The ‘RedUSe’ (Reducing Use of Sedatives) program - ensuring appropriate management of common old age mental health conditions in residential aged care

1. Additional description

Residents of Aged Care Homes (ACHs), or Residential Aged Care Facilities (RACFs), have high rates of common mental health disorders; namely, depression, anxiety and sleep disorders. Depression is the most common, with an 2012 Australian report concluding that over half of residents exhibit depressive symptoms. International data suggests up to 20% of residents have anxiety and over a third suffer from insomnia. The prevalence of mental health conditions is significantly higher in Aged Care than in the community. Even rates of more severe disorders such as schizophrenia and bipolar disorder, at 4% and 2% of residents, respectively; are double community rates. It is no wonder then that ACHs have been referred to as ‘modern mental institutions for the elderly’.

Further, in 2014, 52% of Australian ACH residents had a diagnosis of dementia. The vast majority (up to 90%) will experience Behavioural and Psychological Symptoms of Dementia (BPSD), including agitation, anxiety, psychosis, depression and insomnia. BPSD are the main reason why people with dementia are admitted to ACHs and are among ‘the most significant challenges in dementia care’.

Although mental health conditions are common in ACHs, there is limited access to psychology services and minimal training provided to staff on mental health. Ironically, while the incidence of psychogeriatric conditions has increased markedly, there has been a decline in the number of trained Registered and Enrolled Nurses (RNs and ENs) working in the sector. Indeed, much of the front-line care is performed by Personal Care Assistants (PCAs) who have limited training.

Another factor influencing mental health care provision is that the number of GP attendances has been decreasing in the last decade as a result of workload and part-time work preferences.

Due to all the factors mentioned above, nursing and care staff are often required to manage their residents’ mental health needs. Yet, many are not educated about these disorders or their management and they seldom seek appropriate mental health referrals. The deficits in psychological services, GP coverage and training; combined with increasing numbers of residents with complex behavioural and psychological symptoms, mean the management of mental health conditions in ACHs is often less than ideal.

Professional guidelines advise the use of non-pharmacological strategies as ‘first-line’ treatment for mild to moderate depression, BPSD, anxiety and sleep disturbance. These strategies have two main advantages over drug treatment. Firstly, they aim to address the psychosocial/environmental reasons for the behavioural or psychological symptom/s, and secondly, the limitations of pharmacological treatment are avoided, namely adverse effects, interactions and limited efficacy.

Antipsychotics were developed to treat serious mental health disorders such as schizophrenia. In older people, though, these agents are mostly prescribed to manage BPSD. Their effectiveness to treat these symptoms is modest, yet the risks associated with use can be severe, ranging from confusion and falls, to stroke and death. Similarly, benzodiazepines are prescribed in older people to treat sleep disturbance, anxiety and agitation. Benzodiazepines can be effective in the short-term, but then tolerance often develops. Use is associated with over-sedation, falls and death.

In view of their modest benefits, alongside significant risks, guidelines recommend that both medication classes should be prescribed judiciously in older people when anxiety, sleep disturbance and/or BPSD cause significant distress, or pose a safety risk. When prescribed, they should be monitored regularly for effectiveness and adverse effects, whilst using the lowest effective dose for the shortest period of time. Yet, the high ACH rates of sustained antipsychotic and benzodiazepine use in Australia reported over several decades suggest non-adherence to these guidelines. In general, these sedating medications are prescribed too often and for too long.
2. Criteria

2.1 Evidence of a significant contribution to the field of mental health on a local, state or national level.

The RedUSe (Reducing Use of Sedatives) project expansion was funded by the Australian Government in 2013, through the ‘Dementia and Aged Care Service’ Fund. The overarching aim of RedUSe was to promote the appropriate use of antipsychotics and benzodiazepines (collectively termed as ‘sedatives’) in ACHs and foster the evidence-base management of common old age mental health conditions. The project was piloted successfully in a 2008 Tasmanian study. From 2014-2016 the project was expanded to 150 ACHs distributed throughout six states and the A.C.T. (Please note, antidepressant use in ACHs is contentious, with many believing depression is undertreated; nonetheless, doubts have been raised about the effectiveness of antidepressants in mild depression and in people with dementia.\textsuperscript{18} There is; however, general consensus regarding the inappropriate and over use of antipsychotic and benzodiazepine medication.\textsuperscript{19,20} For this reason, we focused on these medications, although antidepressant and other psychotropic use was monitored).

The RedUSe project is the first Australian ACH intervention program that specifically aimed to reduce the reliance of staff on the pharmacological management of anxiety, sleep disturbance and BPSD. ‘RedUSe’ is a multi-strategic, interdisciplinary, structured initiative, which employed several approaches explicitly targeted to reduce inappropriate psychotropic use and promote the evidence-based management of common old age mental health conditions. ‘RedUSe’ employed three key quality improvement or strategies:

1. **Audit**: To raise awareness of the use of sedating medications, each ACH’s psychotropic medication use was measured at baseline, 3-months and 6-months, using a customised ‘e-Health’ tool. These audit results were benchmarked and then presented to nursing staff and PCAs during two educational sessions at the start of the project, and again at the halfway mark.

2. **Education**: The sessions comprised of innovative and interactive education incorporating case studies, group discussion and didactic content. Beliefs were challenged about psychotropic medication use in older people, staff were educated on the benefits and risks of pharmacological approaches and non-pharmacological strategies were promoted.

3. **Review**: Following each educational session, all residents taking antipsychotic and benzodiazepine medication were reviewed; an interdisciplinary process involving a trained pharmacist, a champion nurse at each Home and the resident’s GP or nurse prescriber. The diagram below illustrates the key RedUSe strategies:
There was high demand to participate in ‘RedUSe’ after the two Australian peak aged care organisations, Leading Age Services Australia (LASA) and Aged and Community Services Australia (ACSA), promoted the project in print and online newsletters, resulting in over 300 expression of interests. The full target of 150 ACHs was reached in September 2015.

