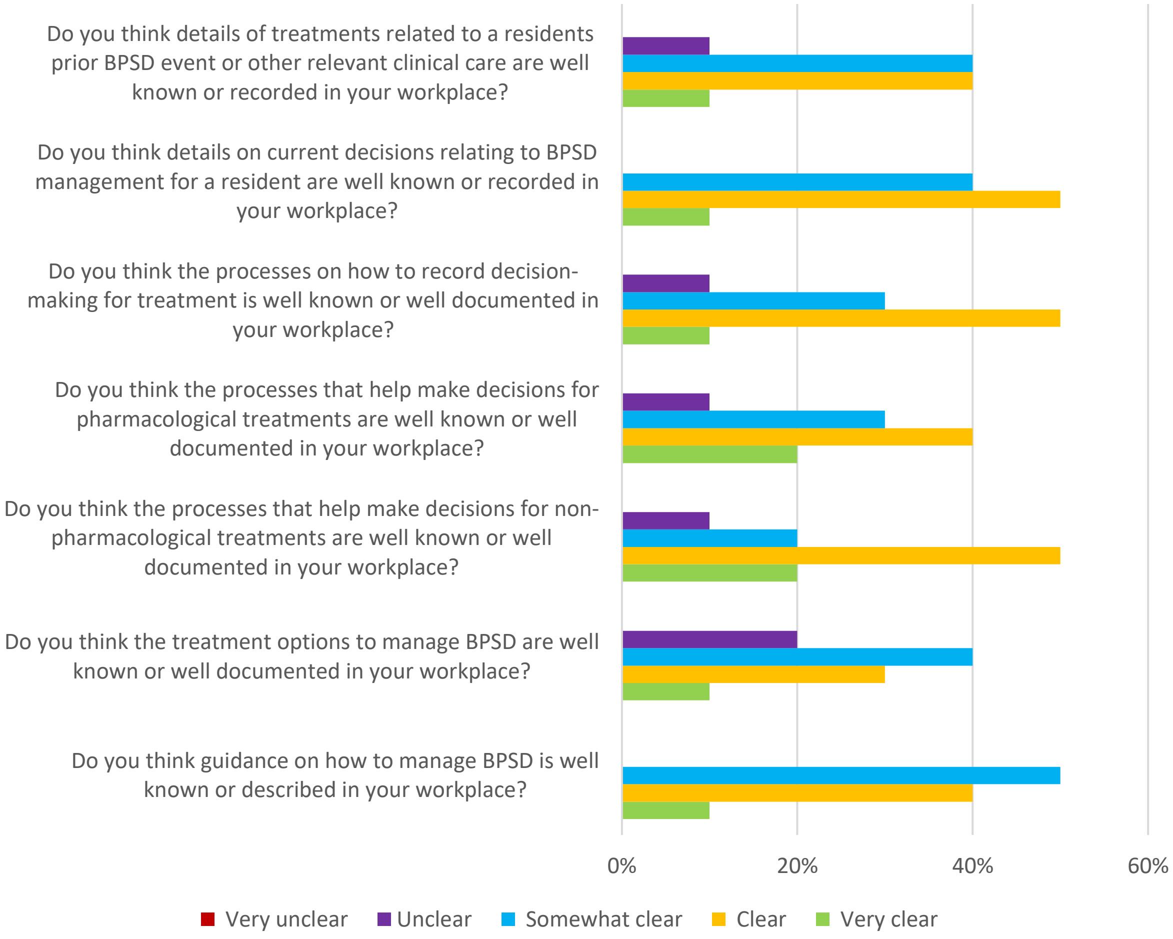


Figure 8. Pre-implementation reported clarity and understanding of workplace documentation

All respondents felt a checklist to guide decision making for the management of BPSD would be beneficial to them in regard to improving their confidence and feelings of support in decision making and management of BPSD. They also all felt it would encourage standardisation of recordkeeping and care at the site.

Survey respondents who noted that they had completed face-to-face dementia specific training courses rated their knowledge and confidence higher than those who had not completed training specific to dementia or noted online continuing professional development modules as their only training source.

Post-implementation survey responses

A survey was developed for distribution after implementation of the pathway at the site. This was based on the first survey questions. Changes made were modifications to question 3 (asking if the new pathway improved self-confidence, and standardised care delivery), and additional questions regarding use of the pathway (see Appendix 3 for post-intervention survey questions). This survey was open from 03/02/2021 to 23/03/2021, and email invitations were targeted to the nurses, lifestyle coordinators and clinical leaders at the test site (n = 20). In total, 9 survey responses were received (45% response rate).

When asked to self-rate their current knowledge of non-pharmacological treatments for managing BPSD on a five-point Likert scale from excellent to poor, 22% rated their knowledge as average while the remainder felt their current knowledge was good (33%), very good (33%), or excellent (11%). Self-rated current knowledge of pharmacological treatments was less with 22% rating their knowledge as poor, and the remainder choosing average (33%), good (22%), or very good (22%).

Self-reported confidence in their ability to successfully manage a resident with BPSD was evenly spread from very good to average (33% for each response).

