Reducing Inappropriate Polypharmacy in Care Homes

Aiysha Saleemi, Darzi Fellow

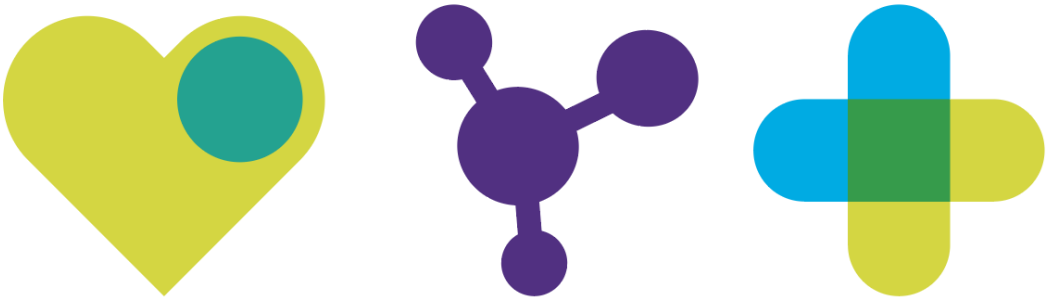
Health Innovation Network South London

Contents

About

Polypharmacy is a global patient safety challenge and literally means 'many medicines'. It has been defined by the World Health Organisation (WHO) as the routine use of four or more medicines including those that are prescribed or bought in a pharmacy (including herbal medicines).[1]

This project explored ways to reduce inappropriate polypharmacy in care homes. The findings of the project, recommendations and learning for future work are included in this report which also informs the Reducing Anticholinergics in Care Homes (ReACH) implementation guide.



Executive Summary

During 2018/19 the Health Innovation Network (HIN) worked in partnership with four south London care homes to explore ways to reduce inappropriate polypharmacy in older adults.

The HIN engaged with care homes in south London via existing local care home forums and the Clinical Commissioning Group/Local Authority care home leads to recruit care homes to partake in the project.

Four care homes volunteered to participate:

- Nightingale Hammerson, Wandsworth
- Milverton Nursing Home, Kingston
- Link House Care Home, Merton
- Morden College, Greenwich

The care homes in Wandsworth, Kingston and Merton chose to work towards reducing anticholinergic medicines in care homes (ReACH), while Morden College chose to improve the use of non-pharmacological options.

Findings

Reducing Anticholinergics in Care Homes (ReACH)

- Across three care homes, approximately 100 medication administration records were reviewed for residents with dementia. From these, twenty residents were prescribed at least one medicine with high anticholinergic activity.
- In total, 23 medicines were highlighted and referred to the GP and over 50% of those reviewed by the GP were stopped.
- Resources were created to raise awareness of anticholinergics and polypharmacy including:
    - A poster detailing the side-effects of anticholinergics for care home staff
    - A poster encouraging medication reviews
    - A leaflet explaining the potential risks around polypharmacy
- All these resources have been endorsed by 'Me and My Medicines', a patient-led campaign to improve communication around medicines and the Medicines Support Campaign led by the National Institute for Health and Care Excellence (NICE).
- To implement ReACH download the free implementation guide here.

Increasing dietary fibre

- These residents had increased dietary intake over four weeks to reduce the use of laxatives.

- This resulted in five out of the six residents having 50-100% reduction in laxative use demonstrating that amendments in diet can reduce the need for some pharmacological interventions.

Conclusion

Polypharmacy is a complex problem which needs to be resolved through a multi-faceted approach. The focus of this project was to raise awareness of the potential risks of polypharmacy, reduce the use of medicines with high anticholinergic activity and use increased dietary fibre to reduce the use of laxatives. The findings demonstrate that targeting a specific group of medicines and utilising non-pharmacological options are two methods that can be successfully deployed to reduce use of inappropriate polypharmacy in care homes.

The resources created in this project raise awareness of polypharmacy and encourage medication reviews. These resources can be used in multiple setting including care homes, domiciliary and general practice surgeries to encourage conversations about medicines.

Download the free resources and implementation guide here.

Background

The number of people over 85 has doubled in the past three decades[2]; 82% of this older age group will have more than one long term condition.[3] This population are more likely to routinely use several medications and be at risk of side-effects and interactions.[4]

People living in residential and nursing homes have complex health and social care needs and many have multiple co-morbidities. As a result, many of them experience polypharmacy. The Royal Pharmaceutical Society states in their report 'The Right Medicine – Improving Care in Care homes' that the average age of residents in care homes for the elderly is 85 and they take an average of seven prescribed medications each day.[5] This predisposes these residents to an 82% risk of adverse drug reactions.[4] A by-product of polypharmacy is medicines waste. It is estimated that £24 million (out of £300 million estimated total medicines wastage in England) is lost every year due to medicines waste in care homes across England.[1]

The focus of this project was to research ways to reduce the use of inappropriate polypharmacy in care homes. Alongside this, the HIN explored options to enable care home residents and relatives to feel empowered to engage in conversations about their medicines in line with NICE guidance which states:

"enabling people to raise any concerns about their medicines and managing medicines-related problems effectively when they happen are important to minimise harm and guide future care." [6]

This is supported by the patient-led campaign 'Me and My Medicines' which helps people raise concerns and use their medicines better. They encourage patients, families and carers to ask questions by promoting 'it's ok to ask' with the overarching aim that this will help everyone benefit from more effective and safer care.[7]

Methodology

The Health Innovation Network have close working relationships with the Clinical Commissioning Group (CCG)/Local Authority (LA) care home leads in south London and regularly attend care home forums. The care home lead in each borough was contacted informing them of the project and an article, explaining the project, was included in the HIN Healthy Ageing newsletter to advertise the opportunity to be involved in the project.