**National distribution of ACHs**
The 6-month project was run in four consecutive waves, with the first pilot wave rolled out in April 2014 in W.A., Victoria and S.A.. Subsequent waves involved Queensland, Victoria, N.S.W., A.C.T., S.A. and Tasmania. In terms of reach, an average of 12,153 resident’s medications were audited for each measure. The size of the Homes ranged from 29-171, with an average of 81 residents. The majority of ACHs were members of an organisation (n=118 or 79%) while the remainder were independent. A third were religious by affiliation and just over half (=79) were classified as ‘not-for-profit’. The majority of ACHs were located in Queensland (n=35), Victoria (n=33), S.A. (n=32) and N.S.W. (n=27). Homes were also recruited in W.A. (n=5), Tasmania (n=10) and the A.C.T. (n=6).

**Education on evidence-based management of old age mental health conditions**
The education on old age mental health provided to the aged care sector was substantial. A ‘train the trainer’ model was adopted whereby 76 pharmacists were trained to deliver the main RedUSe educational content to **2550 ACH nursing staff and carers** (1447 RNs, 870 ENs and 233 carers). Further, 165 Champion Nurses (CNs) were appointed to liaison with project staff and their ACH, with each CN receiving a 4-hour educational session and mentoring from project staff. In addition, nearly 400 GPs/nurse prescribers participated in one-to-one educational visits from detailers employed by NPSMedicinesWise and DATIS. During this session, prescribers were informed about the project, given guidelines and discussed evidence-based psychotropic use in older people.

**High baseline levels of psychotropic use**
At baseline, we found that over a third of all residents (37%) were taking an antipsychotic and/or benzodiazepine medication daily. Over 40% of residents were taking an antidepressant agent. Specifically, 22% were taking an antipsychotic and 22% of residents were taking a benzodiazepine.

**Impact of the expansion of the RedUSe project on psychotropic use**
Overall, a significant reduction was found in antipsychotic and benzodiazepine use in RedUSe ACHs. A 13% relative reduction was observed in antipsychotic use from baseline to 6-months (from 22% to 19% of residents, p < 0.05). The reduction in benzodiazepine prevalence was higher, at 21% (from 22% to 17.5% p < 0.005). The graph below illustrates the reduction in ACH psychotropic use:
A total of 115 ACHs (77%) reduced their antipsychotic use, with 127 of the Homes (85%) reducing benzodiazepine use. Out of 150 ACHs, two-thirds (66%), reduced both antipsychotic and benzodiazepine prescribing rates. The response rate of Homes across the RedUSe expansion is shown below:

A recent study in N.S.W reported that only 4% of residents taking psychotropic agents have their medication reduced, or ceased, over a six-month period. In the RedUSe project ACHs, 41% of all residents taking antipsychotic and/or benzodiazepine medication had doses reduced or ceased altogether. **This means that the proportion of sedative dose reductions in RedUSe Homes was effectively ten times higher than the rate observed in routine practice.**

The reduction was also sustained over time: When residents were tracked from the baseline to 6-month measure we found that over 80% of antipsychotic agents, and 90% of benzodiazepines ceased or reduced at 3-months, remained reduced when residents were re-checked at 6-months. Notably, a quarter of residents who had their sedative dose reduced at 3-months, were ceased outright by the 6-month audit.

### 2.2 Evidence of innovation

There are few initiatives in Australian ACHs that specifically target high and inappropriate use of psychotropic medication. The ‘RedUSe’ project aimed to address this important issue and was developed by the lead researcher, Dr Juanita Westbury, as the major component of her Doctor of Philosophy degree undertaken at the University of Tasmania from 2007 to 2011.

When the ‘RedUSe’ project was developed, a greater understanding of the reasons underlying the use of antipsychotics and benzodiazepines in ACHs was sought. Dr Westbury interviewed Nurses, doctors, pharmacists and relatives to establish why these medications are used and who influenced their initiation and review. It became very evident that many health professionals, especially nursing staff, had limited knowledge about the risks and guidelines associated with psychotropic use in older people, and that reviews of these medications were conducted infrequently, if at all.

Of all health professionals, nursing staff were the most influential on prescribing and tended to over-rate the effectiveness of antipsychotics and benzodiazepines. Relevantly, many of the health professionals believed sedative medication improved the resident’s quality of life. As one nurse commented:

“It may not be nice to medicate somebody but surely it’s far nicer to have them medicated and calm than distressed. On the whole, they seem to have a positive impact, on their life.” (EN, 2009)

As a consequence of this qualitative research, and other research, the key strategies of RedUSe were specifically targeted at nursing staff and designed to heighten awareness of each Home’s individual psychotropic use; provide education that challenges positive beliefs around psychotropic effectiveness for common mental health conditions, as well as include information about their risks, promote guidelines and to encourage regular psychotropic review and dose reduction.
Piloting ‘RedUSe’

To pilot the RedUSe project, a controlled trial was conducted in 25 ACHs in the two major cities of Tasmania. Thirteen Hobart Homes were recruited as the intervention group, with 12 Launceston ACHs acting as control. The RedUSe project intervention was run over 6 months during 2008-2009. By the conclusion of the trial, benzodiazepine use was significantly reduced in intervention ACHs (32% to 26%, p < 0.005), whereas use increased in control homes. Likewise, antipsychotic use significantly reduced in intervention sites (20.5% to 18%, p < 0.05). These findings suggested that the strategies of the RedUSe project, offer an effective approach to reduce antipsychotic and benzodiazepine use in ACHs.

The project results paper was awarded an international junior research award in 2009 and published in the ‘International Psychogeriatrics’ journal early the following year. The RedUSe project was also recognised with an NPSMedicineWise community engagement award in 2012.

National expansion of the RedUSe project

In August and October 2012, two ministerial roundtables of experts on the use of antipsychotics were convened by the then Minister of Health and Ageing, Mark Butler, MP. These roundtables led to the prioritisation of funding for research on psychotropic reduction through the Aged Care Service Improvement and Healthy Ageing Flexible Fund. In June 2013, the University of Tasmania was awarded $3M funding from this fund for ‘Reducing the Use of Sedative medication in aged care facilities: Implementation of the ‘RedUSe’ project into everyday practice’; essentially a national expansion. (N.B. In 2015 the fund was renamed the ‘Dementia and Aged Care Service (DACS) Fund’).