Participants were asked to rate guidance, documentation or record keeping within the workplace around the management of BPSD on a five-point Likert scale from very clear to very unclear. For the most part respondents felt these were somewhat clear to very clear, with none selecting very unclear for any of the questions (Figure 9).

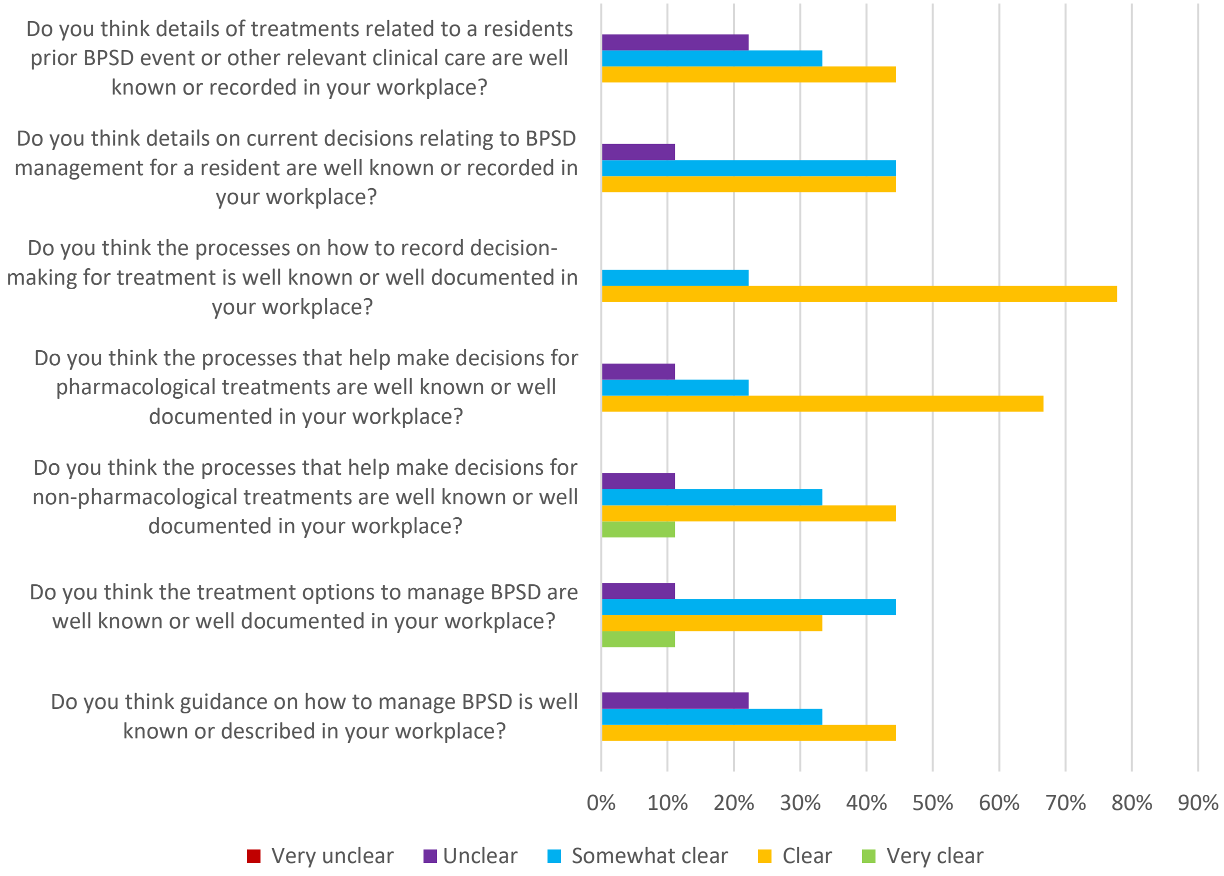


Figure 9. post-implementation reported clarity and understanding of workplace documentation

All but one respondent felt a checklist to guide decision making for the management of BPSD would be beneficial in regard to improving their confidence and feelings of support in decision making and management of BPSD, and standardisation of recordkeeping and care at the site.

All but one respondent felt the clinical pathway was an improvement on prior practice and that the pathway improved record keeping in relation to the management of BPSD. All but two respondents felt the pathway has simplified the process of managing BPSD, the paperwork involved, and that it has improved the resident’s quality of life. When asked if they would like to see anything changed only one respondent said yes. The suggested change was to provide education to all staff in relation to dementia care and BPSD.

Finally, one respondent noted the importance of maintaining communication about the pathway with agency and new staff to ensure continuity of practice.

Staff feedback

Meeting times were arranged with the staff using the pathway to discuss any feedback relating to the acceptability of the pathway, their thoughts on using it, and any suggestions for improvements or changes to the pathway or to the implementation of it. See Table 3 for a summary of the key points provided by staff in the meetings.

Table 3. Summary of the feedback provided by staff involved in the trial.

