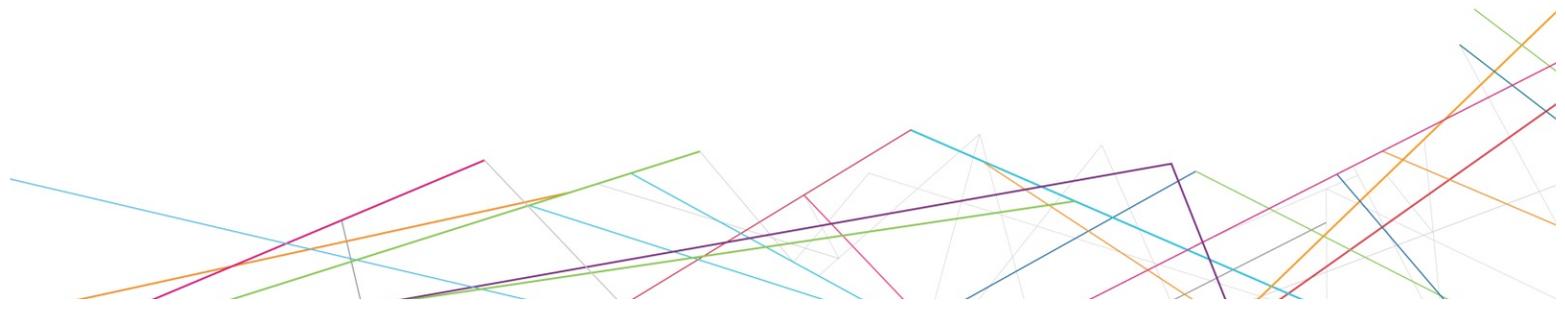


Improving resident safety in care homes

Learning from the PROSPER programme in Essex

November 2016



Foreword



More than 18,000 care homes in England provide support for over 386,000 people. Many of these people have complex healthcare needs, with multiple long-term conditions, disability and frailty. Care home teams work hard to support residents but generally there is a high turnover of staff and limited investment in developing skills. Systematic approaches to improving quality, which are becoming more commonplace in the NHS and other sectors, are virtually unknown in care homes. The PROSPER programme was a ground breaking initiative to test whether quality improvement methods could be implemented in the care home context.

PROSPER was a collaboration between care homes, Essex County Council, the health sector, UCLPartners and Anglia Ruskin Health Partnership. Funded by The Health Foundation, the programme focused on using quality improvement methods to reduce preventable harm from three of the most common safety issues in care homes: falls, urinary tract infections and pressure ulcers.

A team of quality improvement facilitators based at Essex County Council provided care homes with training about quality improvement methods, tools to track changes over time, and signposting to resources and other training. Supporting the programme was an embedded and formative evaluation examining the extent to which the interventions worked and their mechanisms of action. This form of participatory evaluation is both novel and challenging to deliver. As is the norm in the quality improvement field, the intervention flexed and adapted during implementation and our evaluation had to acknowledge and reflect this process.

We are pleased to report that the PROSPER initiative helped to increase knowledge and awareness of resident safety amongst care home staff, encouraged homes to test new approaches, and in some homes, resulted in tangible reductions in harms. Although improvements were not universal across all participating homes, at least half of the homes reported they benefited from taking part.

We found that the context in which care homes operate is fundamentally important to how improvement initiatives are implemented and evaluated. The interaction between the intervention, the method of implementation and the context is complex and poorly understood. Relationships between local authorities and care homes are complex; with political, commercial and safeguarding sensitivities that reach well beyond PROSPER and influence both the implementation and evaluation. Care home staff have many competing priorities so improvement initiatives may not always be given time and focus.

PROSPER's successes are a reflection of the enormous goodwill of all involved – care homes, Council staff, healthcare partners and the evaluation team made up of UCLPartners, Anglia Ruskin Health Partnership, UCL and The Evidence Centre. Without everyone's passion and commitment to

improving care for people living in care homes, this programme would not have been possible. PROSPER has shown what can be achieved. The challenge now, for all of us, is to spread these lessons and successes so that a wider range of homes and their residents can benefit.

Martin Marshall

Professor of Healthcare Improvement, UCL

Principal Investigator for PROSPER

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The evaluation team comprised:

- Martin Marshall, *UCL and UCLPartners (principal investigator)*
- Debi de Silva, *The Evidence Centre (qualitative evaluation lead)*
- Li Wei, *UCL (quantitative evaluation lead)*
- James Anderson, *Anglia Ruskin Health Partners*
- Jenny Shand, *UCLPartners*
- Lesley Cruickshank, *Essex County Council*
- Kieran Attreed-James, *Essex County Council*

Executive summary

Implementing improvement methods in care homes

Quality improvement approaches such as *Plan-Do-Study-Act (PDSA)* cycles, run charts and culture assessment tools are becoming increasingly popular in the NHS, but are less often used in the care home sector. From July 2014, Essex County Council and local care homes began testing whether using quality improvement techniques could improve resident safety. A total of 118 homes in four separate cohorts signed-up to take part in the PROSPER programme (Promoting Safer Provision of care for Elderly Residents) and 90 homes remained part of the programme as of May 2016 (76%).

