

Innovating for Improvement

Care Home Continenence Promotion Care Bundle
(CPCB): Improving Quality of Care & Safety

NHS Lanarkshire Health and Social Care Partnerships



About the project

Project title: Care Home Continence Promotion Care Bundle (CPCB): Improving Quality of care and Safety

Lead organisation: NHS Lanarkshire Health and Social Care Partnerships

Partner organisation(s): National Procurement: NHS National Services Scotland

(Wider partnership organisations detailed in steering group membership in Appendix 2)

Project lead(s): Irene Barkby Executive Nurse Director NHS Lanarkshire: Project Sponsor

Jean Donaldson Associate Nurse Director South Lanarkshire Health & Social Care Partnership: **Project Chair**

Alice Macleod Nurse Advisor National Procurement: **Project Lead**

Margaret McDonald Care Home Manager & Project Improvement Nurse Summerlee Home North Lanarkshire

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Part 1: Abstract

Introduction

Incontinence is common in care home residents with prevalence ranging from 30% - 80% and is associated with risks such as falls, infection and skin damage (1-3). In care homes incontinence is primarily managed with absorbency pads which contain rather than promote and improve continence. National continence guidance suggests interventions such as toilet assistance, optimal fluids and nutrition and medication can promote continence rehabilitation and reduce the use of absorbency products in the elderly by up to 50% (1-3).

Our project outlines an innovative approach to promoting continence within 2 care homes in NHS Lanarkshire. This involved the development and implementation of a continence promotion care bundle (CPCB), consisting of 5 key interventions designed to improve care.

Primary outcome: To reduce the use of high absorbency products by 25% in 12 months

Secondary outcome: To reduce the safety risks associated with incontinence as a result of CPBC implementation.

The impact

A phased approach was used to implement the CPCB in 4 clinical areas within 2 care homes and data collected over a 10 month period (September 2016 – June 2017). 59 care home residents were involved in the project. Those who required end of life care were excluded.

Data demonstrated the following successes:

- Reduction in episodes of incontinence, reduction in pad use, less distress
- Improved record keeping
- More time with residents
- 40% - 65% reduction in falls
- 50% reduction in UTI
- 30% reduction in skin damage
- 40% reduction in unplanned hospital admission for falls / UTI

Economic Analysis : Potential for £250k resource savings in 9 months

Sustainability

The improvement we have developed would be transferable to other care homes, however further testing and refining the measures to establish and capture more robust outcome data would be beneficial.

Part 2: Progress and outcomes

Our Innovation

A care bundle is a collection of 3- 5 key process measures or interventions, developed from best evidence and known to improve care if they are consistently performed (8, 10). Care bundles have been evidenced to contribute to improvements in care quality and safety, however are less established in care homes and there are none known which address continence promotion in the elderly.

Our project developed and implemented a Continence Promotion Care Bundle (CPCB) in two care homes between September 2016 and June 2017.

The CPCB consists of the following process measures or interventions known to promote continence;

1. Documented continence assessment which identifies the type of incontinence
2. Documented outcome of toilet assistance (episodes of incontinence)
3. Documented fluid intake
4. Documented caffeine reduction
5. Documented medication review

The Intervention

Bundle audit cycles were performed weekly, randomly sampling 10 residents' records, to understand and improve compliance with the CPCB. Small tests of change were developed to improve compliance with bundle interventions, informed by the compliance data. Outcome measures evaluated continence promotion and risk reduction. (Appendix1).

Prior to the implementation of the CPCB care staff undertook a two day continence education programme which included the NHS Education for Scotland (NES) online Continence Module.

Changes to the original plan

Video production: - The project chair and I attended the Health Foundation Start up meeting where we saw a previous applicant present a video of their project. We discussed the use of this format with our steering group who were supportive as were the Health Foundation. We consequently decided to change the evaluation process from focus group interviews to a video that would capture the experience of the project from care home staff, residents and relatives.

Health economist: - The project budget was reporting an under spend at midterm review. Our project resources were calculated for 15 months but due to delays in approval of service level agreements, our timescales were reduced to 12 months which released project finances to support the above changes. We decided that our project would benefit from an economic evaluation and engaged a health economist.

Data Approach

Our project used qualitative and quantitative data to monitor the impact on care practice and safety. Quantitative data consisted of process data including: baseline audit of continence care, education evaluation, CPCB processes, and outcome data including: pad usage and cost data. Data on the incidence of falls, UTI and skin damage was collated retrospectively (9 month period prior to the project) and during the project.