Topic	Feedback
Suggestions for improvements	• Make sure all staff who have any interactions with residents are inducted to the pathway- this includes PCW, kitchen, chaplain and cleaning staff. • Have pre-recorded videos that can be shown to all new staff: one for everyone as a standard orientation tool for care. One that covers the basics of what the pathway is for and why, and one that goes into more details for the nursing staff and personal care workers. • Remove the requirement for a comprehensive and holistic clinical, wellbeing and medical review at change in behaviour, this is done at admission and every 6 months. It adds too much burden. • Really important to include the chaplains in the process as they are involved with care and are the most stable of the staff groups.
Changes they perceived	• Changed the conversations in the multidisciplinary meetings, much more directed, and medication is the last resort now rather than the first. • Pulled the focus from what the behaviour was to what might be causing the behaviour, changed the way they approach care and the resident. • A reduction in antipsychotic use, and a reduction in incidence of BPSD. • Residents were at less risk of sedation due to antipsychotic medication use
What they liked about it	• Gave staff confidence in their decisions. • Improved conversations with staff about care and actions to be taken. • Gives staff better language to talk to GPs and Geriatricians, and they know if they need to consult them it is because they have tried everything else and can document this. • Has removed the ad-hoc approach to communication and care delivery. • Antipsychotic use has become the oddity rather than the norm. Resulting in case reviews when anti-psychotic medication is given. • Makes staff feel better about their jobs; much more satisfaction in finding a solution that works rather than using medication to manage residents' behaviours.
Other thoughts	• It increased the paperwork a bit, but improved the quality of care, and worked to reduce BPSD, so has decreased work in other areas. • Has now become embedded in the Multi-D team meetings. • Needs a champion to drive it until it becomes embedded, and to induct and push new or agency staff to use it. • Would like to see it rolled out across all of Eldercare. • Suggested a buddy site system to start with until people's confidence in the pathway and their decisions develop.

The feedback from the meetings was positive with those involved preferring the pathway to the previous processes. They noted that there was more paperwork involved, especially in the initial set up stages of the care plans and placing a resident on the pathway. However, they felt the use of the pathway improved the quality of care they provided and was more effective than the previous way of working. They noted this reduced work in other areas as the residents were better managed and thus less likely to have BPSD incidents. They also noted the increased documentation made handovers much easier, and improved the continuity of care over time as it was easier for anyone on the clinical care team to follow what interventions had been tried and how well they worked. One suggested change to the paperwork was to remove the 'comprehensive and holistic clinical, wellbeing and medical review at changes in behaviour' recommendation. The staff felt that the use of the BPSD consultation form and the wellbeing review in the 'Watchful Waiting' section to step through the antecedents, behaviour, and consequences of the behaviour provided an indication of the issue and what was required to update the persons care plan. They also used a daily planner filled out every hour to note the persons high risk times and what triggered the behaviour. They found this to provide a very individualised picture of each person's level of risk, current events, and triggers. They felt these tools to be a better use of available time and resources and were more likely to be completed than the comprehensive clinical, wellbeing and medical review. They also felt that these tools were just as effective in addressing the root cause of the behaviour as the comprehensive clinical, wellbeing and medical review.

Nursing staff felt the National Proscribing Service (NPS) MedicineWise Deprescribing Flowchart would be a useful addition to add to the instruction booklet for the clinical pathway. They also suggested adding 'updating the behavioural consultation form' to the watchful waiting section in order to track across the persons care. This was in relation to removing the 'comprehensive and holistic clinical, wellbeing and medical review at changes in behaviour' recommendation mentioned previously.

Allied health staff stated they also found the pathway useful. They used the clinical pathway as a basis to create their own pathway around initiating risk assessment during manual handling and other care tasks that allowed them to earlier flag potential BPSD in residents.

The nursing staff and clinical leaders felt the pathway had become embedded into the clinical and multidisciplinary teams at the site, but that it also needs to involve the rest of the staff. They pointed out that the personal care workers should be introduced to the pathway as they have a great deal of interactions with the residents and have a large role to play in making sure the care plan is followed. They felt this would be better enabled if the personal care workers understood the pathway and what it is aiming to achieve. Nursing staff also noted the chaplain, kitchen and cleaning staff all have interactions with the residents and would benefit from understanding the pathway as well; they may notice changes in behaviour or may inadvertently trigger an incident. The nursing staff who provided feedback all commented on this factor, and felt if all site staff understood the purpose of the pathway, they would receive less requests for medication management and more adherence to the care plans across all staff groups. Videos on education about the pathway were suggested as one way to induct everyone to the pathway, one for all staff with an overview of the pathway and why it is important, and a more detailed one for nursing staff. The site manager was more cautious about this as she felt there was an information overload at inductions and adding more to the mix may lead to education fatigue. She felt the education is better aimed at key memory support unit staff who could then pass the reasoning and important messages on to those interacting with the residents as needed. She commented that the nurses in charge of overseeing the persons care should be the ones leading the education of those who are directly interacting with the resident.

Staff also noted the addition of the pathway to the multidisciplinary team meetings increased the focus on its use and ensured it was embedded in the workplace processes.