The programme, which was funded by The Health Foundation, provided care homes with training in quality improvement methods, a resource toolkit, tools to help monitor change in resident outcomes, opportunities to share learning with other homes, and support visits from Council improvement facilitators. Homes received six-months of targeted support then remained part of a community of practice, receiving newsletters, invitations to meetings and ad-hoc support. The ‘interventions’ evolved over time as the facilitators came to understand more about quality improvement methods, and as the approaches and communication strategies were adapted for the care home context. By the end of the study the package of interventions was substantially different to that originally envisaged.

Evaluation approach

A participatory evaluation was undertaken using a multi-method pragmatic before-and-after design to document the impacts of the programme and lessons learnt. Data were collected using 203 telephone interviews, 12 in-person discussion groups with staff from 90 homes, an online survey with 51 homes, 49 discussions with the implementation team and other stakeholders, observation of 12 programme events and activities, monthly incident figures from 65 care homes and analysis of 523 programme documents.

In line with the participatory and formative nature of the evaluation, findings were continuously fed back to the participants through monthly meetings between the implementation and evaluation teams and through building a close relationship between the field-based evaluators and care home staff.

Impacts

PROSPER aimed to help care homes improve the safety culture, undertake activities to improve safety, reduce rates of falls, pressure ulcers and urinary tract infections, and reduce costs for care homes and the NHS.

Improvements in care processes

In qualitative interviews and an online survey, **two-thirds of care homes reported changing some of their care processes as a result of PROSPER.**

The three most commonly reported changes were:

- proactively using data to help track changes over time and identify resident safety issues;
- implementing ideas for change, such as increasing the availability of fluids, using coloured coasters or tumblers to identify people who needed more frequent drinks, and personalising and optimising walking frames; and
- making safety issues more visible and a priority by discussing them in team meetings and displaying materials on boards in public areas and staff rooms.

These changes were evidenced during observations by the evaluation team, feedback from care homes in interviews, an online survey and in progress reports and observations by the implementation team.

Homes that said they had not implemented any changes as a result of the programme were either those that had only recently joined PROSPER or ones which did not feel that the information and support available via PROSPER added to the knowledge and skills they already had. Homes that received fewer visits from PROSPER team members and those from the initial cohorts were least likely to report changes to care processes.

Changes in safety culture

Two-thirds of homes reported changes in safety culture. This included:

- managers and staff beginning to redefine safety in terms of prevention and minimising harm rather than the regulatory-driven imperatives of reducing safeguarding incidents and inspections. This appears to be a significant shift for the care home sector;
- greater focus on proactive prevention and monitoring of safety incidents;
- engaging a wider range of care home team members in interventions to improve quality and safety, including more junior members of staff. Health professionals, and to a lesser extent, families were involved in some homes. Residents were included in a small number of initiatives in selected homes, such as a project to personalise walking frames; and
- care staff feeling more empowered to suggest ideas and support change, whereas in the past this may have predominantly been the domain of care home managers.

These changes were evidenced by observations of the homes, feedback from homes in interviews, a statistically significant difference in an online survey completed when homes began PROSPER and again in March 2016, and feedback from the implementation team.

Homes in cohort one took more time to experience culture changes, perhaps because the interventions were being developed with this cohort. With adaption of the interventions and greater experience of the improvement team, benefits were more quickly reported by cohorts two and three.

Resident outcomes

The impact of PROSPER on resident outcomes was evaluated using data from cohorts one to three. 64 care homes from these cohorts provided outcome data. Four homes (6%) focused mainly on reducing pressure ulcers, 17 homes (27%) mainly focused on reducing falls and 13 homes (20%) predominantly focused on reducing urinary tract infections. Four homes (6%) focused on both falls and pressure ulcers. 26 homes (41%) did not specify a main focus. Cohort four's data was not included in the analysis because homes in this cohort began between November 2015 and February 2016 so there were not enough follow-up data available at the time of the analysis.

Two different analyses were carried out, one aggregating data provided by homes which gave any data and one from the more limited set of homes that provided both pre- and post-intervention data for a period of six-to 12-months before and after the start of the intervention.

The results suggest that:

- when using all available data from care homes (n=64) there were statistically significant reductions in the rates of falls and pressure ulcers before and after PROSPER, and statistically significant increases in urinary tract infections, A&E attendances and any hospital admissions;
- using only data for the homes which focused on reducing specific safety events, the results were similar to that of all data analysis; and
- using data only from those care homes providing both pre and post-intervention data, no statistically significant reduction in safety events or hospital utilisation were found.

There were no differences in impacts on resident outcomes based on geographic area, home size, whether homes had one assigned GP, level of engagement with PROSPER and cohort number. The data seem to suggest some kind of 'cohort effect', for example cohort three homes seem to make a disproportionate contribution to reducing falls whilst cohort one homes seem to have a strong influence on the observed changes in pressure ulcers. The reasons for these effects are not clear from either the quantitative or qualitative data.