Qualitative data gained from stories from staff, and relatives proved to be very powerful. Our evaluation sub-group developed a video that captured the experiences of care home staff and relatives taking part in the project. .

"I have been surprised by how this has freed up our time. We have much more time to spend with residents rather than focussing on personal care and frequent changes in clothing."

Care Assistant.

"This has been a great opportunity for us to work as a team to improve care. The project has energised our team and focussed on the major contribution the carers provide"

Unit Manager

"My mum experienced frequent urinary infections and was always falling. All of this caused great distress to the family. We have seen a huge improvement since this programme was introduced. My mum has not had a urinary infection or a fall since the programme started. She is asking to go to the toilet and is less distressed.

Daughter of resident.

Data Sources

Incontinence prevalence data from the Care Inspectorate was used to identify appropriate care homes to be involved in the project. NHS Lanarkshire's continence service provided data on pad use and cost data from October 2016 to July 2017.

Our primary data source was care home records. This established a baseline relating to bundle processes, falls, UTI and skin damage.

A baseline audit of 20 random residents across the 2 care homes was performed using the Royal College of Physician continence care home audit questionnaires (3). The results demonstrated that both care homes did not meet most of the elements in the organisational and clinical processes section of the audit, indicating a need to improve continence care and record keeping.

Additional tools were developed by the care home staff as part of the Plan, Do, Study, Act cycles (PDSA), to support bundle compliance measurement. These were adapted from published guidance (3-5) and included continence evaluation and categorisation documents. A reduction in the episodes of incontinence was added as an outcome measure following the initial testing of the bundle measures.

Project Impact

Across both care homes 74 residents used absorbency pads to manage incontinence with the majority using high absorbency pads; 75% of residents in the nursing home (n=59) and 25% in the residential home (n=15). Those who required end of life care were excluded from the project.

59 residents took part in the project (n=49 in the nursing home and n=10 in residential home). The majority of the residents were female (n=47). Within the project 98% of the residents had cognitive and physical incapacity. 65% of residents in the nursing home and 90% of residents in the residential home were assessed to have functional incontinence (Table 1&2).

Table 1: Demographics

Demographic	Nursing Home	Residential Home	Total	%
Residents in care home	79	50	129	
Number of resident who use products to manage incontinence	59 (75%)	15 (30%)	74	57%
Declined to take part	2	1	3	5%
number of residents eligible for pilot (exclusion end of life)	49	10	59	80%
Male	11	1	12	20%
Female	38	9	47	80%
Mean age	mean age 88 (range 76-98)	mean age 86 (range 73-95)		
Number of residents in pilot with incapacity	49	9	58	98%
wte Staff	124	64	188	
No of residents reviews in bundle cycles	(n= 36 cycles) 205	(n=25 cycles) 162	367	

Table 2: Urinary Incontinence Categorisation

Urinary Incontinence (UI) Categorisation	Nursing home	Residential Home	N Home (%)	R Home (%)
stress	12	0	24%	0%
urge	4	0	8%	0%
functional	32	9	65%	90%
overflow	0	1	0%	10%
transient	1	0	2%	0%
Total number residents	49	10		

Categorisation document adapted from Continence Resource Covidian Medtronic® with permission

Results

Nursing Home:

36 bundle PDSA cycles were performed in the nursing home between September 2016 and July 2017 involving 205 resident reviews.

The mean compliance with bundle process measures was 78% however 90% compliance was achieved and sustained from April 2017 (Figure 1).

The mean overall compliance with outcome measures; reduction in pads per 24 hours and reduction in episodes of incontinence was 62% with 65% - 75% achieved between January and April 2017. This fell between May and June 2017 due to a Norovirus outbreak (Figure 2).