The main benefit staff noted was a reduction in antipsychotic use at the site coupled with a reduction in BPSD incidents. They felt this was due to the use of the pathway changing the way the think about and approach residents with BPSD. The pathway pulled their focus from what the behaviour was to why the behaviour was happening. Once they started to look for the triggering events and underlying causes of the behaviours, in many cases they felt they could intervene earlier to prevent a BPSD incident occurring. Examples mentioned were often small things like a placing a “repair in progress” sign near a broken light to stop one resident climbing on chairs to try and change light bulbs, or ensuring another resident has a walk with a staff member at the same time each afternoon. The pathway led them through steps that allowed them to discover the driver of the behaviour (a desire to fix things, or an established walking routine) and come up with a solution that kept the resident content (see Appendix 4 for a case study provided by the site of an 87 year old male resident placed on the pathway).

Improved communication with medical professionals, each other and the resident’s family were noted as an outcome of using the pathway. Furthermore, the pathway addresses all current, and known future, nationally required reporting and auditing processes for RACFs, providing easily accessible documentation to demonstrate adherence to regulations and current best practice in this high-risk area.

Finally, the need for a site champion was highlighted. The nursing staff and management all noted that a site champion to drive the uptake of the pathway was required at the start to ensure adherence and induct any new staff. All staff members involved in the pathway trial said they would take this with them if they left the site, and that they hoped it would be expanded across all sites with memory support units in Eldercare Inc. However, they all felt without a champion to drive it initially it probably would not have been as successful. Until they began to see the difference the pathway made to their workload, the residents’ wellbeing, and their own job satisfaction, they felt they may not have continued without the site manager championing the pathway.

Audit data

A record audit was conducted of the six months prior to the pathway being implemented at the site and again after the trial period had ended, covering the five months of the trial period. The audit was conducted by an Eldercare nurse who was not connected to the development or implementation of the pathway. The audit was conducted on 10% of the residents living with dementia, chosen at random from the electronic health records. This resulted in six case note audits on each occasion. These residents were permanent residents of the site (i.e. not short term or respite care), and had a diagnosis of dementia. There was one resident that appeared in both time points, the remainder were different. The audit assessed record keeping and clinical outcomes before and after the implementation of the pathway (**Table 4**4). Data were exported from the reporting template into an excel spreadsheet and simple descriptive analysis was performed, comparing the desired outcomes before and after the intervention.

The data collected indicated an improvement in 50% of the items assessed in the audit, no change in 45% of the items assessed and a reduction in 5%. There was evidence of improvements in staff and family consultations around care plans and medications in the case notes and more residents were added to the multidisciplinary meetings after the implementation of the pathway. There was better overall documentation of care plans, an increase in comprehensive wellbeing reviews and non-pharmacological strategy development, and a greater focus on identification of BPSD triggers after the implementation of the pathway. Of the 45% that indicated no change, this was because both time points achieved the desired outcome. Where a reduction of the desired outcome was achieved, this referred to the deprescribing of current antipsychotic prescriptions. In the pre-implementation audit, all six of the randomly selected residents had an antipsychotic prescription, and three were deprescribed. Of the post implementation residents, four of the six had antipsychotic prescriptions, one was titrated downwards, but none were deprescribed.

Table 4. Summary of the audit data reviewed for the feasibility test of the clinical pathway

	Items assessed in the audit
Clinical Assessment	• Resident's behaviour (on admission, following a BPSD incident and/or at the care plan review). • Care planning (comprehensive, medical and wellbeing reviews) and addition to the multidisciplinary team meeting. • Recording of the residents BPSD risk level*. • Recording of any identified BPSD factors/triggers. • Recording of the correct pathway to use for the resident, evidence it was followed or modified at need*. • Evidence of consultations (staff, family, resident). • Nonpharmacological strategies developed, and outcomes recorded. • Communication of care plan to staff, family and resident. • Specialist referrals.
In cases with antipsychotic prescription	• Antipsychotic prescription. • Evidence of consultation, including rationale, and side effects (with family, resident, GP). • Evidence of review planning and execution. • Outcomes of reviews. • Evidence of effectiveness, side effects or deprescribing.

** These questions were only relevant to the post-implementation audit*

Discussion

One of the respondents in the post intervention group answered no, average, or poor to every question. The remainder of the survey responses across both time points had a much wider spread across the scales. This widespread across the survey responses could be due to the high clinical staff turnover that occurred at the site during the implementation period, in part because of the South Australian Government's Emergency Management (Residential Aged Care) Direction 2021 restricting aged care workers from holding jobs at more than one RACF due to the COVID-19 pandemic. The nurses involved in the discussions around the pathway said they felt the documentation burden was high at the start, but the results of the pathway made it worth the extra paperwork, and led to a downstream reduction in work due to a reduction in BPSD incidence. Based on this feedback it is possible that a new staff member would not yet see the benefits.