The analysis was challenging for a number of reasons: (a) it is difficult to attribute change to the PROSPER intervention, not just because of the study design but because the intervention changed during the study, (b) an increase in reporting of incidents as a consequence of participation in the programme might be expected and desirable but this would hide any beneficial impact, (c) homes do not have a long track-record of collecting data, particularly for pressure ulcers and urinary tract infections and for many of the homes their methods of collecting data are often manual, complicated and unreliable, and (d) it is difficult to reduce hospital utilisation as this depends on a wide range of factors. In addition, in interpreting the results, the evaluation team was sensitive to the risk that before and after designs tend to over-estimate intervention effects.

Costs

In the original proposal the evaluation team said that it would carry out a cost analysis to assess whether savings were realised as a result of the PROSPER intervention. We collated data relating to the overall direct and indirect costs of running the PROSPER programme and the standardised unit costs for each safety outcome. We carried out a preliminary cost analysis based on the resident outcome analysis which used all the available data from the homes.

The analysis involved the same risks and limitations as the analysis of resident outcomes, together with additional complications around accurate costing of falls, pressure ulcers, and other harms. Care homes treat these harms in different ways, with different associated costs to the system. For this reason, the analysis should be treated with extreme caution, and further work is recommended to develop a more robust picture.

The key findings were:

- The overall cost of the PROSPER project was £282,000. This includes a significant component of set-up and development costs for the intervention, that would not be required for future similar projects;
- The total cost savings across PROSPER associated with the reduction in falls and pressure ulcers was in the range £86,000 - £143,000; and
- These cost savings were offset by the costs of the increased incidence of Urinary Tract Infections, A&E attendances, and admissions, which were in the range of £121,000 - £465,000. By far the biggest component of these costs were the increased admissions (£100,000 - £442,000) and this may be explained by a general rise in admissions from care homes over the time period of the PROSPER project.

Sustainability

Care homes that participated in the first two-years reported that they would continue to use some of the tools and techniques they learnt. In particular, this included the *Safety Cross* and graphing their incident rates plus changes to care processes, such as undertaking special activities for nutrition and hydration week, giving residents jelly to boost their fluid intake, using motion-sensor pads in rooms and using mirrors to check skin. Some cohort one and cohort two care homes have continued making these changes in the absence of intensive support from the PROSPER team.

As a result of the successes of PROSPER and promotion and campaigning by the implementation team, Essex County Council has agreed to fund an extension of the project for an additional year. This will extend the intervention to a larger number of care homes across the county, sustain the community of interest, the champions' study days, and provide a longer time frame for tracking the impact.

In addition, people planning similar initiatives in other parts of the UK have been in touch with the PROSPER team and learning is being shared widely. The process of learning is being formalised using the National Institute for Health Research ENRICH (Enabling Research in Care Homes) network and through national programmes such as Care Quality Commission (CQC) reviews in England.

Implementation challenges

Whilst two-thirds of care homes felt they had gained something from taking part in PROSPER and about half of homes thought that some of the changes made would not have happened without PROSPER, other homes reported that they had not changed a great deal and that they felt like they were being asked to give more than they received. This included providing data for evaluation purposes as well as sharing ideas for improvement to be passed on to other homes. About one third of homes that took part in interviews and focus groups expressed this concern, mainly from cohort one and two. Almost all homes suggested that there were areas for improvement, in particular regarding the level and consistency of support provided. These comments were less evident amongst cohort four that had access to dedicated members of the implementation team employed solely to work on PROSPER.

There was a perception that some care homes received more sustained support than others. This could be due to the varying styles of the improvement facilitators assigned to different care homes and capacity issues for the Council's quality improvement team. Homes that reported more on-going contact with PROSPER were most likely to be sustaining any changes they made. The use of specific quality improvement methodologies, such as *PDSA* cycles, were not seen as something that had been prioritised by PROSPER or valued by the care homes, apart from the use of data monitoring tools.

There were tensions between the evaluation team's desire to present unbiased assessments of progress and the implementation team's desire to celebrate achievements, maintain momentum and keep the homes engaged.

Key success factors

Bearing in mind the qualified successes of PROSPER and learning from the implementation challenges, the top ten tips that other areas may wish to bear in mind when implementing a programme of this nature include:

1. In the care home context, providing **substantive new ideas** and resources was as important as training and support in quality improvement methods;
2. Simple introductory training about quality improvement was useful when it included examples and language **relevant to care homes** and focused on practical application rather than theory;
3. **Simple tools** helped homes to use data effectively. This included the *Safety Cross* and graphs showing monthly incident rates;
4. Providing opportunities for homes to **share ideas** and learn from each other worked well, including having regular get-togethers for managers and carers with a 'taught' component but also ample opportunity to share learning;
5. Homes reported that being able to **compare** themselves with other homes was motivating, such as through anonymised 'average' incident rates and monthly newsletters. However, any perceived judgements about differences in performance were not welcomed;