The four steps to deliver the project, engagement, communication, implementation and data collection are detailed below:

Engagement

The project was presented at care home forums to gauge initial interest and inform care home managers and staff of the project. All CCG/LA care home leads were then emailed to confirm if any care homes in their borough may want to participate in the project. A face-to-face meeting was arranged with each care home manager/clinical lead interested in participating in the project to discuss their expectations of the project and their criteria of the intervention. The main themes that arose from these meetings include:

- Medicines were mainly prescribed from secondary care
- Improved hydration, movement and sleep hygiene were already encouraged
- Reviewing anticholinergic medicines to reduce the risk of falls would be useful
- The need for information on polypharmacy and education for residents and relatives

The intervention criteria specified by each of the stakeholder groups is illustrated in appendix 1.

Communication

All of the identified stakeholders, including care home residents/relatives, care home pharmacists, care home managers and general practitioners, were contacted and informed about the project via email, telephone calls and face-to-face meetings. Information was gathered by the HIN on potential interventions. The process of reaching the focus of the project intervention is shown in appendix 2.

Residents/relatives

A meeting was arranged to inform residents/relatives about polypharmacy and the potential risks of taking multiple medicines. Anyone interested in the project was then invited to a focus group at a later date.

Care Home Pharmacists

Each care home pharmacist for each of the boroughs participating in the project were met individually and informed of the project. A discussion was had on any ideas they had around potential interventions. The care home pharmacists were kept informed of all meetings and presentations that were delivered to care home staff, residents/ relatives and the GPs.

General Practitioners

A meeting was arranged with each GP covering the four care homes. Residents from one care home were registered with five different GP practices, the HIN engaged with only one of these five practices for the purpose of this project.

Implementation

Reducing Anticholinergics in Care Homes (ReACH)

Three out of the four care homes chose to work to reduce the use of medicines with high anticholinergic activity:

- Care home staff were invited to attend a one hour workshop which included a presentation on polypharmacy and anticholinergics and a briefing on data collection.
- Their confidence levels around identifying and highlighting these medicines was recorded before and after the presentation.
- The HIN supplied the care home staff with the list of medicines with high anticholinergic activity from the NHS Business Service Authority (NHS BSA) Medicines Optimisation Polypharmacy Prescribing Comparators[8], a data collection form and a poster detailing the side-effects of anticholinergic medicines.
- The care home staff were advised to review the medication administration records and note any medicines with high anticholinergic activity on the data collection form.
- The care homes were requested to send the list of identified medicines with high anticholinergic activity to the GP via secure email or to ask the GP to review one or two medicines from the list on the next visit to the care home.

Increasing dietary fibre

One care home opted to improve the use of non-pharmacological options as a method to reduce use of medications. Care home staff attended a meeting with the HIN to discuss possible non-pharmacological interventions that would be useful in their care home. The 14 nurses and carers that attended the meeting decided that using a non-pharmacological option to reduce the use of laxatives would be a useful intervention. A Fibre Food Fact Sheet[9] was utilised to increase dietary fibre over a period of four weeks for residents requiring laxatives ad hoc, in an attempt to reduce the use of laxatives. Exclusion criteria included residents on opioids, those with an existing

gastro-intestinal condition and those prescribed laxatives regularly.

Data Collection

Reducing Anticholinergics in Care Homes (ReACH)

Confidence levels of care home staff, care home pharmacy teams and community pharmacy teams around identifying and highlighting anticholinergic medicines were recorded before and after a short presentation. See appendix 4 for an example of the questionnaires.

Once the GP had reviewed all the medications highlighted, the following information was collected:

- Number of medicines stopped
- Number of medicines switched
- Number of medicines unchanged

Increasing dietary fibre

The following information was collected:

- Additional amount of dietary fibre given to each resident
- Number of times laxatives were administered in the four weeks prior to increased fibre intake
- Number of times laxatives were administered over four weeks during increased fibre intake