The national expansion of the RedUSe project incorporates novel innovations to the original RedUSe trial, including:

- A purpose-designed and programmed ‘e-health’ tool which incorporates a website, the ability to collect prescribing information from community pharmacy packing programs, the capacity to produce in-time reporting and a research collation capability.
- A comprehensive training program developed with independent consultants that actively challenges positive perceptions of psychotropic use of ACH staff.
- A series of relative/resident brochures about the management of BPSD and the use of benzodiazepines for anxiety and sleep.
- A dedicated Old Age Psychotropic (OAP) quiz designed and validated to assess knowledge about psychotropic medication use in older people.
- A purpose-made academic detailing program for GPs and nurse practitioners

2.2 Evidence of recognised best practise

During 2004-2006, the U.K. and U.S. published large meta-analyses evaluating the benefits and risks of antipsychotic use to treat BPSD; concluding these agents offered only modest benefits, alongside substantial risks, including falls, cognitive decline, stroke, pneumonia and death. Consequently, a succession of guidelines were released to promote best practice. The Royal Australian and New Zealand College of Psychiatry has published a position paper to guide practice, recommending:

“Antipsychotics should be reserved as second-line therapy to treat BPSD after potential contributing factors have been addressed and non-pharmacological strategies trialled. Antipsychotic therapy should be reserved for patients with distressing agitation associated with risk of harm, or psychosis that has not responded adequately to such strategies. It is recommended that the use of such agents is time limited and reviewed for their potential discontinuation at least three-monthly.”
Similarly, due to risks associated with benzodiazepine use in older people, the Royal Australian College of General Practitioners released a guideline on benzodiazepine use in 2015, concluding: “Older people presenting with anxiety symptoms should be treated initially with antidepressants and psychological therapies, rather than benzodiazepines. Sedative use for insomnia has shown the magnitude of effect is small and the benefits of these drugs may not justify the increased risk. In ACHs, Staff should be knowledgeable in the appropriate management of challenging behaviours....Discontinuation of benzodiazepines can often be achieved gradually.”

Despite these guidelines and many preceding them, psychototropic use in the residential aged care setting is high. There is ample evidence of high and inappropriate use in Australia. Following concern about high rates of psychotropic use in U.S. and European nursing homes, Professor Snowdon conducted a large Australian study in 46 Sydney ACHs during 1993. The rates of regular antipsychotic (27%), hypnotic (27%) and anxiolytic (9%) benzodiazepine use were proclaimed to be, ‘among the highest reported in the world’. Snowdon’s study attracted considerable media and public attention, resulting in the establishment of a NSW Ministerial Taskforce and Senate enquiry. In order to track ACH psychotropic utilisation, Professor Snowdon re-measured use in Sydney during 1993-2009. Over the 16-year timeframe the prevalence of anxiolytic and hypnotic use fell to 5% (anxiolytics) and 11% (hypnotics). In contrast, although antipsychotic use declined to 23% (2003), by 2009, levels had rebounded back to 28%.

Minimal data on ACH psychotropic use is available from other areas in Australia. Antipsychotic use was lower in our 2009 Tasmanian pilot study, involving 25 ACHs, with 20% of residents taking these agents; however, over 26% were taking benzodiazepines, meaning there was substantially more benzodiazepine use in Tasmanian ACHs in comparison to use reported in Sydney.

In terms of duration of use, we found that over two thirds of residents taking psychotropics in Tasmanian ACHs in 2007 were taking exactly the same agent, at the same dosage, as they were a year earlier. High ACH rates of sustained antipsychotic and benzodiazepine use suggest non-adherence to guidelines. In general, antipsychotic and benzodiazepine medications are prescribed too often and for too long.

‘RedUSe’ fostered recognised best practise in the management of old age mental health by:

- promoting professional guidance for BPSD, anxiety and sleep disturbance management,
- highlighting evidence of the modest benefits and substantial risks associated with antipsychotic and benzodiazepine use in older people,
- creating a role for a peer (champion nurse) to model ‘best practise’ behaviour,
- encouraging discussion amongst aged care staff about the optimal way to manage psychological and behavioural symptoms of their residents
- raising awareness of local Home antipsychotic and benzodiazepine use and benchmarking rates of use against other ACHs involved in the project,
- creating an structured interdisciplinary sedative review process where resident’s psychotropic medication was discussed and reviewed by key professionals
- Empowering nursing staff via staff education to become active participants when medications are considered and reviewed, and
- Promoting the use of non-pharmacological treatment in the management of old age mental health conditions.

Evidence of best practise facilitation is demonstrated by the significant reduction of ACH psychotropic rates of use, in a substantial increase in the number of psychotropic dose reductions and cessations, and, finally, in the sustainability of these alterations in treatment.
2.3 Evidence of participation of mental health consumers in the planning, implementation and evaluation.

The main participant group of the RedUSe project were the ACHs. The education was directed towards the staff and health practitioners working within them. The mental health consumers were aged care residents prescribed psychotropic medication. Many of these residents had moderate to severe dementia taking sedating psychotropic agents, so, in many cases, lacked capacity.

In recognition of the strong role that relatives and person’s responsible play in determining the medical treatment of loved ones in aged care, we strove to involve representatives from the Council of the Aged (COTA) and Alzheimer’s Australia Consumer advisory group (now renamed as Dementia Australia) as members of our steering group. Two advocates, Mrs Margaret Bird of COTA, and Danjiela Hljs from Alzheimer’s Australia, were very active members. Not only were they instrumental in communicating the project to their parent organisations and reviewing all materials; but they also suggested the strategy of a relative/carer self-addressed stamped postcard for relatives and carers. The postcard directed relatives to the RedUSe website and were sent back to the project office if a relative sought further information. The finished postcard is shown below:

Margaret and Danjiela also helped review 3 consumer information brochures. One of the brochures was developed for residents taking benzodiazepines and the other two (one on benzodiazepines, anxiety and insomnia, and the other focused on antipsychotics for BPSD) were for relatives and caregivers. After contacting Alzheimer’s Australia for additional feedback, Dr Westbury was invited to present the RedUSe project to their annual Consumer Advisory group meeting in Melbourne early 2014. The group consisted of people with dementia but also carers and relatives of ACH residents. Although generally supportive, the group advised us about appropriate content to provide.