6. Having ways to **engage a wider range of care home staff**, rather than solely managers, was crucial to success. PROSPER 'champions' included carers and domestic staff. A 'train the trainer' approach was used so that these champions took responsibility for rolling out learning to others;
7. It is important to allocate enough **capacity and capability** in the implementation team to provide regular proactive support to homes. Developing educational programmes and tools and giving support to 90 homes required considerable resource. The facilitators were not experts in quality improvement methods and this impacted on the speed implementation occurred and the extent of expertise available to homes, particularly in earlier cohorts;
8. There is benefit from having a **wider support team** to input ideas, including care home staff, members from elsewhere in the Council, healthcare professionals and improvement experts from the evaluation team. Joint working with NHS colleagues has been important in offering a wide range of substantive training. Joint ownership by the local authority and NHS could be worthwhile in the future;
9. Online forums and websites may not work well to engage care homes. **Face-to-face contact** or regular telephone follow-ups are preferred by care homes more than written or online materials; and
10. It is important to be **realistic about the time it takes to embed change** and the capacity and motivation of homes to use specific tools. This includes acknowledging the burdens that data collection can impose. It also includes understanding how change is reported to stakeholders, and ensuring that any claims made are substantiated and sustainable.

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1. The PROSPER programme

Residential and nursing homes provide a home and care for some of the most vulnerable people in our communities. Overall, care home staff work hard to provide a clean, safe and caring environment for residents, but there is growing awareness of the gap between what people aspire to achieve and what actually happens in practice. This report describes the impacts and lessons learnt during the PROSPER programme in Essex – a partnership between care homes, Essex County Council, the health sector and UCLPartners, working together to improve safety for residents. The programme was funded by The Health Foundation.

This section of the report outlines why such a programme is important, what it comprised of and how it was tested. Section two explores the impacts of the programme and Section three focuses on some of the factors that have helped and hindered success. Finally, Section four highlights the implications for others wanting to implement a similar model of improvement and for the PROSPER programme itself, which will continue when The Health Foundation funding comes to an end. The report is based on information derived from a participatory evaluation which started in July 2014 and ended in March 2016.

1.1 Context

One hundred-years ago, people in England were expected to live to about 45 to 50-years of age. Now, life expectancy is about 80-years¹ and the number of people aged 60 or over is anticipated to rise by over 50% in the next 25-years.² Older people often have long-term and age-related conditions which affect how their bodies and minds function. This means health and social services need to be ready to cope with an increase in demand for high-quality safe care that helps people maintain their dignity and quality of life.

Around 4% of people aged 75 to 84-years live in residential or nursing care homes. This rises to one in five people aged 85-years and older, and half of 90-year olds.³ People may live in care homes because they need help with physical or mental health problems. Care home residents are more likely than others to have impairment, frailty and an increased need for specialist equipment and support.⁴

There are around 500,000 places in care homes in the UK, 90% of which are managed by the independent sector.⁵ In England, about 40% of care have fewer than 10 beds, with only 1% of care homes offering 75 or more beds.⁶

Care homes are sometimes the subject of negative publicity. They are characterised by frequent policy and regulatory changes, high staff turnover, limited opportunities for staff education and use

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3 My Home Life / National Care Homes Research and Development Forum. *Quality of Life in Care Homes: A review of the literature*. London: Help the Aged, 2007.

4 Office of Fair Trading. *Survey of Older People in Care Homes*. London: Office of Fair Trading, 2005.

5 *Care of Elderly People UK Market Survey 2010*. London: Laing and Buisson, 2010.

6 Skills for Care. *The State of the Adult Social Care Workforce in England 2010*, London: Skills for Care, 2010.

of information for improvement. These factors may influence the quality of life of residents, including the extent to which they experience care that is safe and ensures dignity.

Research from the UK and around the world highlights that people living in care homes may experience preventable safety concerns, including medication errors, falls, pressure ulcers and urinary tract infections.^{7,8} In recent years, a number of programmes have attempted to improve resident safety, for example through staff education, computerised records, decision support systems and partnerships with primary care.^{9,9a,10,10a,11,12,13,14} They have had varying levels of success and have often encountered challenges in implementation.

Rather than replicating problem-focused improvement approaches, Essex County Council wanted to test a more innovative approach; up skilling care home teams in quality improvement methodologies so teams could apply these approaches to a wide range of different safety challenges and thereby improve the overall quality and safety of resident care.

PROSPER is not the first systematic attempt to improve quality in care homes in Essex. In recent years, care homes have worked with the local authority and NHS to develop new skills and improve the quality of care in a number of improvement programmes. In particular, *My Home Life* is a national organisational development and leadership initiative. Essex was one of the first areas that implemented the approach in 2009. Following on from initiatives such as this, care homes and Essex County Council identified a need to focus more explicitly on improving the safety of residents. This led to the development of the PROSPER programme.