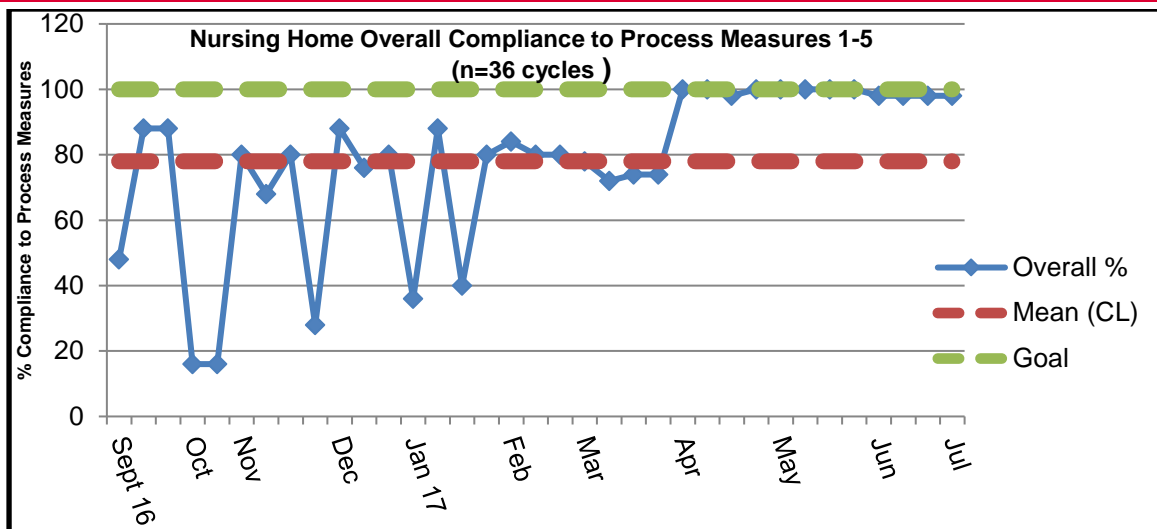


Figure 1: Nursing Home compliance to process measures

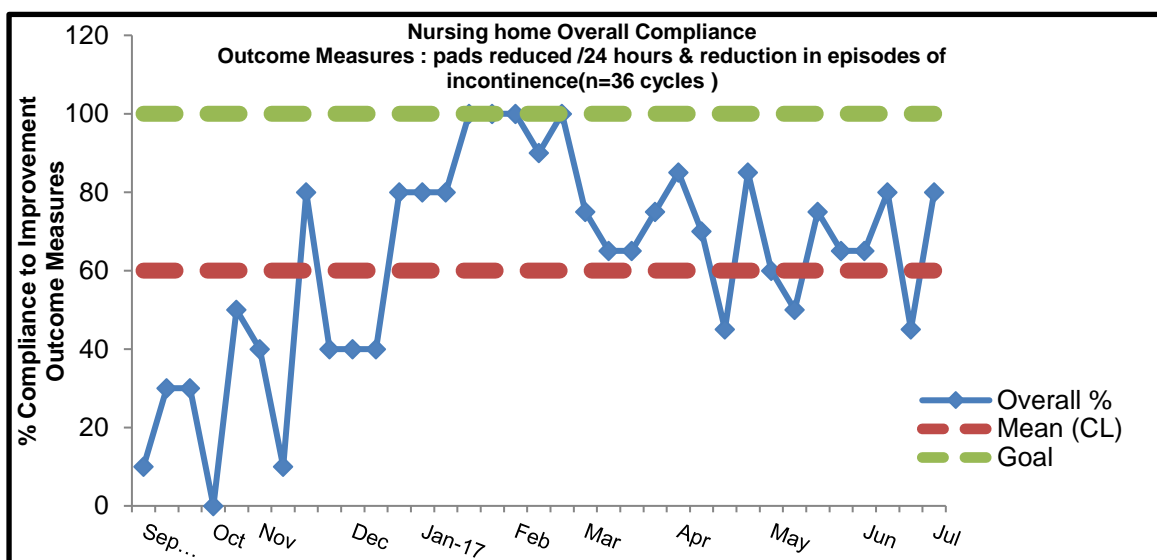


Figure 2: Nursing Home compliance to outcome measures

Residential Home

25 bundle cycles were performed in the residential home between October 2016 and July 2017 involving 162 resident reviews.

The mean compliance with bundle process measures was 36% however 60%- 70% compliance was achieved and sustained from June 2017 (Fig 3.)

The mean overall compliance with outcome measures; reduction in pads per 24 hours and reduction in episodes of incontinence was 30% however 45% - 70% was achieved between March and May 2017. This fell in June due to poor record keeping (Fig 4).