A project newsletter was produced every 6 months providing news about the project and updates on progress. We encouraged RedUSe team members and stakeholders to provide stories about staff involved with RedUSe and of how residents had responded to sedative reduction. One of the newsletters is provided at Appendix 2. In addition, we produced posters for each ACH, advertising to staff and visitors that the Home was involved in the RedUSe project; a separate information sheet for GPs (Appendix 7) and a flier advertising the nursing staff and carer educational sessions. In all, 30 printed training and promotional materials were produced for the RedUSe expansion.
The RedUSe expansion, as a collaborative, multidisciplinary program, involved various professional bodies in its planning and operational phases. Many partnerships and Linkages were established.

The RedUSe steering group was established in August 2013, involving key representatives from the project staff, the Aged Care sector (BUPA care and Southern Cross Care), Aged Care Advocacy groups (Leading Age Services Australia (LASA) and Aged and Community Services Australia (ACSA)), the consumer groups (COTA and Alzheimer’s Australia), the Pharmaceutical Society of Australia (PSA), NPSMedicinesWise, medical practice (a local GP) and the School of Nursing, Midwifery and Paramedicine at the Australian Catholic University (a nurse researcher).

The role of this committee was to provide input on the project strategies and facilitate the delivery of ‘RedUSe’ to ACHs. The RedUSe Steering Committee advised the project team on the establishment, implementation and evaluation of the project, with its stated purpose to:

- Provide advice and guidance to assist in the implementation of the project.
- Provide advice on matters related to project design, research methods and risk management for the project.
- Provide advice and guidance for the development of training materials related to the proposed outputs and outcomes of the project.
- Assist the project team to ensure that project activities are carried out in a timely manner and in accordance with the project plan.
- Contribute to dissemination and knowledge translation activities related to the project.
- Provide advice on opportunities to promote the project and communicate outcomes to relevant parties as they become available.

The steering group met quarterly during the first year of the project, then twice a year for the second and third years. The final steering group was held on the 1st July 2016.

Tangible evidence of partnerships and linkages made is demonstrated in our RedUSe introduction video which was played at the beginning of each initial staff educational session. The Pharmaceutical Society of Australia educational department wrote the script in conjunction with the Project staff. They also produced and distributed the final product. Filming commenced in September 2013. Alzheimer’s Australia provided the contact details for Sue Pieter-s-Hawke who agreed to be part of the video, speaking on behalf of relatives of people with dementia. BUPA Care also allowed filming in one of their aged care homes in Victoria. Professor Susan Hunt from the Royal District Nurses Association also agreed to be filmed, along with Dr Henry Koponicki, a GP specialising in aged care.

The link to the RedUSe Video is provided here: https://www.youtube.com/watch?v=yIxC3IKu5PU

An educational consultancy group, ‘Creativeintension’® were employed to assist with the development of all educational materials produced for the project (over 20 in total). The educational materials were evaluated and piloted by the Aged Care groups in test sites in BUPA care Homes and Southern Cross Homes. All steering group members were also invited to provide feedback.

In order to inform and involve prescribers responsible for the medication management of aged care residents we collaborated closely with two organisations that specifically provide education to GPs and nurse prescribers. NPSMedicinesWise is a national organisation that provides independent evidence-based medication advice to healthcare practitioners. Likewise, the Drug Administration and Therapeutic Information Service (DATIS) provides a similar service in South Australia. Both organisations worked closely with the project team to produce detailing materials for prescribers. Both organisations were also contracted to perform educational visits to GPs and nurse prescribers.
2.5 Verification and evaluation of the program’s effectiveness

Outcome measures and Evaluation

The main method to evaluate the effectiveness of the RedUSe project expansion was a time series analysis, whereby antipsychotic and benzodiazepine use at each ACH was audited at baseline, 3-months and 6-months. In addition, the extent of dosage reduction was measured at these time periods. The main outcome measures obtained were as follows:

- Prevalence rate of antipsychotic and benzodiazepine use at baseline, 3 months and 6 months.
- Prevalence rate of sedating antidepressants and prn sedatives to assess for substitution.
- Number of antipsychotic and benzodiazepine dosage reduction/cessation attempts.

Regarding the prevalence of psychotropic use:

- The average prevalence of antipsychotic use declined over the project from 21.6% [CI 95% 20.4% - 22.9%] at baseline to 18.8% [CI 95% 17.7% - 20.1%] at 6 months. The overall difference from baseline to 6 months was significant; p<0.001.
- The reduction in benzodiazepine use was more pronounced. Benzodiazepine use reduced from 22.2% [CI 95% 21.0% - 23.5%] at baseline 17.6% [CI 95% 16.5% - 18.7%] at 6 months. The overall difference from baseline to 6 months was highly significant (p<.0001).

Response per state: In regards to the impact on ACH antipsychotic use, there were marked differences in response per state. Overall, reduction was highest in Queensland and the A.C.T (21% reduction), with the reduction in antipsychotic use lowest in Victoria (at 6%). The reduction observed in benzodiazepine use was more consistent, with prevalence rate reductions ranging from 20.5 to 26%, apart from West Australia (15.5% reduction). The Figure below illustrates this:

- Antidepressant and ‘prn’ data were available for 139 of the facilities. This use was monitored to assess for possible substitution practice.