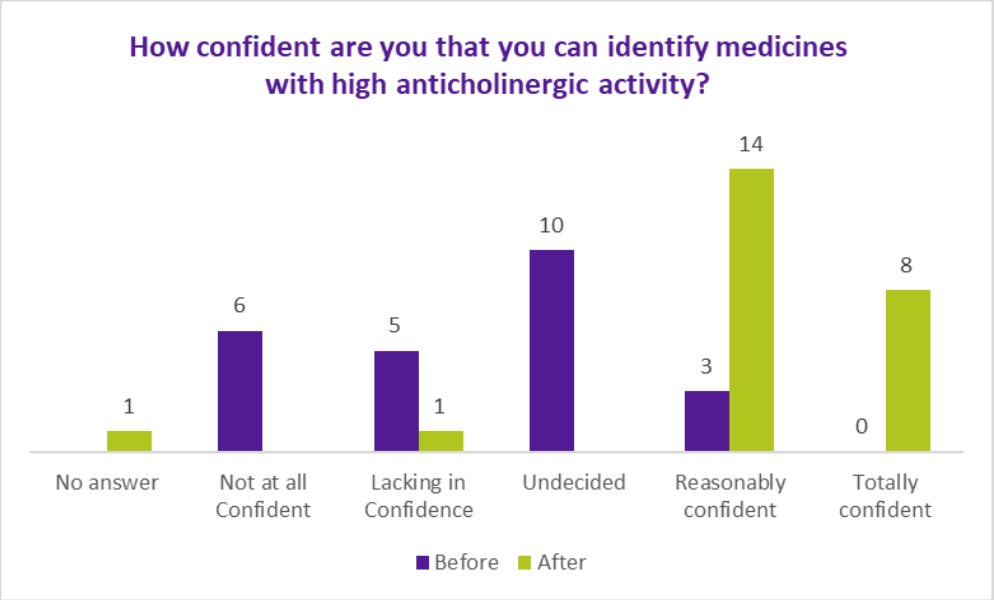
Results

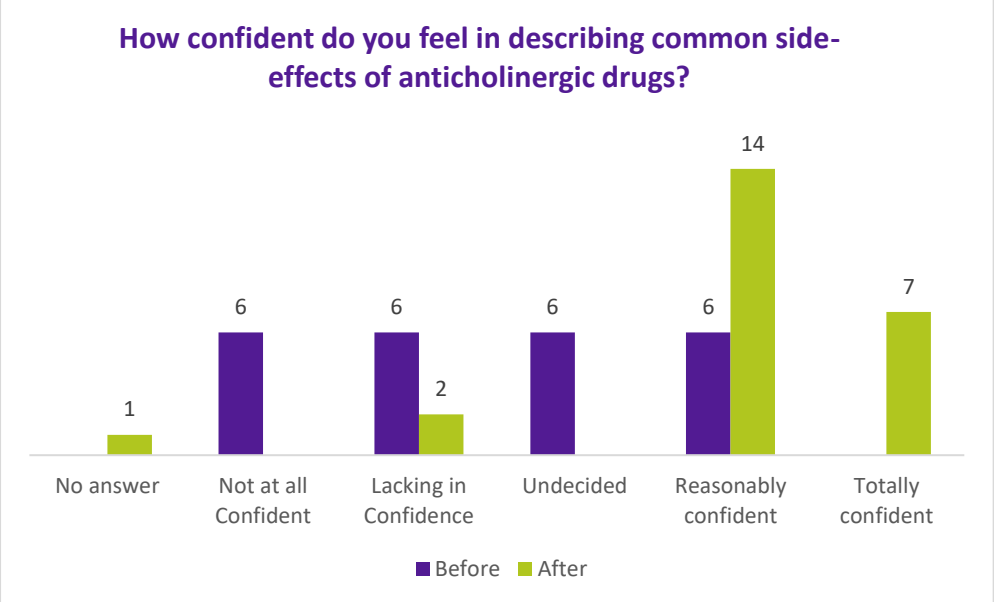
ReACH

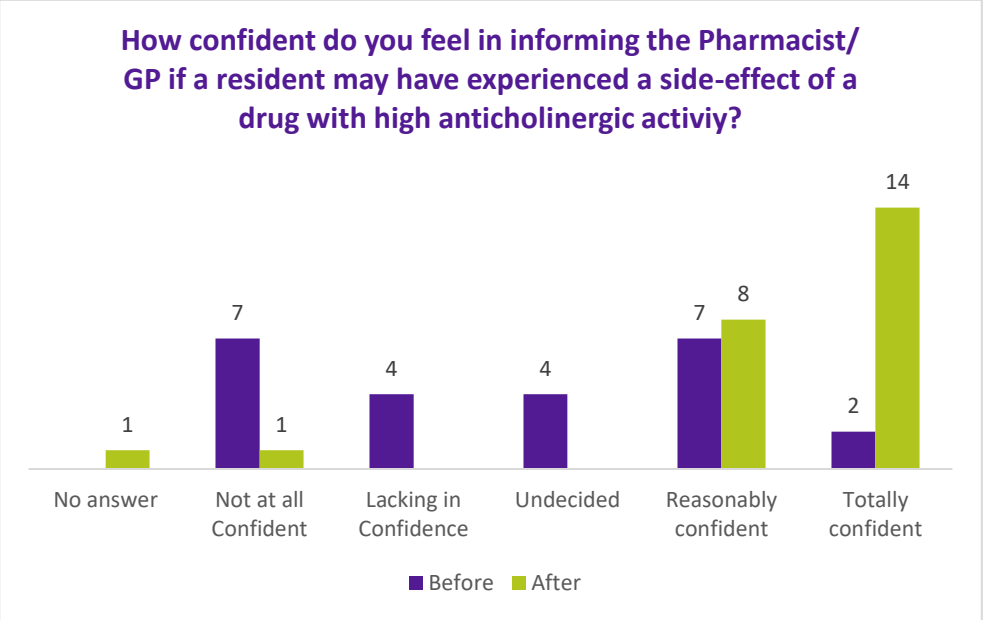
Three care homes participated in reducing the use of medicines with high anticholinergic activity:

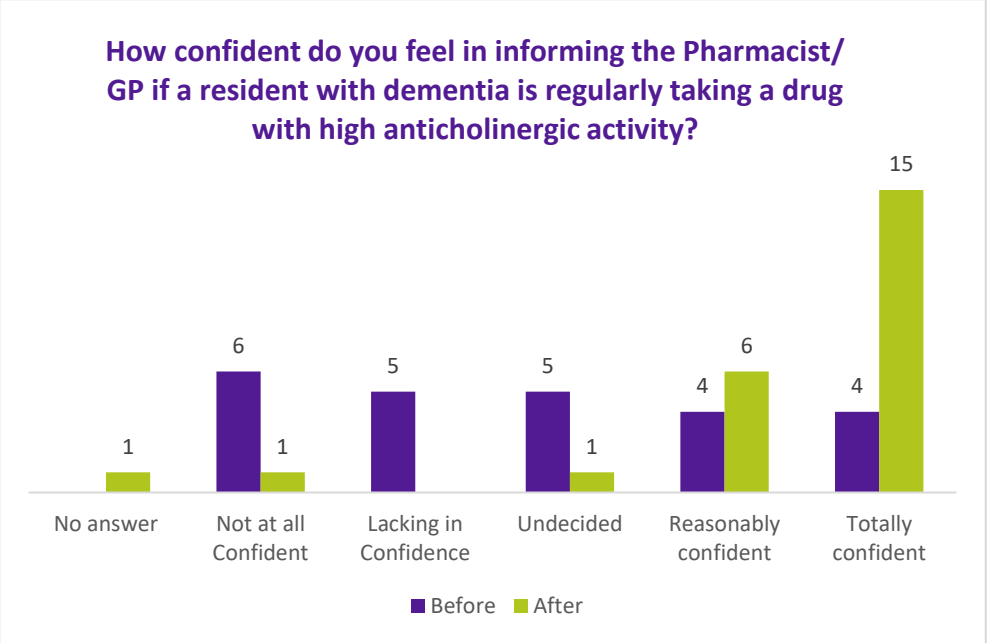
- Nightingale Hammerson, Wandsworth
- Milverton Nursing Home, Kingston
- Link House Care Home, Merton