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1.2 Evaluation approach

PROSPER was evaluated over a 21-month period, from when implementation began in July 2014 through to March 2016. The evaluation was undertaken by a team comprising UCL, UCLPartners, Anglia Ruskin Health Partnership, Essex County Council and The Evidence Centre. The aim of the evaluation was to examine the impact of the PROSPER programme and the factors which influenced whether or not the programme was successful. The evaluation questions were:

1. What was the PROSPER intervention?

- What was involved in the intervention and how was it implemented?

2. What impact did PROSPER have?

- Did PROSPER impact on safety culture within care homes?
- Did PROSPER impact on safety processes within care homes?
- Did PROSPER impact on resident outcomes?
- Did PROSPER impact on costs for care homes, social care and the NHS?

3. What influenced the impact of PROSPER?

- What helped or hindered the intervention?
- What would help embed and sustain any benefits derived from the programme?

The evaluation also considered whether learning from improvement initiatives in the care home sector had implications for safety improvement in the NHS.

To address the evaluation aims, a multi-method 'before-and-after' design was used, with qualitative and quantitative components and a strong orientation to participatory methods.

Quantitative methods explored the impact of the intervention on outcomes for residents in care homes that provided monthly data. The evaluation team analysed data provided by care homes for the pre- and post-intervention periods relating to the rates of falls, pressure ulcers, urinary tract infections, emergency department admissions, any hospital admissions and hospital admissions due to a falls.

Qualitative methods were used to describe the intervention(s), understand staff experiences of the intervention(s) and to examine impacts on organisational processes and safety culture. Methods included observing programme activities, interviewing care home managers and staff, and visiting care homes to observe and listen to teams. An online survey was also undertaken at the start of the programme and again at the end in March 2016. In summary the qualitative data collection methods comprised of:

- review of 523 documents
- 127 hours worth of home visits and observations
- 203 individual telephone interviews
- 12 discussion groups with care home teams
- an online survey with 51 care homes when they began PROSPER and again at the end of the data collection period in March 2016 (between eight- and 20-months later, depending on the cohort)

- 26 meetings, discussion groups and interviews with PROSPER team members
- 23 interviews with other stakeholders, including GPs, NHS teams and Essex County Council
- 10 interviews with care homes not taking part in PROSPER

The evaluation methods are described in detail in Appendix 1. Ethics approval was granted by Essex County Council and research governance approval was granted by UCL (see Appendix 2).

1.3 PROSPER components

This section describes the initial aim of PROSPER, how it was implemented and how the approach changed over time. Data for this section was sourced from:

- review of 523 documents
- 127 hours worth of home visits and observations
- 203 individual telephone interviews
- 12 discussion groups with care home teams
- 26 meetings, discussion groups and interviews with PROSPER team members

Aims

PROSPER aimed to improve safety for care home residents in Essex by supporting staff to use quality improvement approaches. Box 1 describes the aims as outlined in the original proposal to The Health Foundation.

Box 1: Aim of PROSPER as outlined in original proposal for funding

Aim: To improve safety and reduce harm for care home residents across North East and West Essex by implementing a multi-faceted improvement intervention with educational, measurement and culture change components. Under the overall aim, specific objectives are to:

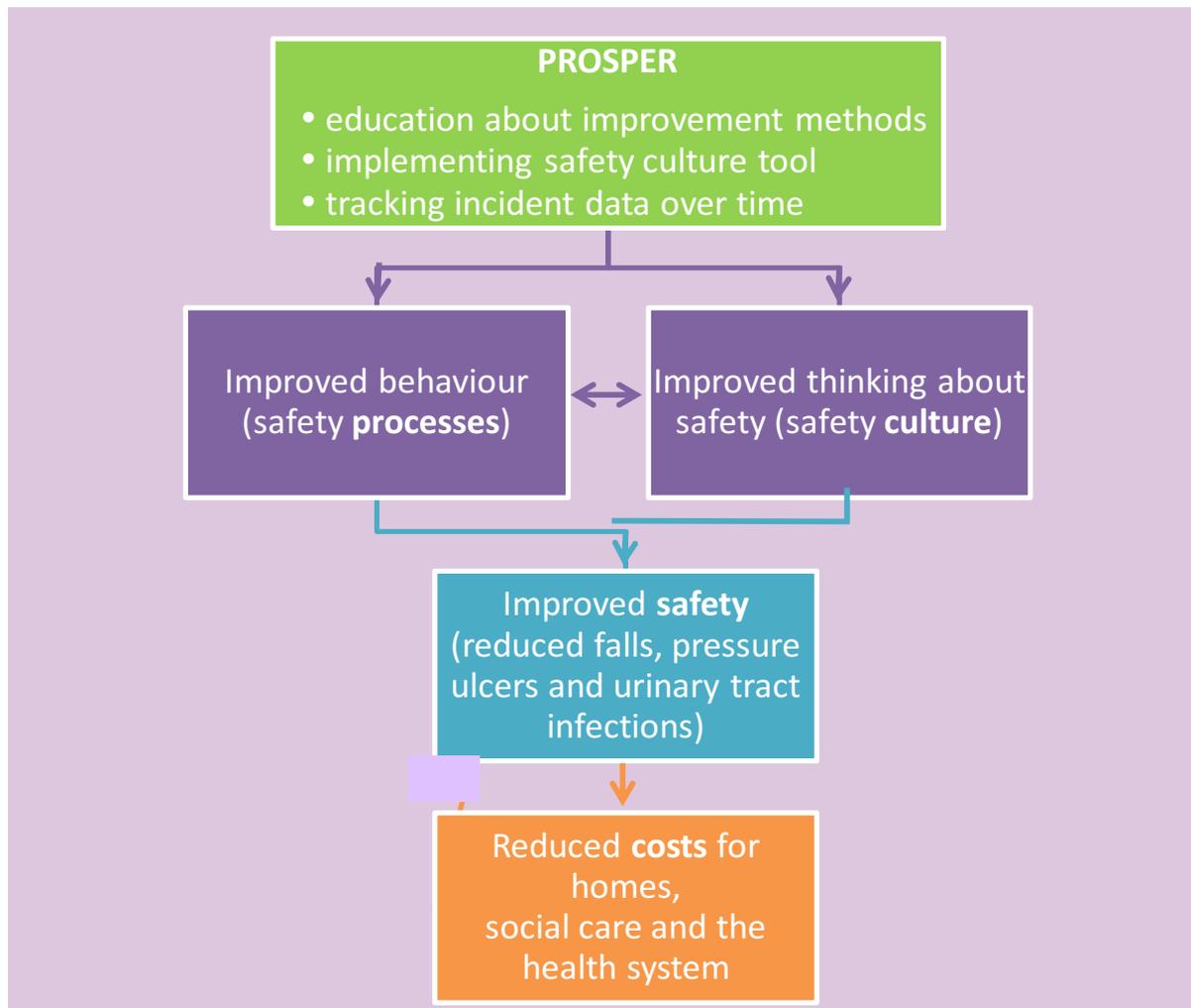
- Co-design solutions with residents and their relatives and introduce new QI training opportunities to build staff capabilities to address safety concerns;
- Reduce the percentage of residents that present at A&E;
- Increase the proportion of residents who are 'harm-free' (as defined by the *NHS Safety Thermometer*);
- Reduce the prevalence of falls, pressure ulcers and catheter infections across care homes;
- Increase staff understanding of, capacity and capability to create a safe environment for residents;
- Understand the consequence on health and social care costs as a result of the above; and
- Establish an evidence base for the intervention

Source: Essex County Council funding application to the Health Foundation

Theory of change

PROSPER was based on the theory of change that supporting care homes to use quality improvement methods and to understand their safety culture would lead to changes in how care home staff think and act, and to the environment in which they work. It was hoped that this would impact the quality of care provided; improving resident safety and reducing costs for care homes and the NHS. Figure 1 illustrates this theory of change.

Figure 1: PROSPER theory of change



Components

The three main components of the planned PROSPER programme were:

1. **Education** about quality improvement methods, such as *PDSA* cycles and run charts. This was to be delivered using an initial training session in improvement methods, monthly follow-up visits by improvement facilitators for six-months, developing and distributing a toolkit of resources, and setting-up community of interest practice events where care homes shared their learning every three- to six-months;
2. Using the **Manchester Patient Safety Framework (MaPSaF)** tool to help care homes understand their safety culture to identify areas for development; and
3. Using the **NHS Safety Thermometer** to help care homes collect and analyse data about safety incidents so they could identify areas for improvement and track changes over time.

Quality improvement approaches such as *PDSA* cycles, run charts, data feedback and culture assessment tools have been used in the NHS and other sectors for many years, but are not commonly used in care homes. Examples of these tools can be found in Appendix 3.

Care homes were invited to focus on one or more of three most common harms experienced by residents: falls, pressure ulcers or urinary tract infections. Areas were selected according to the priorities of the care homes but these changed over the duration of the initiative.

Changes to the intervention and its implementation

The original components of PROSPER were implemented to varying extents. As the study progressed and learning emerged, Essex County Council improvement team introduced a number of new interventions that had not been envisaged at the start, and in some cases, reduced the focus on the original interventions. In particular, at the care homes' requests they introduced training about substantive content areas, such as medicines management (particularly when linked to risk of falls) and diabetes, extended training support for longer than the original six-months and new tools, e.g. the *Safety Cross*. At the same time they put less emphasis on the *NHS Safety Thermometer* and *MaPSaF* because neither were perceived as useful or easy to use.

The PROSPER implementation team decided early on to move away from solely testing the implementation of quality improvement methods and examining safety culture towards a broader and more flexible model of support. This flexibility is compatible with the literature on improvement initiatives.^{15,16,17,18,19,20}

The changes were in part a result of responsiveness to the needs and requests of the care homes but also reflected pragmatic constraints. Some tools appeared not to have been implemented because the implementation team had insufficient resources, inadequate training, felt uncomfortable facilitating them, e.g. *MaPSaF*, or because the care homes did not see them as a priority.

As outlined in Appendix 4 not every home had the same opportunity to test all interventions. Sometimes there were tensions between what the care homes wanted and what the improvement team had the capacity or capabilities to deliver.