Antidepressant use: Total antidepressant use in the ACHs decreased by 3% throughout the project. The use of mirtazapine and tricyclic antidepressants also declined slightly over the intervention. This small decrease in the use of sedating antidepressant therapy, while antipsychotic and benzodiazepine rates of use decreased at the same time, strongly suggests that these medications with sedating properties were not prescribed as substitutes. Please refer to the left graph below:

‘Prn’ or ‘as required’ prescribing: Substitution from regular to ‘prn’ sedative use does not appear to have happened either, as the number of residents charted for ‘prn’ antipsychotic and benzodiazepine medication decreased throughout the project. The decrease in ‘prn’ charting of antipsychotics and benzodiazepines at the same time regular dosing declined indicates that substantial substituting of regular to ‘prn’ dosing did not occur. Please refer to the right graph below.
Psychotropic review: To gauge the extent of dosage reduction/cessation attempts all residents taking antipsychotic and benzodiazepine medication at baseline were tracked over the project.

Coincidentally, a University of Sydney study examined the review of psychotropic medication in 17 N.S.W. ACHs over a 6-month period during 2014. As this research did not involve any intervention, it provided independent information about the ‘normal’ review patterns of sedative medication in ACHs. The researchers found that only half (53%) of residents taking this medication were reviewed by a prescriber, with a reduction in psychotropic dose occurring in just 4% of residents.

In the RedUSe project, 2195 residents were taking antipsychotics and 2247 were residents taking benzodiazepines at baseline. A total of 42% of all sedative medication was reduced or ceased during the project. The Figure below compares the review patterns of RedUSe ACHs (chart b) to those observed in the University of Sydney study (chart a) Effectively, the proportion of sedative dose reductions in ‘RedUSe’ was ten times higher than that observed in the University of Sydney study.

Evaluation of educational materials: Multiple training materials were developed and existing materials enhanced, for the RedUSe project expansion. During each training event the psychotropic knowledge of participants was evaluated using the validated OAP quiz (Appendix 1). At the staff training, the quiz was repeated at the end of the second session, with the two scores compared to ascertain if the training sessions increased knowledge. Evaluation forms were also completed.

Evaluation and quiz data was obtained from the full sample of 150 ACHs at the initial training session and 145 Homes at 3-months. The OAP quiz was completed by 1273 of participants (90%) at the start of the baseline training and 780 (69%) at the end of the 3-months. Scores were significantly higher
at the 3-month follow-up training than at baseline, with the average number of correct answers improving from 50% to 70%, demonstrating an increase in knowledge. Please refer to this table:

<table>
<thead>
<tr>
<th>Question Number/theme</th>
<th>Baseline % Correct</th>
<th>3-month % Correct</th>
<th>Improvement (%)</th>
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<tr>
<td>1 indication</td>
<td>79.5%</td>
<td>89.6%</td>
<td>10.1%</td>
</tr>
<tr>
<td>2 guideline</td>
<td>43.4%</td>
<td>81.3%</td>
<td>37.9%</td>
</tr>
<tr>
<td>3 side effect</td>
<td>31.3%</td>
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<tr>
<td>4 guideline</td>
<td>58.3%</td>
<td>79.5%</td>
<td>21.2%</td>
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<tr>
<td>5 indication</td>
<td>71.2%</td>
<td>82.4%</td>
<td>11.2%</td>
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<tr>
<td>6 side effect</td>
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<td>79.2%</td>
<td>26.9%</td>
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<td>7 guideline</td>
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<tr>
<td>9 guideline</td>
<td>43.4%</td>
<td>61.9%</td>
<td>18.5%</td>
</tr>
<tr>
<td>10 indication</td>
<td>41.2%</td>
<td>61.3%</td>
<td>20.1%</td>
</tr>
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</table>

Average psychotropic knowledge scores differed between the three participant groups and also increased significantly after training sessions for all 3 categories, as the Table below demonstrates.

<table>
<thead>
<tr>
<th>Profession</th>
<th>Baseline Average score (SD)</th>
<th>3-month Follow-up Average score (SD)</th>
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<tbody>
<tr>
<td>Registered nurse</td>
<td>5.62 (2.09)</td>
<td>7.83 (1.83)</td>
</tr>
<tr>
<td>Enrolled nurse</td>
<td>4.94 (2.11)</td>
<td>7.17 (2.00)</td>
</tr>
<tr>
<td>Carer</td>
<td>3.06 (2.16)</td>
<td>6.83 (2.02)</td>
</tr>
</tbody>
</table>

At the end of each training event, participants were asked to complete an evaluation form and ranked the training using a simple 5-point Likert scale. Participants were also invited to write comments about the project they liked. The training evaluation form was completed by 1079 individuals at baseline and 899 at the 3-month training. Using a basic Likert five point scale, staff rated the training highly, with over 85% reporting it was ‘very good’ or ‘excellent’ as shown below:

A selection of quotes written on the evaluation forms is included below:

“I learned the importance of reviewing the sedative medication and the importance of seeking other alternatives”. (RN)

“Really good, didn’t understand a lot before but now my understanding is better and I know what signs to look for in the residents”. (PCA)

“I learnt about the importance of reviews on the use and effects of drugs for that resident. Upholding the dignity of that person and their Quality of life is important”. (EN)

“It has made me realise that the GPs are often reluctant to prescribe sedatives/antipsychotics and it is pressure from nursing staff that leads to their use”. (champion nurse)
3. Conclusion

The RedUSe project expansion aimed to promote the quality use of antipsychotic and benzodiazepine medication in residential aged care through the delivery of a national, co-ordinated, multi-strategic intervention program. The main objective of ‘RedUSe’ was to enable nursing staff, care staff, GPs and pharmacists to effectively work together to ensure the appropriate and optimal use of psychotropic medication in residents with common mental health conditions living in residential aged care.