One respondent noted few new staff had dementia specific training or knew what BPSD was. This was reflected in the post implementation survey where only two of the nine respondents had completed any dementia specific training compared to seven of the ten respondents in the pre implementation group. This gap was also noted in the Royal Commission into Aged Care Quality and Safety Final Report Recommendation 80 which specifies that "*all workers engaged by providers who are involved in direct contact with people seeking or receiving services in the aged care system undertake regular training about dementia care and palliative care*".[9]

The clinical pathway

Perceived benefits of the pathway

Staff perceived the pathway shifted the focus from the behaviour to the causes of the behaviour, and this changed the culture of BPSD management at the site. By looking for the causes of the behaviour staff have shifted their approach to, and interactions with, the resident and have found this results in more successful outcomes for all. They felt this shift in approach has also resulted in less antipsychotic use and BPSD incidents and positive feedback from families.

The use of the pathway helped staff improve communication related to resident care. Multidisciplinary meetings became more directed, and medication was noted to be the last resort, rather than the first. This was a significant shift in care management and was welcomed by all team members. The pathway improved conversations with staff about care and actions to be taken, gave them more confidence in the decisions around care for the residents and removed the ad-hoc approach to communication and care delivery within the team. Finally, the use of the pathway and the resulting documentation provided a more directed way to escalate care and concerns with GPs and Geriatricians, and ensures if they do need to refer it is because they have tried everything else and have the required documentation to show this. The resulting pathway documentation also benefitted the GPs and Geriatricians involved in care, with concise documentation of behaviours and interventions trialled to date, making diagnosis and subsequent therapy and recommendations easier.

A universal feedback from all nurses involved in the discussions was around their feelings of job satisfaction. They stated using the pathway made them feel better about their jobs; they found much more satisfaction in finding a solution that worked rather than using medication to manage resident behaviours. All respondents said they would take the pathway process with them to their new RACF if they left Eldercare, and all felt it should be extended across all Eldercare sites.

Perceived adverse effects of the pathway

Only one respondent suggested a potential for an adverse effect of using the pathway. The respondent suggested there was a possibility that they may be so focussed on not using antipsychotics (in the case of those prescribe use for emergency management, or PRN) that by time they realise they need to use them it may be too late for them to have the desired effect. This is not something they had experienced, but it was raised as a possibility as the pathway has a strong focus on nonpharmacological treatments.

While there was more paperwork involved, especially in the initial set up stages of the care plans and placing a resident on the pathway, nursing staff felt the use of the pathway improved the quality of care they provided was more effective than the previous way of working and reduced work in the long term by reducing the likelihood of BPSD incidents. The increased documentation made handovers easier, and improved the continuity of care over time, indicating that although it was perceived as an adverse effect initially, they came to appreciate the benefits over the course of the trial period.

Suggested changes to the pathway from the site staff

Staff suggested some edits to the pathway based on their experiences of using it across the five months of the trial.

They suggested the removal of the 'comprehensive clinical assessment, medical and wellbeing review at changes in behaviour' recommendation from the 'Prevention' section, as they felt this was too much work across too many staff members for every behaviour change in a resident. They further noted that this process is updated every six months regardless of the residents' behaviours. In practice, they replaced this with the BPSD consultation form and wellbeing review in the 'Watchful Waiting' section. They felt this enabled them to step through the antecedents, behaviour, and consequences of the behaviour and, when combined with a daily planner designed to plot the residents high risk times and behaviour triggers, provided an individualised picture and was a better use of available time and resources.

The wording used in the instruction booklet is *"On admission <u>or at any change in the level of risk</u> a comprehensive and holistic clinical and medical review should be conducted to detect any general health problems or issues that may impact on a person's quality of life and wellbeing."* The recommendation here is that the care team undertake an initial risk assessment, that identifies if changes in behaviour increase the risk to the person or those around them as defined by the three risk levels in the clinical pathway. The use of the BPSD consultation form, the daily planner and the wellbeing review are important in assisting staff to assess the level of risk, but these do not provide the holistic assessment of all aspects of care and physical health that could have led to a change in BPSD risk (as discussed previously, a person living with dementia can move up and down Brodaty et al.'s[3] seven-tiered model of BPSD based on a range of factors). If the behaviour change results in an escalation of risk from a lower level (i.e.: moderate risk (watchful waiting), to high risk (specific intervention)), these tools would indicate this is the case. Only then would a comprehensive medical and clinical review be required, in line with EBP to assess if an underlying health issue is the root of the problem. At which point, the six-month timeline would reset for the next standard review. It is possible that this point was not conveyed in the education session introducing the pathway, leading to the perception that this is required at every change in resident behaviour. This section will need to be adjusted in the pathway instruction booklet and flow chart in order to clarify at which point a comprehensive review is necessary.