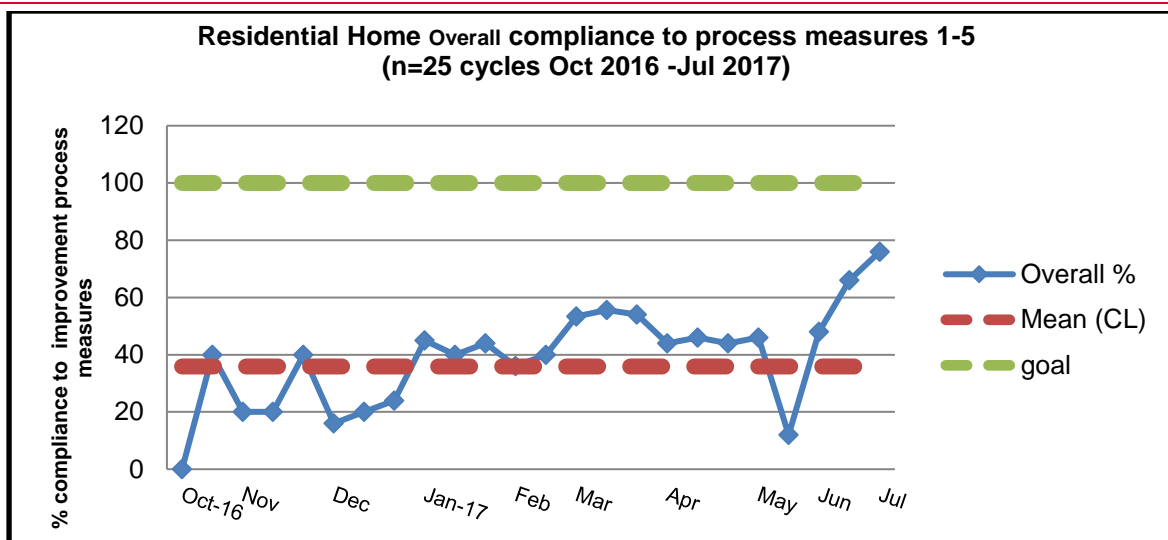


Figure 3: Compliance to process measures

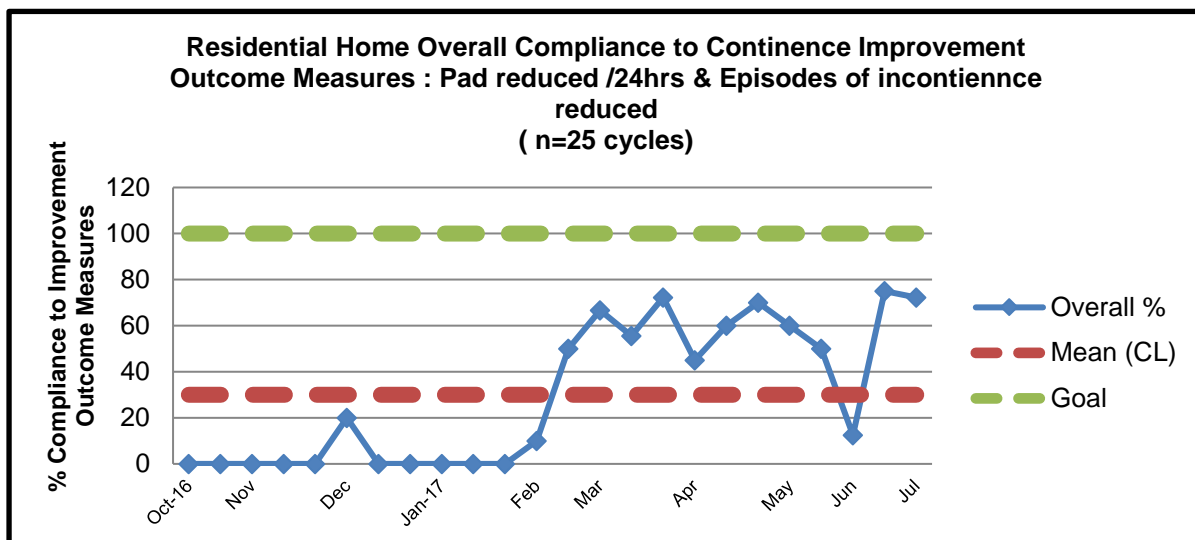


Figure 4: Compliance to outcome measures

Risk reduction (Nursing Home)

- Falls 65% reduction
- UTI 50% reduction
- Skin damage 30% reduction

Risk reduction (Residential Home)

- Falls 40% reduction
- UTI 20% increase
- Skin damage no comparison data available to compare reduction in skin damage