To achieve these aims we strove to promote an overall awareness of the significant risks and limited benefits associated with the use of antipsychotic and benzodiazepine medication in older frail people. We also highlighted local psychotropic use and promoted review of these medicines by the implementation of a structured, interdisciplinary review process. At every educational session, through case studies, group discussion and didactic training we actively encouraged and promoted the use of non-pharmacological strategies to manage behavioural and psychological symptoms in this age group as endorsed in professional guidelines.\textsuperscript{15,17}

The national expansion of the RedUSe project led to a statistically significant reduction in the proportion of residents in ACHs receiving antipsychotics and benzodiazepines, with two-thirds of Homes recording reductions in the use of both sedative agents. The percentage of residents recording a reduction or cessation in sedative dose was ten times that recorded in routine practice. Reassuringly, substitute prescribing to sedating antidepressants or ‘prn’ dosing did not occur. Similarly, the vast majority of dose cessations/reductions were sustained over a 3-month period.

The project was well received by the nursing and care staff participants and by the pharmacists delivering its strategies. GPs and nurse prescribers also rated the academic detailing provided highly.

Pleasingly, we found that the reduction in sedative use observed in the national expansion was higher than the reduction obtained in our initial RedUSe trial. Our findings strongly suggest that quality improvement strategies coordinated through a structured implementation program, and incorporating the dissemination of local data on sedative medication use, offer an effective approach to reduce psychotropic use and foster best practise in the residential aged care setting.

4. Referees:

Removed for privacy
Appendix 1: The Older Age Psychotropic (OAP) Quiz

This survey is anonymous. Your responses will be matched up by your participant number (your day and month of birth). Please write these details on the top of this form. Please also circle your profession, and whether you have attended a previous RedUSE training session.

Circle one answer for each of the following questions. When finished, check to ensure you have completed all 10 questions.

1. Risperidone is most effective for the treatment of which behaviour?
   a) calling out  
   b) wandering  
   c) aggression  
   d) repetitive questioning  
   e) don’t know

2. The maximum recommended daily dose of risperidone in older people with dementia is:
   a) 2 mg  
   b) 1 mg  
   c) 4 mg  
   d) 3 mg  
   e) don’t know

3. Which of the following adverse effects is NOT usually associated with the use of olanzapine?
   a) stroke  
   b)falls  
   c) raised blood sugar  
   d) reflux  
   e) don’t know

4. Regular reviews of antipsychotics in residents with dementia should be performed every:
   a) 6 weeks  
   b) 3 months  
   c) 6 months  
   d) 12 months  
   e) don’t know

5. The drug diazepam is mainly used to treat:
   a) depression  
   b) agitation  
   c) infection  
   d) anxiety  
   e) don’t know

6. Which of the following adverse effects is NOT commonly associated with oxazepam use?
   a) falls  
   b) memory impairment  
   c) nausea  
   d) confusion  
   e) don’t know

7. What is the recommended duration of temazepam treatment for sleep disorder?
   a) 1-2 weeks  
   b) 6 weeks  
   c) 1 month  
   d) 3 months  
   e) don’t know

8. The recommended medication for long-term treatment of anxiety in older people is:
   a) temazepam  
   b) an SSRI (e.g. sertraline)  
   c) risperidone  
   d) oxazepam  
   e) don’t know

9. Amitriptyline (Endep) is recommended as a night time sedative in older people.
   a) true  
   b) false  
   c) don’t know

10. Quetiapine (seroquel) is licensed to treat:
   a) dementia  
   b) schizophrenia  
   c) anxiety  
   d) insomnia  
   e) don’t know

The RedUSE project is funded by the Australian Government Department of Social Services under the Aged Care Service Improvement and Healthy Ageing Grant Fund.
Appendix 2: Sample RedUSE Newsletter - distributed to all participant ACHs and stakeholders biannually

The RedUSER, December 2015

Reducing tales

One resident on 2mg risperidone was pretty much bed-bound. He had had pneumonia and was ‘end stage’ on morphine. After reducing his risperidone gradually, (now on 0.25mg daily) he now walks with a frame, is back to eating a normal diet, and his family can come and take him out to breakfast again.

Another resident, Pam, who was on both temazepam and risperidone, used to sit in a chair, leaning over to one side with tremor. Having gradually ceased both these agents, the leaning and tremor have all disappeared and she sleeps less in the day.

Interim results

Final results have been compiled for half (77) of the aged care homes involved in the project.

Overall, the rate of benzodiazepine use of has reduced by 20% in these homes. The use of antipsychotics has also declined by 10%.

The sedative use of all the residents in the first two waves were tracked over the 6 month project.

We found that 42% of all sedatives were reduced or ceased by the 6 month mark.

Well done to all the homes in Waves 1 and 2!

Over 2000 nursing home staff trained to RedUSE

Since 2014 over 2000 nursing staff have attended RedUSE training sessions in aged care homes.

The RedUSE project involves a number of educational sessions for nursing staff, a 4 hour training workshop for champion nurses and a day-long educational session for pharmacists.

GP’s are also educated about the project in academic detailing sessions provided by NPS MedicinesWise and DATIS.

Educational sessions were designed in conjunction with an educational consultant and extensive feedback has been sought from stakeholders and all participants of the educational sessions.

The majority of participants (90%) ranked the sessions as ‘very good’ or ‘excellent’. One keen participant commented;

“I will be thinking more critically before administering sedatives as PRNs and also be vigilant at reviewing residents’ drug charts and sedative use.”
Appendix 3: Our Relative antipsychotic pamphlet

How can behavioural and psychological symptoms of dementia be treated?

Mild or moderate symptoms

Symptoms are mild or moderate if they occur only occasionally, are not causing serious distress to the person or putting them (or others) at risk. For most people with mild or moderate symptoms, improvement can be achieved without any drug treatment.

Non drug treatment includes using simple non-drug therapies such as one-to-one contact and soothing therapies like massage, aromatherapy, grooming, music and dance.

Severe symptoms

Symptoms are severe if they are happening very frequently and causing a great deal of distress and risk.

Non drug treatments: more specific treatments may be needed, including personalised plans that offer the person a chance for daily activities. Just 10 minutes of one-to-one time each day has been shown to reduce behavioural symptoms.

Drug treatments: if other options have been unsuccessful the doctor may prescribe medication. This will usually be an antipsychotic drug (e.g. risperidone, olanzapine). These drugs don't work for everyone and the benefits may be more limited when used for longer than 12 weeks.