Suggested changes to the implementation of the pathway from the site staff

Nursing staff felt that anyone working on the site who was likely to have regular interactions with the residents needed to know about and understand the goals of the pathway. They felt it was very important for personal care workers to be actively involved in the pathway, as they are vital in ensuring the personal care plans are carried out and are often the ones who can pick up on early signs of behavioural changes, if they know what to look for. However, respondents also felt the kitchen and cleaning staff needed to at least be aware of the purpose of the pathway, as they interact with residents as well. They felt these staff members may notice something and could bring it to the attention of the nurses, but also that they may inadvertently trigger a BPSD incident if they were not aware of the actions being taken based on the pathway. Finally, they noted that it was important to include the chaplains in the implementation process as they are also involved with resident care and are often the most long-term members of staff. This suggestion is an important addition to the pathway implementation as it highlights the interactions of all those within the RACFs. Implementation plans do need to consider those that may not have health decision making roles, but who do carry out the care of the residents, or interact with the residents. It is important that these staff and family members have an understanding of the overarching aim of the pathway (individualised, person-centred care based on EBP), and in the case of personal care workers, the details of the care plans of those they interact with, and the need to look for, and most importantly report to the nurses, any changes in resident behaviours.

Another suggestion to improve the implementation process was to have videos that can be shown to all new staff as part of the staff induction package. The suggestion was for one high level video that covers the basics of what the pathway is for and why the site is using it; this video would be for all staff. The second video could go into the pathway in more detail and walk through the various steps, and documentations required; this one would be for the nursing staff. This came from the nursing staff, however the managerial staff felt this would add to the educational burden experienced by new staff at inductions. Mangers felt the embedding of the pathway into the operation of the RACF was a better way of implementation, as it becomes standard practice with actions and documentation provided as required. A middle ground would be to have all staff attached to a RACFs memory ward well versed in the pathway with key champions available to consult with any staff requiring more information or guidance in the wider RACF.

Barriers to implementation

Staff	Education	Extraneous factors
• High staff turnover during the implementation and trial period • The use of agency staff who do not know about the pathway • Not including personal care workers	• Staff knowledge of dementia and BPSD • Not educating personal care workers and agency staff in the use of the pathway	• COVID-19: the uncertainty and stress created by lock downs, infection control and PPE shortages, and staffing restrictions reduced the staff capacity to take on another new thing

Enablers to implementation

Staff	Education	Extraneous factors
• Consistent project leadership (champion) at the site level • Inclusion of allied health staff and the site chaplain • Improvements in care and outcomes increased confidence and drive to use the pathway • Embedding it into the weekly multidisciplinary meeting kept it on everyone's agenda and ensured focus on the pathway at least once a week	• Making it standard practice across the site • Educating the clinical leaders in how best to implement it	• Ensures the site is able to show easily and clearly that they are meeting all national regulatory reporting and practice/audit requirements • Addresses a high-risk area of care • Provides all documentation required for new Serious Incident Response Scheme

Suggested changes to the implementation and evaluation process from the research team

- Roll out across multiple sites at once with control sites
- Suggested changes to the audit data:
  - More information on prescriptions and health outcomes as well as documentation of information, update statistical analyses to suit new data
  - Greater numbers to test efficacy rather than feasibility and implementation
  - Use a research nurse to do the audit
- Survey questions need to be reworded. Although they were tested by the research team it appeared they were open to unexpected interpretation by the respondents.
- Formal interviews and/or focus groups with the participants to assess their perspectives, with qualitative thematic analysis.
- A standardised way to educate all staff on the pathway purpose, which can be used as part of new staff induction as well as for the initial implementation of the pathway on a site.

Future actions

The clinical pathway and instruction booklet require minor updates based on the suggestions made by the RACF staff and the research team, while still ensuring these are in line with EBP. The implementation plan will also be modified to recommend the inclusion in some way of all levels of staff within the RACFs, and the assessment of data changed as per the experiences of the research team. Further testing of the pathway is required to assess the efficacy in improving staff, resident, and family outcomes, reducing antipsychotic prescriptions and use of current EBP. Further development of educational tools introducing the clinical pathway to new sites and/or new staff members are required. The updated information will be provided to the Eldercare site for their use. It is suggested that this report and the updated version of the pathway are tabled with the Eldercare board for consideration of wider implementation.

Limitations

This trial suggested that the pathway is feasible, and minor changes to the pathway and the implementation plan would improve the penetration of the pathway. However, this was a feasibility trail to test the implementation of the clinical pathway in one memory support unit at one RACF. Generalisations to the broader residential aged care sector cannot be made yet. Over the course of this trial, we have had a global pandemic which has delayed the official start of the trial, and modified the way RACFs in South Australia operate and manage their staff arrangements. The regulations introduced around working in more than one facility led to staffing changes and challenges, and the turnover of staff meant that the nurses and clinical leaders involved in the development of the pathway where not the ones who ended up using it, and that the pre- and post-implementation surveys were not completed by the same team members. Another element that impacted the data was that the clinical leaders were aware of the pathway at the time the trial was postponed so some elements of the pathway were implemented before it became standard practice in the RACF. It is inevitable that these external factors impacted the trial. However, while this may make it difficult to compare survey results across pre and post data collection, the pathway was seen as an improvement by those new staff who used it. As those involved in developing the pathway felt it had the potential to improve care, this tumultuous time may be a seen as a confirmation that the pathway and implementation plan are feasible in RACFs.