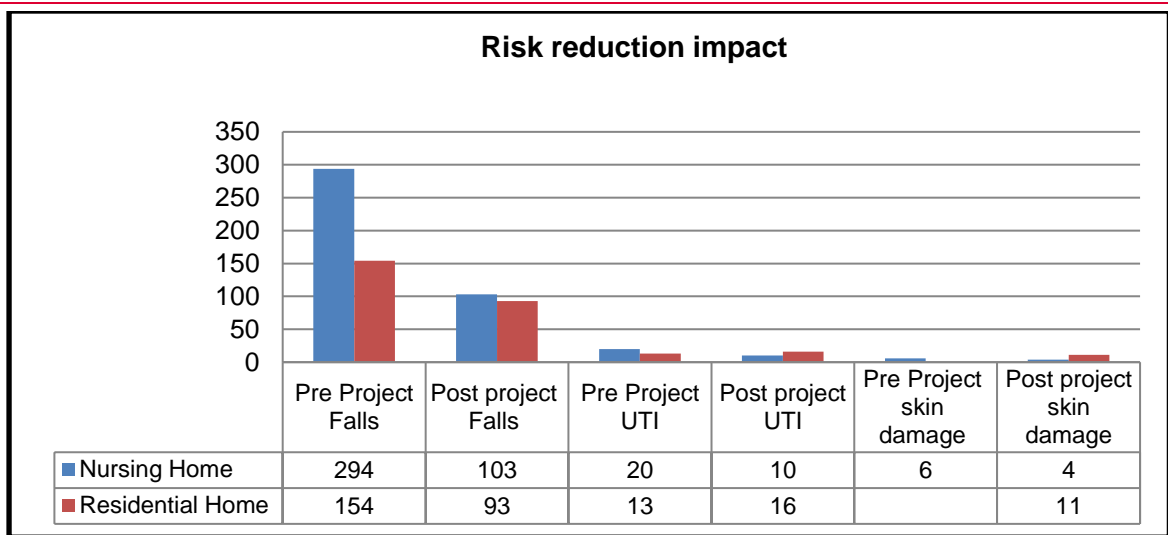


Figure 5: Risk reduction

Reduction in the use high absorbency pads was achieved, with a 57% and 30% reduction in nursing and residential home respectively.

Table 3: Reduction of High Absorbency Pads

Reduction of High Absorbency Pads (HAP)			
	Residents on HAP	Residents Re-Assessed for Reduction	% reduction
N Home	49	28	57%
Res. Home	10	3	30%

Part 3: Cost impact

An exploratory economic analysis was undertaken to assess the costs and potential value for money associated with implementing the improvement bundle in the setting of a single nursing home in Lanarkshire. The analysis was based on the aforementioned data collected during project implementation; specifically data relating to the use of incontinence containment products and incontinence-related events (Figure 5). These outcome data were supplemented with published data on the costs and quality-of-life impact associated to these events, which facilitated an assessment of the potential value for money of the improvement project.

A full report of the analysis can be found in the following embedded document. The analysis was based on data collected for the nursing home only. Comparative data were not available from the residential home.



IMCOP economic
assessment 24 08 17.

Key findings

The care bundle implementation appears to have led to a noteworthy drop in the rate of incontinence and also to three adverse events linked to incontinence. This inevitably leads to a reduction in the resources and costs associated with managing these events. In addition, owing to the reduction in use of incontinence containment products (high absorbency pads), consumable costs will also have been reduced.

Overall, implementation of the bundle in the nursing home appeared to have the potential to generate net cost reductions in the region of **£250,000** over the 9 months follow-up period. Although the majority of the cost reduction represents a staff resource saving, a small proportion of the reduction stems from a fall in absorbency pad use which represents a consumable saving.

It is important to note that the cost of implementing the improvement project must be offset against the total savings. The overall improvement project budget was circa £50,000. However, although it is difficult to apportion the project budget to each implementation activity, it is likely that the cost of implementation is lower than the budget for the project.

A reduction in incontinence and incontinence-related events such as falls and UTIs is also likely to have an impact on the HRQoL of the care home residents. Based on the exploratory analysis, implementation of the improvement project may generate an additional 4 quality-adjusted-life-years (QALYs).

In summary, in economic terms, the improvement project is said to dominate usual care because it has led to a reduction in costs and also an improvement in patient outcomes and quality of life.

Exploratory analysis and future work

Additionally, a forecasting model was developed to calculate the potential long-term effects of the care bundle. The simulation was run over a time horizon of 5 years and 3 months which corresponds to the average life expectancy of people aged 88 living in the UK. The time horizon was chosen to reflect the average age of the nursing home cohort and was adjusted to account for the male/female proportion in the cohort. Overall, the model suggests that implementation of bundle may lead to resource reductions in excess of **£1.6m** and may generate approximately 22 additional QALYs in the nursing home analysed.