Across the three care homes, a total of 24 care home staff members completed the questionnaires to determine confidence levels before and after the presentation on polypharmacy and anticholinergics. Confidence levels improved in all domains. The results for care home staff is illustrated in the graphs below:







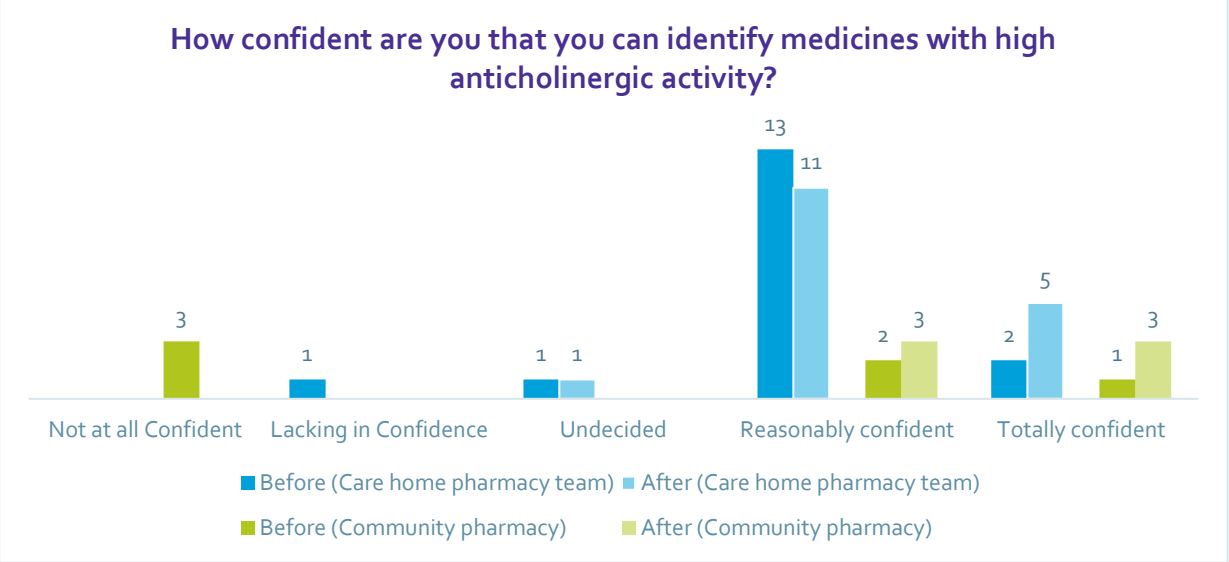


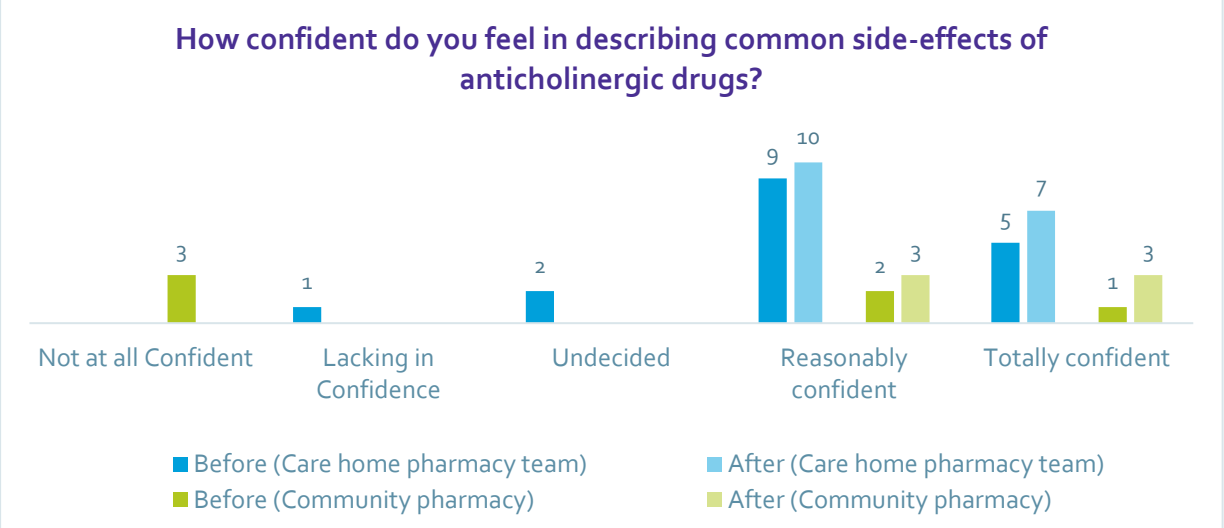
The medication lists for approximately 100 residents with dementia were reviewed. Twenty-three medications with high anticholinergic activity were highlighted for review in a total of 20 residents with a diagnosis of dementia. The medications stopped, switched and unchanged are shown below. The unchanged medication were reviewed and deemed clinically necessary to continue. The percentages have been calculated from the total number of medicines that were reviewed by the GPs. The outcome for only two medicines highlighted for review was lost to follow-up.