Conclusion

The BPSD clinical pathway was easy to implement and well accepted by nursing and clinical care staff who have adopted the pathway. Staff have indicated the pathway has become embedded in the site processes and they will continue to use it even though the trial period has ended. Staff self-reported an increase in their confidence to manage BPSD and a reduction in both antipsychotic use and BPSD incidence, as well as improvements in communication within and between site staff, medical professional and resident's and their family and carers. The pathway ensures the site is meeting the national audit and reporting required of RACFs and is able to easily provide data with little addition to staff workload.

Minor changes have been suggested to improve the overall usability and clarity of the pathway and the implementation process. The preliminary outcomes appear to indicate it could be useful for the safe, person-centred care of BPSD in RACFs, but this will need to be tested across multiple facilities before efficacy in reducing antipsychotic use and improving BPSD incidents can be shown.

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Appendix 1. Full search strategy for Ovid MEDLINE Database: searched 28/11/19

#	Searches	Results
1.	exp Nursing Homes/	38339
2.	Residential Facilities/	5348
3.	Assisted living facilities/	1324
4.	Group Homes/	960
5.	or/1-4	45200
6.	exp aged/	3020292
7.	5 and 6	25332
8.	Housing for the Elderly/	1597
9.	Homes for the Aged/	13554
10.	(retire* life care cent* or retire* care cent* or retire* life healthcare cent* or retire* healthcare cent* or aged care or aged healthcare or care retire* cent* or health?care retire* cent* or retire* communit*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	3396
11.	((home or homes or house or houses or housing or center or centers or centre or centres or dwelling or dwellings or village or villages or facility or facilities or institution* or residence or residences or residential care or residential healthcare) adj3 (aged or ag?ing or elder* or senior or seniors or Old* adult* or old* person* or Old* people* or geriatric* or retire* or sexagenarian* or sept?agenarian* or octogenarian* or nonagenarian* or centenarian* or old* age*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	43164
12.	or/7-11	59439
13.	dementia/	48980
14.	alzheimer disease/	90213
15.	(dement* or Alzheimer*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	230914

16.	or/13-15	230914
17.	Dementia behavior.mp.	54
18.	((behavio?ral and psych* symptom* of dementia) or BPSD or (behavio?ral and psych* symptom* of Alzheimer*) or dementia behavio?rs or Alzheimer* behavio?rs or (behavio?ral and psych* symptom*) or behavio?r* symptom* or psycholog* symptom* or neuropsychiatric symptom* or (behavio?r* of concern) or (changed behavio?r*) or (expression* of unmet need) or (challenging behavio?r*) or (difficult behavio?r*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	21827
19.	exp Behavioral Symptoms/	355026
20.	Or/17-19	370353
21.	guideline/	16187
22.	practice guideline/	26081
23.	Practice Guidelines as Topic/	113652
24.	consensus/	11645
25.	clinical protocols/	27183
26.	program evaluation/	61098
27.	Clinical governance/	505
28.	Evidence-Based Practice/	9452
29.	Critical Pathways/	6464
30.	Clinical Decision-Making/	7305
31.	(guideline* or guidance* or protocol* or consensus* or program or programs or programme or programmes or governance* or clinical pathway* or critical pathway* or critical path? or practis* pathway* or practic* pathway* or care pathway* or caring pathway* or health?car* pathway* or nurs* care plan? or best practi* or best-practi* or EBP or evidence?base* practi* or evidence base* practi* or clinical decision?making or clinical decision making or medical decision making or medical decision?making or mak* medical decision* or mak* clinical decision*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	2042219
32.	or/21-31	2042219
33.	12 and 16 and 20 and 32	303
34.	limit 33 to (English language and yr="2009 -Current")	220

Appendix 2. Pre-intervention survey questions

1. These questions ask you to rate your current knowledge and confidence in managing behaviours and psychological symptoms of dementia (BPSD)

	Excellent	Very Good	Good	Average	Poor
How would you rate your current knowledge of **non-pharmacological** treatments available to manage BPSD?					
How would you rate your current knowledge of **pharmacological** treatments available to manage BPSD?					
How would you rate your current confidence in your ability to manage a resident with BPSD successfully?					

2. These questions ask you to think about how clearly you feel the following points are currently explained or recorded at your workplace.

	Very clear	Clear	Somewhat clear	Unclear	Very unclear
Do you think guidance on how to manage BPSD is well known or described in your workplace?					
Do you think the treatment options to manage BPSD are well known or well documented in your workplace?					
Do you think the processes that help make decisions for **non-pharmacological** treatments are well known or well documented in your workplace?					
Do you think the processes that help make decisions for **pharmacological** treatments are well known or well documented in your workplace?					
Do you think the processes on how to record decision-making for treatment is well known or well documented in your workplace?					
Do you think details on current decisions relating to BPSD management for a resident are well known or recorded in your workplace?					
Do you think details of treatments related to a residents prior BPSD event or other relevant clinical care are well known or recorded in your workplace?					