With 73 care homes registered in NHS Lanarkshire alone, the potential resource implications for rolling out the care bundle at the national level could be considerable, assuming that the project could be successfully implemented in other settings.

However, due to important uncertainties and limitations of the current analysis and underlying data, these results should be considered with caution. Future research design should focus on collecting more detailed, patient-level data including: patient characteristics, incontinence status, incontinence type and severity, incontinence-related events and their severity, resource use and costs, and HRQoL using a generic questionnaire such as the EQ-5D. In addition, detailed costs required to implement the care bundle intervention should also be collected.

Data should be collected prospectively in two parallel cohorts (intervention and control) to which access to the improvement bundle had been randomised. The follow-up period should be beyond 1-year in order to capture any seasonal changes in outcomes.

A multicentre research design in which data is collected at the same time from multiple care homes would also facilitate the extrapolation of the results at the national level. If randomisation is not possible, a detailed set of characteristics in the intervention and comparator arm should be collected which would serve to adjust the results of the analysis for any relevant covariates that can influence the outcome of the treatment (improvement bundle) in the two groups.

Part 4: Learning from your project

The aims and objectives identified in our project application have been achieved. Our success is due to the support and enthusiasm of the care home improvement nurse, care home staff and the wider project team.

“The team has been very enthusiastic about this project. It is great to see the energy and the effect on staff when they see evidence of how they have influenced and driven improvement in continence care . There is a general buzz about the place”

Care Home Manager

The care home managers and staff were key enablers who led the successful implementation of the CPCB, with facilitation from the project lead.

“The documents developed as part of this improvement have been very beneficial. We can identify residents not taking optimum fluids and have improved on this. Staff found the urinary categorisation very helpful and we have redesigned our care plans”.

Care Home Manager

In addition the wider project team provided both support to the care home staff within the project sub-groups; audit, education, bundle development and evaluation.

These groups developed the initial processes to support the project outcomes and delivered their objectives within tight project timescales enabling the implementation phase to progress.

Our project chair provided excellent leadership and encouragement to our project steering group. She effectively managed discord from competing demands of a wide project team with different expertise and expectations, providing solutions and direction. In addition she also provided advice around the governance process required for video filming, taking account of NHS Lanarkshire corporate governance processes. She enabled the engagement of senior management in NHS Lanarkshire who will be critical in supporting sustainability and future investment in this improvement activity.

Support from relatives was crucial. A high proportion of the residents in both care homes lacked cognitive capacity (98%). Consent to take part in the project was obtained from relatives who held Power of Attorney. In addition consent was also obtained from staff and relatives who kindly shared their experience in the project video.

Project information leaflets and a poster were developed with the support of communication managers in both NHS Lanarkshire and NHS National Procurement. Care home staff helped to promote the project and provided information to families, particularly family members who would be responsible for decision making on behalf of residents who lacked capacity (Appendix 1).

“The manager asked me if I wanted my wife to take part and gave me some information. I have been delighted in what has been done. My wife is not wet or in distress when I visit. It is good to know the staff are striving to improve her care”

Husband of resident

Challenges

The project team lacked expertise in improvement science which created challenges in the early development of the CPCB. This was overcome with some input of the NHS Lanarkshire improvement lead.

Care home staff were unfamiliar with reviewing and using data for improvement and participating in bundle PDSA cycles. Consequently there were issues with resistance. Although we experienced early adopters who championed the project, some staff were less receptive, resulting in incomplete record keeping and reduced compliance with bundle measures. This was more prevalent in the residential home, and may have been due to a change in leadership. The care home manager left at the start of implementation leaving a period of 2 months until a permanent manager was appointed.

We tried to overcome resistance by supporting, encouraging and motivating the care home staff, and by celebrating success. Although the overall scores may have been lower in comparison to the nursing home, the residential home still evidenced improvement. Reflecting on this with a senior carer, it was heartening to note that she gained valuable experience in this process.

“I found it difficult to speak to staff who did not value the importance of completing the continence evaluation charts....when there was no information on a resident’s fluid intake or when they were taken to the toilet. I have learned to approach this differently, using encouragement rather than criticism....showing them how care is improved when they participate and complete documents accurately”

Social Care Worker

It is important to note that improvement was seen in both homes but at a different pace. The results demonstrate a difference between the nursing home and residential home in achieving overall compliance to bundle measures and in the outcomes. It is unclear if this was a leadership issue particularly in challenging resistance to change or related to the different organisation structure and culture between the two care homes.