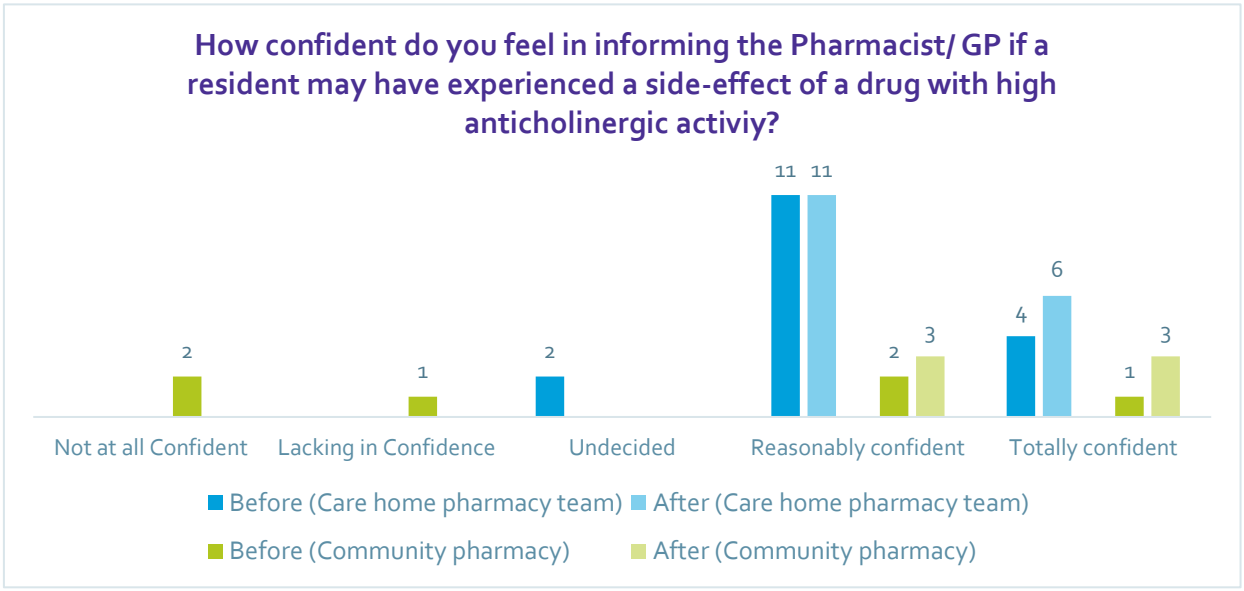
Table 1: Amount of anticholinergic medicines that were stopped, switched, reduced and unchanged

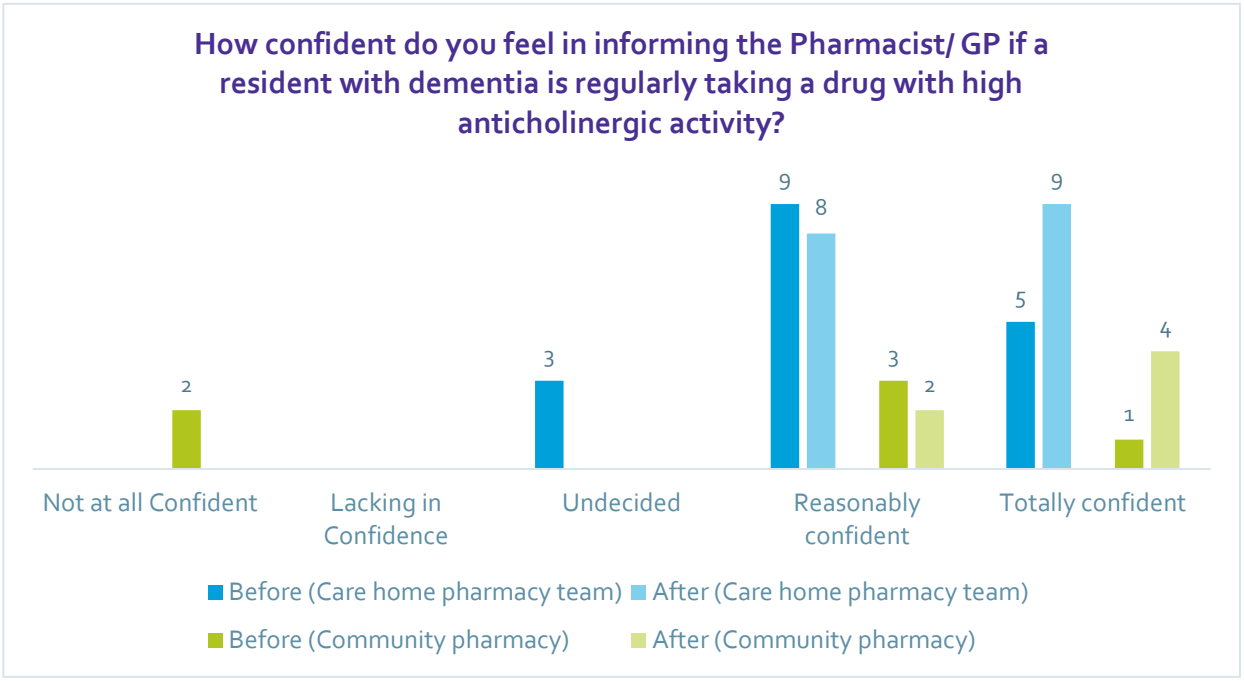
Care Home	Number of medications referred to GP	Number of medicines stopped	Number of medicines switched	Number of medicines reduced dose	No change	Total
Nightingale	14	6	0	0	6	12
Link House	5	2	1	0	2	5
Milverton	4	3	1	0	0	4
Total	23	11	2	0	8	21
Percentage	100	52	10	0	38	

Care home pharmacists, pharmacy technicians and community pharmacy teams were also given the same questionnaire as the care home staff to determine confidence levels of anticholinergics. The results from these questionnaires are illustrated below:






How confident do you feel in informing the Pharmacist/ GP if a resident may have experienced a side-effect of a drug with high anticholinergic activiy?
2
1
2
11
11
2
3
4
6
1
3
Not at all Confident
Lacking in Confidence
Undecided
Reasonably confident
Totally confident
Before (Care home pharmacy team)
After (Care home pharmacy team)
Before (Community pharmacy)
After (Community pharmacy)


How confident do you feel in informing the Pharmacist/ GP if a resident with dementia is regularly taking a drug with high anticholinergic activity?
2
3
9
8
3
2
5
9
1
4
Not at all Confident
Lacking in Confidence
Undecided
Reasonably confident
Totally confident
Before (Care home pharmacy team)
After (Care home pharmacy team)
Before (Community pharmacy)
After (Community pharmacy)

Increasing dietary fibre

A total of six residents were included to receive increased dietary fibre.