3. Do you think a checklist that guides decision making for managing BPSD would assist you to:

	Yes	No
Better manage BPSD?		
Increase your confidence in your decisions?		
Encourage more consistent resident care at your workplace?		
Encourage standardization of record keeping at your workplace?		
Make you feel better supported in your decision making?		

4. Have you completed any professional development courses that were specific to the management of BPSD or dementia care?

Please enter type of course and subject matter, and date of training (YY/MM)

Appendix 3. Post-intervention survey questions

1. These questions ask you to rate your current knowledge and confidence in managing behaviours and psychological symptoms of dementia (BPSD)

	Excellent	Very Good	Good	Average	Poor
How would you rate your current knowledge of **non-pharmacological** treatments available to manage BPSD?					
How would you rate your current knowledge of **pharmacological** treatments available to manage BPSD?					
How would you rate your current confidence in your ability to manage a resident with BPSD successfully?					

2. These questions ask you to think about how clearly you feel the following points are currently explained or recorded at your workplace.

	Very clear	Clear	Somewhat clear	Unclear	Very unclear
Do you think guidance on how to manage BPSD is well known or described in your workplace?					
Do you think the treatment options to manage BPSD are well known or well documented in your workplace?					
Do you think the processes that help make decisions for **non-pharmacological** treatments are well known or well documented in your workplace?					
Do you think the processes that help make decisions for **pharmacological** treatments are well known or well documented in your workplace?					
Do you think the processes on how to record decision-making for treatment is well known or well documented in your workplace?					
Do you think details on current decisions relating to BPSD management for a resident are well known or recorded in your workplace?					
Do you think details of treatments related to a residents prior BPSD event or other relevant clinical care are well known or recorded in your workplace?					

3. Do you think the introduction of the BPSD pathway in August 2020 helped you to:

	Yes	No
Better manage BPSD?		
Increase your confidence in your decisions?		
Encourage more consistent resident care at your workplace?		
Encourage standardization of record keeping at your workplace?		
Make you feel better supported in your decision making?		

4. These questions ask you what you thought about using the BPSD clinical pathway

Did you think the clinical pathway was an improvement on prior practice?	Yes	No
Do you think the clinical pathway has simplified the process of managing BPSD?		
Do you think the clinical pathway has simplified the paperwork involved in the management of BPSD?		
Do you think the clinical pathway has improved the record keeping in relation to the management of BPSD?		
Do you think the clinical pathway has improved resident quality of life?		
Is there anything you would like to see improved or changed in the clinical pathway? (if yes go to 8)		

5. If yes: What would you like to see changed?

6. Have you completed any professional development courses that were specific to the management of BPSD or dementia care?
Please enter type of course and subject matter, and date of training (YY/MM)

7. Do you have any other comments?

Appendix 4. Case study of male resident placed on pathway

Resident Profile:

87-year-old Male admitted with diagnosis of mixed/vascular dementia.

Multiple medical issues.

Not prescribed antipsychotic on admission to site.

Situation:

On first day of admission the resident displayed physically aggressive behavior towards a female resident (he pushed his walker into a resident who was calling out frequently).

Had three subsequent sexual behavior incidents and frequent verbal behaviours and physical agitation if unable to meet his immediate requests (i.e.: he wanted a key to a locked drawer would not settle until key was located).

Management

Staff reported that his GP had reviewed and prescribed short term antipsychotic Quetiapine 25mgs BD in response to review of ongoing sexual behaviour and verbal and physical agitation.

Following consultation with staff and considering the BPSD Clinical Pathway it was agreed that all non-pharmacological strategies had not been trialed before commencing an antipsychotic, and that family had not been consulted prior to commencing the antipsychotic medication.

Also of note, the resident had had five falls since admission.

The clinical leader discussed with the resident's family and GP the need for case consultation prior to implementing any pharmacological strategies, and to ensure consultation with staff occurred.

A case conference was held with the clinical care manager, site operations manager, daughter and GP to develop the management plan:

1. Dementia Excellence review
2. Dementia Services Australia (DSA) review
3. Develop a daily routine with input from the resident, family and staff
4. Only use quetiapine if an emergency situation arises and try contacting the daughter first to assist.

The clinical leader set up a consultation with staff and developed a daily diary for each hour of the day to identify possible high-risk times and assist in setting up the daily routine. Staff had identified that the resident enjoyed clearing the tables after mealtimes and helping to tidy up the kitchen area. The resident's daughter informed the staff that routine was very important to her father and identified the things he enjoyed doing, which were added to the daily routine. An eldercare Dementia Excellence Review was undertaken, and information also included in management strategy. This all became part of his daily routine which was placed in the Nursing Station for staff reference.

Outcome

Since implementation of the daily routine, the resident is more settled and physical and verbal behavior and agitation reduced, and there were no more sexual behaviours. There has been no use of antipsychotic medication.

Key points related to the BPSD Clinical Pathway

- Identifying the prescription of an antipsychotic and staff questioning the prescribing of the antipsychotic,
- Consulting and including staff in the management of behavior issues,
- Education of staff on management of resident behavior,
- Consultation and including family in the management of behavior issues,
- Case conference with key stakeholders to develop and share a management pathway.

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