Table 1.1 compares the original and final components of PROSPER.

Table 1.2 lists the number of additional training sessions offered. These topics were selected partly because they were a focus of PROSPER, but in other instances they were selected due to the availability of health partners to facilitate training (as part of their existing work priorities).

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Further detail about the stakeholders perception of each intervention and details of why specific interventions were modified or stopped can be found in Appendix 9.

Table 1.1: Extent to which originally planned interventions were implemented

Key: Green - completed as planned; Amber - partly completed as planned; Red = not completed done as planned

Component	Original / added	Implementation	Uptake
<i>NHS Safety Thermometer</i>	Original	Implemented with cohort one and offered to all of cohort two. <i>Safety Cross</i> was implemented from cohort two on wards. In addition, a Monthly Mapping tool was added from cohort three.	Two thirds of cohort one tried the Thermometer. About one third input data. 80% of homes reported using the <i>Safety Cross</i> . 60% supplied data for the Monthly Mapping tool. This increased when homes were encouraged by the evaluation and implementation teams.
Staff, residents and relatives actively sharing performance on the <i>NHS Safety Thermometer</i> and co-creating solutions for on-going improvement	Original	PROSPER did not focus heavily on ways to involve residents and relatives in co-creating solutions. Homes shared data with staff and had PROSPER notice boards where residents, families and staff could see information.	Fewer than 10% of cohort one shared <i>NHS Safety Thermometer</i> data. 80% of homes used the <i>Safety Cross</i> and displayed this for staff, residents and families to see. 60% displayed graphs from the Monthly Mapping tool.
Care home staff trained in improvement methodologies	Original	Quality improvement training was provided and revised to be more relevant to care homes.	90 homes took part in training. In cohort one this was largely home managers. From cohort two onwards some senior carers also attended.
Participants able to deliver the training to peers (train-the-trainer)	Original	Formal train-the-trainer model was not tested but PROSPER champions were implemented to roll out learning to others.	Champions have been found to work well to spread learning informally.
Intervention toolkit containing a compendium of evidenced-based interventions for each of the domains of the <i>NHS Safety Thermometer</i>	Original	Toolkit with worksheets and information sheets developed. Information focuses on falls, pressure ulcers and urinary tract infections.	All homes received a copy and this was available online.
Safety culture assessed using the <i>MaPSaF</i> tool at three time points (before, during and after PROSPER), using the tool to understand and address barriers to change	Original	<i>MaPSaF</i> revised and tested in different ways with various cohorts. PROSPER has not focused on using this as a key tool to shape the work.	Two homes from cohort one had facilitated discussions. 10 homes completed a survey-type form. No homes from cohort two or three used the tool. A revised version was tested with a small sample of homes from cohort four
Communities of practice	Original	A project-wide community of practice event was run in November 2014 and again in May 2015.	All homes were invited. About two thirds attended the larger events. About half of homes

Component	Original / added	Implementation	Uptake
		These covered all homes. In October 2015, smaller community of practice events were held on a more local basis	attended the local events.
Improvement tools and case studies uploaded to resource tool for peer learning	Original	Knowledge hub set up. Documents were loaded every so often, mainly copies of things sent by email.	10% (9) of care homes signed up. None posted.
On-going schedule of interaction through meetings and telephone conferences	Original	Facilitators visited homes with varied regularity. During the intensive phase, some homes were visited monthly and others every three to four months. Group telephone conferences were not used. Ad hoc telephone calls were made to individual homes if needed.	Ad hoc. Some homes received regular support and others did not. Some homes reported that they had no contact with their allocated improvement adviser for six months.
<i>Safety Cross</i> for displaying information about monthly incidents	Addition	Used from cohort two homes onwards then also rolled out to cohort one.	All homes received a copy as part of the toolkit. About 80% reported using it.
Provision of graphs with monthly data to track changes over time and compare averages	Addition	All homes were invited to provide data about the monthly incidence of harms. From cohort three onwards, homes were given access to an online tool.	About 60% of homes provided some data. One quarter used the tool regularly without prompting.
Provision of resources such as posters, certificates, mirrors to view pressure ulcers, and other tangible resources	Addition	Resources developed ad hoc.	Homes offered tools during community of practice and visits. Variable uptake depending on <i>PDSA</i> cycles / focus. Resources were appreciated.
Provision of additional training, such as training about infection control and pressure ulcers	Addition	26 training sessions run.	Around half of homes have taken part in this extra training.
Co-ordination with partner organisations such as CCGs and NHS provider organisations	Addition	Varies depending on CCG area.	Varies depending on CCG area.
Monthly newsletter	Addition	Sent to participating homes monthly from January 2015.	60% of home managers reported reading it.