Table 2: Number of laxatives administered over 4 weeks to residents before and during increased dietary fibre intake

Number of times laxatives administered		
Before increase in dietary fibre	During increase in dietary fibre	% reduction in use of laxatives
7	0	100
10	2	80
9	13	-31
11	5	55
9	1	89
10	2	80
	Total	62

Dietary fibre included fruits, vegetables, oak cakes, porridge, brown bread and cereals. This resulted in five out of the six residents having 50-100% reduction in laxative use. Only one resident had an increase in laxative use.

Feedback from care home residents/relatives

A total of 17 care home residents and relatives participated in focus groups across three care homes (see appendix 3 for questions asked during the focus groups).

- Consent forms were completed by each attendee for pictures to be taken and information to be temporarily recorded.
- All attendees were reassured that no information would be traceable.
- Some themes that emerged during the focus groups included:
- The difficulty experienced by residents in questioning healthcare professionals: "If you say 'I disagree' without having any medical knowledge, you are putting yourself in an awkward position."
- The need for more information around medicines
- Wider use of non-pharmacological options
- Importance of self-care: "People need to read about their medicines before they see their healthcare professional, we all have to work to look after ourselves."
- Having a leaflet with questions to ask is useful.

Feedback from the care home residents and relatives focus groups led to the creation of the 'Let's Talk about Medicines' poster and leaflet. The HIN sought further advice from the public and patient engagement lead involved with 'Me and My Medicines', the manager for social care and leadership at NICE and a clinical pharmacist from Institute for Safe Medication Practices in Canada involved with existing online material.

Exploring Digital Solutions

The NHS Long Term Plan mentions the widespread use of technology to improve patient care[10]. The criteria for an intervention to reduce polypharmacy mentioned by general practitioners included the use of digital solutions to aid deprescribing. This option was explored in the form of a possible anticholinergic burden calculator as a mobile application and on EMIS, the GP prescribing software.

It was decided through discussion with several general practitioners that the calculation of an anticholinergic burden score alone would not be useful and that the medications responsible for the raised score would also need to be highlighted. It was also noted that Optimise Rx, a clinical decision support, already provided messages for new prescriptions and reauthorisations of anticholinergic medicines but may not have been utilised by GPs.

Work in progress

- MD Calc, a website and mobile application company are working to create an anticholinergic burden calculator which can be used by care home pharmacists.
- HIN will continue to work with Optimise Rx to raise awareness of the existing messages around anticholinergics and tailor the messages to local areas if needed.

Learning and Limitations

This project has demonstrated the effectiveness of raising awareness about the potential risks of polypharmacy and the possible harmful effects of anticholinergic medicines, particularly in people with dementia. The 'Let's Talk about Medicines' material provides information on polypharmacy and can be utilised for multiple care settings where people are prescribed medicines e.g. care homes, general practice surgeries, community pharmacies and even hospitals. Enabling citizens to have information about the potential risks of all medicines is a vital part of working towards optimising medicines.

The focus groups with care home residents and relatives informed the HIN that more information is required around medicines. It was also apparent that although some healthcare professionals need to be more open to being questioned, citizens need to take a more active role in enquiring about their medicines. Most citizens who participated in this project stated that they would appreciate non-pharmacological options prior to using medicines, however unless it is incorporated into 'business as usual', it may be more time consuming.
This project demonstrates that training staff to utilise available and evidence based non-pharmacological options can reduce inappropriate polypharmacy.

Learning points:

- Plan to visit the care home after the initial training has taken place to provide support during the data collection period. (Due to time restraints , the HIN completed the data collection for this project).
- There are several lists of anticholinergic medicines in use in the UK .Choose one list of anticholinergic medicines and ensure this list is used consistently in the care home(s) in your area. The list used in the project was provided by NHS BSA. During the project the HIN discovered that the authors of http://www.medichec.com/ have scored the anticholinergic medicines based on the existing evidence of the medicines that cross the Blood-Brain-Barrier. These medicines have a high affinity to enter the brain so the http://www.medichec.com/ has been used to inform the resources included in this report and the implementation guide.

Limitations of this project include:

- Lack of direct input from residents diagnosed with severe dementia (where possible relatives participated on their behalf).
- Not all clinicians and staff completed the questionnaire to determine confidence of identifying anticholinergic medicines (e.g. GPs, nurse prescribers). It may be interesting to know if further education sessions on anticholinergics for other healthcare professionals would have been useful.
- Two community pharmacy teams were provided with the questionnaire so findings may not be representative of a larger cohort.

- There was a 12 month timescale in which to complete the project. With more time, the above learning as well as the digital solutions could have been implemented.

Conclusion

Polypharmacy is a complex problem which needs to be resolved through a multi-faceted approach. The focus of this project was to raise awareness of the potential risks of polypharmacy, reduce the use of medicines with high anticholinergic activity and use increased dietary fibre to reduce the use of laxatives. The resources created in this project raise awareness of polypharmacy and encourages and supports person-centred medication reviews. These resources can be used in multiple care settings, including care homes, domiciliary and general practice surgeries, to encourage conversations about medicines.

The findings demonstrate that targeting a specific group of medicines and utilising non-pharmacological options are two methods that can be successfully deployed to reduce use of inappropriate polypharmacy in care homes.

Join us in helping to reduce polypharmacy in care homes. Download the free resources and implementation guide here.

References

1. World Health Organisation (2017) Medication Without Harm: The third WHO global patient safety challenge. Available: https://www.who.int/patientsafety/medication-safety/medication-without-harm-brochure/en/ [Accessed 31st July 2019]

2. Office for National Statistics (2013). Population estimates total persons for England and Wales and regions, mid 1971 – mid 2012. Newport: Office for National Statistics. Available at: www.ons.gov.uk [accessed on 31 July 2019].

3. Barnett K, Mercer SW, Norbury M, Watt G, Wyke S and Guthrie B (2012). Research paper. Epidemiology of multi-morbidity and implications for health care, research and medical education: a cross-sectional study The Lancet online. [Accessed 31st July 2019]

4. Prybys, K., Melville, K., Hanna, J., Gee, A., Chyka, P. Polypharmacy in the elderly: Clinical challenges in emergency practice: Part 1: Overview, etiology, and drug interactions. Emergency Med Rep. 2002;23:145–53.