Interestingly staff noted an improved confidence in continence promotion as a result of education provided prior to the pilot; however the project demonstrated that improvement in outcomes took 6 months to evidence. Therefore it is noted that that education alone does not result in changes to practice.

Our project improvement nurse, who was the manager in the nursing home, reported how important it was for the carers to be involved as they deliver most of the care. They were pivotal in driving improvement, changing their behaviour and beliefs.

The care homes were cautious and reluctant to make the decisions on reducing pad absorbency, which was not achieved until the end of the project. We assume this was due to building confidence in the findings.

An interesting finding from our project care home support nurse observation was that a significant number of medications were stopped as a result of the project. This information was not routinely collected and would warrant further exploration in any future testing of the CPCB. This may be an additional area of financial benefit.

The learning from this project will influence further improvements in project design and data collection. In line with recommendations from the economic assessment further testing will strengthen how we can evidence the impact of continence promotion. If health related quality of life measures (HRQoL) such as the EQ-5D are important, we need to consider how this will fit with a care home population who have cognitive impairment and if proxy measures of HRQoL would be reliable.

Part 5: Sustainability and spread

Our project has demonstrated that the use of quality improvement methods and the implementation of CPCB can improve continence care and has the potential for a wider effect on re-enablement and promoting patient safety.

The benefits of any project, may be realised throughout the duration, however improvement may be short lived if it is not sustained. A significant success factor is that the improvements were generated by care home staff and their ownership in the successful implementation of the CPCB as opposed to an external 'expert' performing improvement.

The improvement we have developed would be transferable to other care homes, however further testing and refining the measures to establish and capture more robust outcome data would be beneficial.

Taking forward learning from this project, further refinements would include; developing measures to assess the effect on medication reduction, unscheduled admissions and releasing time to care. In addition, further testing of this model of care will provide evidence for wider implementation.

A reporting structure has been a feature of this project where the care homes submitted data from bundle testing that was analysed and shared with the homes, with support and advice on areas to focus for improvement.

To maintain this, a short term plan is for the care homes to continue to collect CPCB data within a developed database, where care homes can monitor improvement monthly. A data reporting structure will have to be agreed and will be a recommendation made to NHS Lanarkshire as part of a project exit strategy.

Further testing of this improvement activity is supported by the project chair but will require both investment and discussion of the approach, particularly how this improvement activity would fit with the wider primary care partnership, integration and transformation plans.

It is acknowledged that this project was an improvement project, developing and testing the CPCB. The project lacks the robustness of a research study, which may limit the findings.

It is anticipated that further refining and testing of this improvement work will be a recommendation made to NHS Lanarkshire as part of the project exit strategy.

Activities

- July 2016: NHS Lanarkshire & NHS National Procurement Communication Managers: NHS National I Service Journal and Local press coverage of our project launch.
- October 2016: The project was presented at the British Society of Geriatricians: Bladder and Bowel Special Interest Group (SIG) conference: Improving Continence in Older People. Manchester
- February 2017: Poster presentation NHS Lanarkshire Person-Centred Health & Care Event and presentation accepted for Scottish Care Conference November 2017
- June 2017 : NHS Lanarkshire Sponsor : Executive Nurse Director has nominated the project for a Merit Award
- July 2017: Head of Strategic Sourcing NHS National Procurement is submitting the project for Procurement Government Opportunities (GO) award.
- Regular updates by our Project Chair to: North and South Lanarkshire Health and Social Care Partnerships
- Regular updates from the Project Steering Group minutes to wider partners; Care Inspectorate, Scottish Care, Health Protection Scotland and Health Improvement Scotland.
- Communications strategy: Project promotion plan with Local Press coverage and Health Board communication journals to be developed by communication managers in NHS Lanarkshire and NHS National Services following final submission of the project to the Health Foundation.
- The final report and access to the evaluation video will be disseminated across NHS Lanarkshire, North and South Health and Social Care Partnerships , NHS Scotland partnerships agencies; Scottish Care, Care Inspectorate , Health Improvement Scotland ,Health Protection Scotland and to Scottish Executive Nurse Director Group

Project Exit Strategy

- Submission of a position paper to North and South Lanarkshire Health and Social Care Partnerships with recommendations for investment and wider testing by November 2017
- Aim to submit the project of a healthcare journal for publication December 2017 and promote the project at healthcare conferences.