It is important when antipsychotics are prescribed that they are reviewed every 12 weeks, and that dose reductions are attempted, when possible, to see if they are still needed.

What are antipsychotic drugs?

Antipsychotic drugs are a group of medications that are usually used to treat people with mental health conditions such as schizophrenia. They are sometimes used in people with dementia if they have severe behavioural and psychological symptoms.

Antipsychotic drugs help around 20% of people with dementia showing signs of aggression and can be an important part of their treatment. However, they can also cause side-effects, especially when used for longer than 12 weeks.

What are the benefits of antipsychotic drugs?

In people with severe behavioural and psychological symptoms of dementia, antipsychotic medication may be beneficial in reducing distress to the person and their family. They may also help in reducing the risk to the person and others around them if they are particularly aggressive at that stage of their disease.

Will an antipsychotic be of benefit?

How often is physical aggression displayed?

- Once a week
- Antipsychotic unlikely to be helpful

- 4-5 incidents per week
- Antipsychotic may provide some benefit
More action needed: Psychotropic prescribing in Australian residential aged care

Juanita Westbury1, Peter Gee2, Tristan Ling2, Alex Kitsos2 and Gregory Peterson3

Abstract

Objective: For at least two decades, concerns have been raised about inappropriate psychotropic prescribing in Australian residential aged care facilities, due to their modest therapeutic benefit and increased risk of falls and mortality. To date, the majority of prevalence data has been collected in Sydney exclusively and it is not known if recent initiatives to promote appropriate psychotropic prescribing have impacted utilisation. Thus, we aimed to comprehensively analyse psychotropic use in a large national sample of residential aged care facility residents.

Method: A cross-sectional, retrospective cohort study of residents from 150 residential aged care facilities distributed nationally during April 2014–October 2015. Antipsychotic, anxiolytic/hypnotic and antidepressant utilisation was assessed, along with anticonvulsant and anti-dementia drug use. Negative binomial regression analysis was used to examine variation in psychotropic use.

Results: Full psychotropic prescribing data was available from 11,368 residents. Nearly two-thirds (61%) were taking psychotropic agents regularly, with over 41% prescribed antidepressants, 22% antipsychotics and 22% of residents taking benzodiazepines. Over 30% and 11% were charted for ‘prn’ (as required) benzodiazepines and antipsychotics, respectively. More than 16% of the residents were taking sedating antidepressants, predominantly mirtazapine. South Australian residents were more likely to be taking benzodiazepines ($p<0.05$) and residents from New South Wales/Australian Capital Territory less likely to be taking them ($p<0.01$), after adjustment for rurality and size of residential aged care facility. Residents located in New South Wales/Australian Capital Territory were also significantly less likely to take antidepressants ($p<0.01$), as were residents from outer regional residential aged care facilities ($p<0.01$). Antipsychotic use was not associated with State, rurality or residential aged care facility size.

Conclusion: Regular antipsychotic use appears to have decreased in residential aged care facilities but benzodiazepine prevalence is higher, particularly in South Australian residential aged care facilities. Sedating antidepressants and ‘prn’ psychotropic prescribing is widespread. Effective interventions to reduce the continued reliance on psychotropic management, in conjunction with active promotion of non-pharmacological strategies, are urgently required.

Keywords

Psychotropics, aged care, antipsychotics, benzodiazepines, antidepressants

Introduction

Residents of Australian residential aged care facilities (RACFs), similar to those in many countries, have high rates of sleep disturbance, anxiety, depression, and behavioural and psychological symptoms of dementia (BPSD) (Björk et al., 2016; Chen et al., 2016). Although professional guidelines advocate non-pharmacological management as the first-choice treatment option for these common mental health conditions, in most cases, psychotropic agents – antipsychotics, antidepressants and/or anxiolytic/...
Appendix 5: RedUSe e-health tool showing medication data collected from community pharmacies

Appendix 6: RedUSe guidelines for ACH staff and health practitioners
Appendix 7: Information sheet for health practitioners

Information for Medical Professionals: About the RedUSe Project

In order to promote the optimal use of psychotropic medications, this aged care facility is participating in RedUSe (Reducing Use of Sedatives), a Department of Social Services funded project run by the University of Tasmania.

The RedUSe initiative offers support to assist GPs and residential aged care facilities to ensure that they are using an evidence-based approach to prescribing psychotropic medications.

As part of the 6-month RedUSe project, GPs and nursing staff, together with pharmacists, will receive education and facility-based information about psychotropic prescribing and participate in an interdisciplinary sedative review process.

Please speak to the director of nursing or your facility pharmacist about this project.

“About half of people in residential aged care facilities and up to 80% of those with dementia are receiving psychotropic medications... Experts recommend that they be used for a limited period only, with regular review regarding possible discontinuation at least three-monthly.”

ALZHEIMER’S AUSTRALIA
PAPER 38, MARCH 2014

For more information about this project, please refer to:
https://www.pharm.utas.edu.au/reduse/
1800 827 864 / REDUSE.PROJECT@UTAS.EDU.AU

The RedUSe project is funded by the Australian Government Department of Social Services under the Aged Care Service Improvement and Healthy Ageing Grant Fund.

Appendix 8: Research papers published (to date):

Appendix 9: Frequency of activities reported as the most effective in nursing staff training

<table>
<thead>
<tr>
<th>Activity</th>
<th>Baseline</th>
<th>3-month</th>
</tr>
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<tbody>
<tr>
<td>Case Study</td>
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<td>Quiz</td>
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<td>Content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
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</tbody>
</table>

Percentage of responses

0  5  10  15  20  25  30

Activity
Appendix 10: Examples of media articles relating to the ‘RedUSe project’

Intervention program effectively reducing sedative use

By Jackie Keast on October 7, 2015 in Industry, Research & Clinical

A national, interdisciplinary intervention program designed to more appropriately manage sedative use is leading to significant reductions in the use of antipsychotics and benzodiazepines in residential aged care, initial results show.