5. The Royal Pharmaceutical Society (2016). Improving Care in Care Homes. Available from https://www.rpharms.com/Portals [Accessed 31st July 2019].

6. National Institute of Health and Care Excellence (2017) Managing medicines for adults receiving social care in the community (NG 67) Available from https://www.nice.org.uk/guidance/ng67 [Accessed 6th August 2019]

7. Me and My Medicines (2019). Available from https://meandmymedicines.org.uk/the-charter/ [Accessed 21st August 2019]

8. NHS Business Services Authority and AHSN Network (2017) Medicines Optimisation Polypharmacy Prescribing Comparators

9. British Dietetic Association (2016) Food Fact Sheet, Fibre. Available from https://www.bda.uk.com/foodfacts/fibrefoodfactsheet.pdf. [Accessed on 21st August 2019]

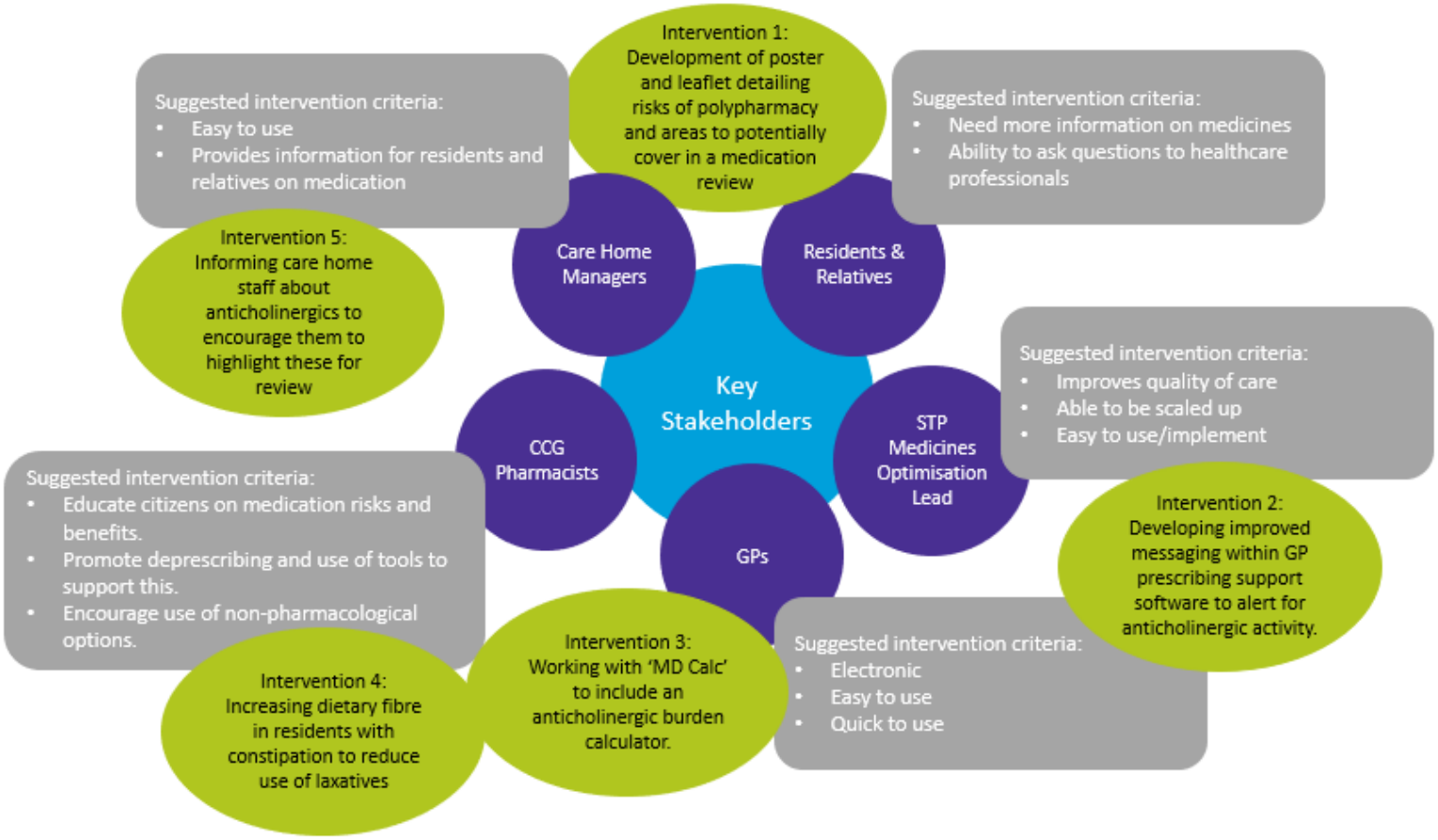
10. NHS England (2019). The NHS Long Term Plan. Available from https://www.longtermplan.nhs.uk/wp-content/uploads/2019/08/nhs-long-term-plan-version-1.2.pdf. [Accessed on 21st August 2019]