Additional Project Data

Table 4

Summary of Admissions	January-September 2016	October - May 2017	
Residential Home	2	0	
Nursing Home	8	4	
Total	10	4	40 % reduction

Source : NHS Lanarkshire Quality Department : emergency admission data for falls & UTI



CPCB Process & outcome data.pdf



A Cavinue Continenence Bundle Cf



A Cavinue Continenence Education

Project CPCB & Data Collection tool & Continenence evaluation document.



Continenence Promotion Care Bundl



Continenence Evaluation V2.pdf



i8033b Categorizing Urinary Incontinence

Appendix 1: Resources and Promotion

Project Resources

Care Inspectorate Scotland: Promoting continence for people with dementia and long term conditions.

<http://www.careinspectorate.com/index.php/guidance?id=2613>

Interactive ACT Programme for Continence Management (Assessment and Continence Training) 2014 Covidian Medtronic®. www.covidian.com

Decision aid for diagnosis and management of suspected urinary tract infection (UTI) in older people.

https://www.scottishmedicines.org.uk/SAPG/Decision_aid_for_UTI_in_older_people.pdf

Project Promotion

    
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Appendices 1

Comments from Project Chair; Jean Donaldson Associate Nurse Director South Lanarkshire Health & Social Care Partnership

“Chairing the project to improve continence in care homes and reduce harm associated with incontinence on behalf of NHS Lanarkshire was exciting. Having previously been employed in the role of Care Home Liaison Nurse I was enthused at the opportunity to once again work extremely closely with colleagues in the Care Home sector to improve care for residents.

Having the ability to support and guide the development of staff working in the care homes linking them with relevant services within NHS Lanarkshire to promote continence by utilising improvement methodology was a real privilege. The changes to care provision have been significant and as this was driven by the staff working in the Care Homes it is more likely to be sustained in the longer term”.

Comments from Project supported care home improvement nurse; Margaret McDonald Manager Summerlee Nursing Home North Lanarkshire

“We have had the pleasure and privilege to be involved in this pilot.

It was a new improvement approach for us as care home staff PDSA cycle using bundle measures.

We are all surprised and delighted with the impact this has had on our residents and reductions in associated risks. This project has improved the quality of life for our residents and staff are reporting more quality time to spend with residents.

We have new improved assessments, categorisation tools, and have consolidated recording charts.

This is a new routine and approach to promoting continence/sustaining improvement and I would urge all care home managers to embrace this improvement”.

Project Steering Group

NHS Lanarkshire Care Home Project Steering Group		
Name	Designation	Representing
Irene Barkby	Executive Nurse Director (Project Sponsor)	NHS Lanarkshire
Jean Donaldson	Associate Director of Nursing (Project Chair)	NHS Lanarkshire South Health & Social Care Partnership
Alice Macleod	Nurse Advisor (Project Lead)	National Procurement, NHS National Services
Margaret MacDonald	Care Home Manager Project Funded Improvement nurse	Summerlee Nursing Home (Balmer Group North Lanarkshire)
Eleanor Cook	Project Funded co-ordinator / analyst	National Procurement, NHS National Services
Allison Cavinue	Care Home Liaison Team Leader	NHS Lanarkshire
Allison Hilley	Continance Team Leader	NHS Lanarkshire
Debra Allison	Care Home Manager David Walker Gardens Local Authority Care Home	South Lanarkshire H&SCP
Adelle Gibson	Social work carer David Walker Gardens	South Lanarkshire H&SCP
Jacqueline Dennis	Improvement Advisor	Care Inspectorate
Hillary Stevenson	Independent Sector Integration Lead South Lanarkshire Health & Social Care Partnership	Scottish Care
Nanette Paterson	Independent Sector Integration Lead South Lanarkshire Health & Social Care Partnership	Scottish Care
Jane McNeish	Senior Nurse Epidemiologist	Health Protection Scotland
Lesley Shepherd	Nurse Consultant	Health Protection Scotland

We wish to acknowledge the following people who provided additional support to the project.

Jonathon O'Reilly	Improvement Lead	NHS Lanarkshire
Margo Russell	Director NMAHP Practice Development	NHS Lanarkshire
Sue Hutchison	Communications Manager	NHS National Services Scotland
Euan Duguid	Communications Manger	NHS Lanarkshire
Martin Burt	Producer	Native Film Company Scotland
Ed Clifton	Senior Health Economist	Scottish Health Technologies Group Healthcare Improvement Scotland
Lucian Gaianu	Health Economist	Scottish Health Technologies Group Healthcare Improvement Scotland

Sincere thanks to all the project care home staff residents and relatives who kindly shared their experience in the project

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