The program, known as RedUSe, or Reducing Use of Sedatives, was developed by researchers from the University of Tasmania (UTAS) and involves facility staff, pharmacists and GPs to reduce the inappropriate use of antipsychotics and benzodiazepines within residential aged care.

The program, funded by the Department of Social Services, was rolled out nationally in 2014 following successful trials in Tasmania. By 2016, 151 residential aged care facilities will have participated in the program.

Preliminary results from data collected from 77 facilities, or around 6,200 residents, show significant reductions in antipsychotic and benzodiazepine use, with the percentage of residents using each sedative falling by 10 per cent and 20 per cent respectively.

Some 40 per cent of residents who had been taking sedatives at the start of the program had their sedative use either ceased or dose reduced by the time the six-month program was completed.

Lead on the project, Juania Westbury, senior lecturer in Dementia Studies at the Wicking Dementia Research and Education Centre at UTAS, said the initial results were heartening and suggested RedUSe’s interdisciplinary approach was one of the more effective ways to manage the use of sedatives.

Dr Westbury will present on the findings at the upcoming Australian Association of Gerontology Conference in November.

“The real variation in the response, but when the three groups work together and recognise that everyone plays a part in ensuring appropriate care, you can really achieve some very good results,” she told Australian Aged Agenda.

“It is a modest change but we think that gradually over time it will continue to reduce. Change is incremental. It’s like losing weight. If you lose weight too quickly, you usually regain, but sustained change occurs in small incremental steps.”

Less sedation use in aged care

DUNCAN ABRY

REDUCING release on sedatives in aged care facilities has significant benefits for residents and carers, a senior University of Tasmania researcher says.

Juania Westbury, of the university’s Wicking Dementia Research and Education Centre, said a Federal Government grant had allowed nationwide rollout of the RedUSe program, following a trial in Tasmania in 2009.

The program was now implemented in 31 nursing homes across Australia, including six in Tasmania.

Dr Westbury said reduced use of the two most common sedatives — antipsychotics and benzodiazepines — had social, health and economic benefits for the entire aged care industry.

“There’s been a lot of publicity about antipsychotics. When used with people with dementia, it can cause overmedication, and we know that people using these medications have a higher rate of strokes, they get more pneumonia, they get more confused, and often we find that they don’t work very well,” Dr Westbury said.

“With the benzodiazepines, which includes Valium, again people can get over used and not con side. And a study from King’s College in London found that 15 per cent taking these drugs died.”

Margot Conner, manager of Sandy Bay Aged Care facility at Sandy Bay, said she was pleased her residents were being cared for with a minimum amount of chemical intervention.

Appendix 11: Feedback from pharmacists providing training to Aged Care Staff

The pharmacists played an essential role in the RedUSe project in that they delivered both educational sessions to nursing staff and also initiated all sedative review plans. We felt it was important to scope the opinions of this group regarding the project and, at the same time, evaluate barriers and enablers to their involvement. All 76 participating pharmacists were invited to complete a comprehensive on-line survey in March 2016. Forty-two pharmacists (55% of the total sample) completed the survey.

The majority of pharmacists (88%) thought that there was an overuse of psychotropic medication in the ACHs that they delivered the RedUSe project to, with 83% of the sample stating that they were not surprised by the results of the sedative audit.

“It was what I expected really. I knew they were over used.” pharmacist 37

Regarding nursing staff involvement, 95% of pharmacists received comments about the psychotropic audit, either from the nursing staff separately, or during the educational session. The majority of pharmacists (76%) felt the nursing staff were engaged in the project. Those that felt the nursing staff did not engage were asked to provide further details. Respondents raised barriers such as limited time, lack of motivation and poor attendance at education sessions.

“I believe the clinical nurse was actively involved, however I do not feel the remainder of staff changed their daily practice in a significant way. I believe a lack of communication and motivation within the facility limited engagement.” pharmacist 21

On a 5-point scale from ‘poor’ to ‘excellent’, 70% of pharmacists ranked the training and materials provided by the RedUSe project as ‘very good’ or ‘excellent’.

The pharmacists were asked if they felt the RedUSe project impacted sedative use, and, if so, in what way? The overwhelming majority of pharmacists (93%) reported that the project positively impacted sedative use, commenting, mostly, on the greater awareness of staff. Of the three pharmacists who felt that the project did not impact sedative use in the ACHs they serviced, they attributed this to GPs’ lack of engagement.

“It fosters relationships between different professionals and most importantly it empowers nursing staff to influence prescribing behaviour”. pharmacist 29

“Sedatives were ceased. Because nurses championed the cause, they directly spoke with GPs re individual Residents and GPs acted to cease or lower doses of sedative medications where this was indicated.” pharmacist 17

“I feel it provided the nursing staff with other options to manage difficult behaviours. Rather than nursing staff requesting sedatives first line, they have other strategies to try.” pharmacist 37

The pharmacists were asked to identify the advantages of the RedUSe project, with 41 respondents (98%) replying. Three key advantages were identified; quality of educational resources, audit and collaboration. Half of the pharmacists (n=20) listed the educational resources as one of the most beneficial aspects of the project, followed by the audit (n=9) and collaborative process (n=9). Seven respondents commented that the project increased awareness around the use of sedative medication and the importance of using non-drug strategies first-line. Five participants also commented that they appreciated the consistent messaging and structure the project provided, and stated that the support and facilitation of the project was appreciated:

“It fosters relationships between different professionals and most importantly it empowers nursing staff to influence prescribing behaviour”. pharmacist 29

“RedUSe gives an ACCURATE usage of sedatives... the education materials and support materials were phenomenal...... The project was commenced at a very timely moment in aged care history given the quite recent social publicity around antipsychotic use/overuse in aged care homes. Good for relationship building with the nursing staff.” pharmacist 41

Overall, 81% of pharmacists ranked the overall quality of the RedUSe project as ‘very good’ or ‘excellent’ on a 5-point scale ranging from ‘poor’ to ‘excellent’.

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References