Acknowledgements

Nightingale Hammerson Care Home, Wandsworth
Morden College Care Home, Greenwich
Link House Care Home, Merton
Milverton Nursing Home, Kingston
South London Clinical Commissioning Group/Local Authority Care Home leads
Care home pharmacists and pharmacy technicians in south London
Lewisham Integrated Medicines Optimisation Service (LIMOS)
In-reach Support to Care Homes (IMPACT) team, Your Healthcare CIC, Kingston
Kim Jany, Polly Shepperdson and Dr Simon Hendricks, Optimise Rx
Allyssa Deorocki and Rachel Kwon, MD Calc, New York, USA
Bhavini Shah and Jodie White, NHS East and North Hertfordshire CCG
Geoff Ward and Vicky Richmond, Bethlem Royal Hospital, South London and Maudsley NHS Trust
Dr David Attwood, GP, Pathfields Medical Group
Dr Emma Baker, Clinical Pharmacologist, St George's University Hospital
Wasim Baqir, National Care Homes Pharmacy Lead, NHS England/NHS Improvement
Rena Barai, Independent Community Pharmacy Contractor, SG Barai Chemist
Delia Bishara, Consultant pharmacist in psychiatry, South London and Maudsley NHS Trust
Dr Katie Clamp, GP, Stonecot practice
Dr Stephen DeWilde, GP, Lambton Road Medical Partnership
Tamsin Fulton, Programme Manager, Integrating Pharmacy and Medicines Optimisation (IPMO)
Richard Goodman, Regional Pharmacist for London, NHS England/NHS Improvement
Simon Hill, Regional Medicines Manager, Care Quality Commission
Dr Louise Hogh, Consultant Geriatrician, Kingston Hospital NHS Foundation Trust
Dr Peter Hughes, GP, Nelson Medical Practice
Holly Irwin, Social Care & Leadership Manager, National Institute of Health and Care Excellence
Dr Sumathi Jeevaratnam, GP, Berrylands Surgery
Diane Laverty, Macmillan Nurse Consultant Palliative & End of Life Care, London Ambulance
John Minshull, Deputy Director, London Medicines Information, Specialist Pharmacy Service
Lelly Oboh, Consultant pharmacist in older people, Guy's and St Thomas' NHS Trust
Dr Sheetal Patel, GP, Hampton Wick GP practice
Graham Prestwich, Public and Patient Engagement Lead, Yorkshire and Humber AHSN
Jane Sproat, Enhanced Health in Care Homes Improvement Manager, Healthy London Partnership
Graham Stretch, Lead Pharmacist, Ealing GP Federation
Sarah Taylor, Chief pharmacist, Sutton CCG
Dr Chris Threapleton, Clinical Fellow in Pharmacology, St George's University Hospital
Alice Watt, Institute for Safe Medication Practices, Canada
Elly Wakeling, Clinical Leadership Fellow, NHS Wakefield CCG
Dr Faye Woolerton, GP, Chartfield Surgery

Appendix 1

Key stakeholders, suggested intervention criteria and final interventions



Appendix 2

Deriving the project focus

1.

HIN already have good working relationships with care homes in south London so attending care home forums was relatively easy.

2.

In order to go where the energy is, CH leads were emailed to find out if any care homes were interested in participating in the project.

3.

NHS is moving towards shared decision making and informing patients more about their care, thus it was extremely important to involve residents and relatives early on.

4.

Residents/ relatives that expressed an interest in the project after the presentation were invited to attend a focus group to discuss potential options for reducing polypharmacy in care homes.

5.

HIN arranged to see GPs and some pharmacists separately to discuss the project and gain thoughts/ ideas.
GPs were asked about the criteria they would like the intervention to satisfy.

6.

Researched more into anticholinergic lists and spoke to experts in the field.

Appendix 3

Focus Group Questions for Residents/Relatives

- Introductions
- Explanation of reasons for doing focus group
- Consent form

1. Currently, what matters most to you?
2. Do you have any concerns about the medicines you take/administer?
3. Do you know everything that you would like to know about the medicines you take/administer?
4. If not, why not? Have you asked/had the opportunity to ask?
5. Who would you usually ask about medicines?
6. Do you think people should ask more questions about their medicines?
7. Would you find it useful to have a list of questions to ask your healthcare professional? (Examples were provided)
8. How do you think we can improve the information you receive about medicines?
9. Would you like to try a non-drug alternative before starting a new medicine e.g. sleep hygiene?
10. Which alternatives would you be happy to try? More hydration, sleep hygiene, more exercise?
11. What would you like to see happen in the future with medicines? (i.e. more information about them, reduce the number, have more alternatives?)

Appendix 4

Confidence level questionnaire

Reducing use of inappropriate polypharmacy in care homes: Anticholinergic medicines in people with dementia

PLEASE COMPLETE THIS FORM BEFORE THE PRESENTATION STARTS

Job Title:	**Organisation**

	Totally confident	Reasonably confident	Undecided	Lacking in Confidence	Not at all confident
How confident are you that you can identify medicines with high anticholinergic activity?					
How confident do you feel in describing common side-effects of anticholinergic drugs?					
How confident do you feel in informing the Pharmacist/GP if a resident may have experienced a side-effect of a drug with high anticholinergic activity?					
How confident do you feel in informing the Pharmacist/GP if a resident with dementia is regularly taking a drug with high anticholinergic activity?					

1. **Please name any drugs with anticholinergic activity that you know (maximum 3).**

   _____

2. **Please name any side-effects of drugs with anticholinergic activity (maximum 3).**

   _____

3. **In the last 2 weeks how many times, approximately, have you highlighted use of an anticholinergic drug in a resident with dementia?**

   _____

4. **How many of these notifications resulted in a reduced dose/amendment in medication?**

   _____

Reducing use of inappropriate polypharmacy in care homes: Anticholinergic medicines in people with dementia

PLEASE COMPLETE THIS FORM AT THE END OF THE PRESENTATION

Job Title:	**Organisation**

	Totally confident	Reasonably confident	Undecided	Lacking in Confidence	Not at all confident
How confident are you that you can identify medicines with high anticholinergic activity?					
How confident do you feel in describing common side-effects of anticholinergic drugs?					
How confident do you feel in informing the Pharmacist/GP if a resident may have experienced a side-effect of a drug with high anticholinergic activity?					
How confident do you feel in informing the Pharmacist/GP if a resident with dementia is regularly taking a drug with high anticholinergic activity?					

Did you find today's presentation useful?	**Yes**	**No**

How do you intend using the information from today's presentation within your service/place of work? **Please indicate the 2 main actions you will take**

1:

2:

NEXT STEPS: Data will be collected over the next 2 weeks to assess if highlighting these medicines to the GP/pharmacist reduces the number of anticholinergic drugs administered to residents with dementia.

Thank you for completing this evaluation.