Table 1.2: Additional training facilitated under the auspices of PROSPER

Topic	Number of training sessions organised	Was training run by PROSPER team or NHS partners?
Diabetes	1 session for 20 homes	Delivered by health partner
Falls	8 sessions for 6 homes	Delivered once per week for eight weeks by health partner
Infection control	1 session for 13 homes	Delivered by health partner
Pressure ulcers	1 session for 4 homes	Delivered by health partner
UTIs and hydration	1 session for 11 homes	Delivered by health partner
Champion' study days	1 day for 13 homes	Delivered by PROSPER with health partners
	1 day for 10 homes	
	1 day for 13 homes	
	1 day for 13 homes	
	1 day for 14 homes	
	1 day for 13 homes	

There was also a change in the implementation timeline. The original proposal indicated that 116 care homes would participate in training in quality improvement methods in 2014, with support provided to undertake *PDSAs* and to use other improvement approaches throughout 2015. Thus care homes were scheduled to be part of the programme for a full two-years, from July 2014 to June 2016, allowing time for skills to build and tools to embed.

For practical reasons, the PROSPER implementation team decided on a phased approach, with four separate cohorts of care homes spaced three to six-months apart. Each cohort received about six months of support (which included visits to the home every one- to four-months), tailoring off to quarterly or six-monthly group gatherings. This stepped approach allowed the PROSPER implementation team to test out and then adapt the approaches whilst properly resourcing them, so reducing the risk for Essex County Council of making mistakes at scale. However it also resulted in some care homes receiving less support than originally envisioned, and in less data being available for outcomes analysis for one third of participating care homes (cohort four).

Participation

Members of the PROSPER implementation team invited care homes to participate on a voluntary basis, based on being identified through Council newsletters or on the team’s knowledge of the care homes from other local initiatives, CQC inspection reports and other internal intelligence. Thus, initially, existing links were a key source of sampling. Inevitably then, many of the care homes in the early cohorts were known to the Council and had been part of other improvement initiatives. As time moved on, recommendations from other stakeholders began to target care homes that were thought to have most to gain from improvement support, e.g. care homes that may have had a large number of falls. Care homes were not specifically targeted based on size or levels of performance.

PROSPER was originally scheduled to focus on two parts of Essex, but was expanded to cover the entire county following requests from managers in other localities. This wider geographic scope meant that the programme spanned the boundaries of the five clinical commissioning groups (CCGs).

The start date and number of care homes in each of the four cohorts is shown in Table 1.3.

Table 1.3: Number of care homes participating in PROSPER

Cohort	Start date	Number of homes
1	July 2014	18
2	January 2015	18
3	July 2015	21
4	November 2015 - February 2016	33

A total of 118 care homes initially signed up to take part and of these 90 (76%) continued with the



initiative. Of the 28 care homes that decided not to continue, two withdrew immediately before and eight after the initial quality improvement training. 18 care homes stayed part of the programme but were not active, withdrawing when a manager changed or when care homes felt that their time needed to be devoted to other priorities. Interviews with these care homes suggested that they felt PROSPER would be too time-consuming or difficult. Four of these care homes moved on to take part in later cohorts, though they remained relatively inactive.

The lower total number than planned relates mainly to the capacity of the improvement facilitation team rather than a lack of interest from the care homes. Essex County Council plans to continue the programme for at least one year after funding from The Health Foundation ends, with further care homes expressing an interest to take part.

Table 1.4 lists the characteristics of care homes that took part. Essex has a higher than average prevalence of older people. There are more than 600 care homes in Essex, 277 of which provide both nursing and residential care for older people. All of these older people's care homes are run by the independent sector rather than the local authority. Compared to the national picture, Essex has fewer small care homes. Table 1.5 compares the characteristics of participating and non-participating care homes in Essex. The breakdown of residential versus nursing care provided by participating care homes was broadly similar to others in Essex.²¹ However, some cohorts included more care homes from large corporations.²²

The median number of residents per home ranged from 31 (Interquartile range (IQR), 23-36) for cohort three to 44 (IQR, 38-50) for cohort one. The proportion of female residents among cohorts one to four were 73%, 66%, 72% and 68%, respectively. There were no statistical differences between the four cohorts for type of care (residential or nursing), ownership, proportion of old residents, geographical location, proportion of occupancy capacity, home-owned in the UK, proportion of residents with dementia, proportion of residents wholly-funded by the Council, proportion of residents part-funded by the Council, proportion of residents in their home for over six-months and whether residents had their own GP (Table 1.4).

Throughout this document, care homes are referred to as small, medium or large. For descriptive purposes small care homes refer to those with 30 or fewer residents, medium-sized care homes have up to 70 residents and large care homes greater than 70 residents. This is a distinction made in published literature, as well as recommended by the PROSPER evaluation advisory group.²³

21 www.cqc.org.uk/search/services/care-homes?location=essex&sort=default&la=&distance=15&mode=html

22 www.cqc.org.uk/content/how-get-and-re-use-cqc-information-and-data#directory

23 www.pssru.ac.uk/archive/pdf/dp2815.pdf

Table 1.4: Characteristics of participating care homes

	Cohort 1	Cohort 2	Cohort 3	Cohort 4	Overall
PROSPER start date	July 2014	January 2015	July 2015	Nov 2015 – Feb 2016	
Number of participating care homes that provided data*	17	16	13	18	64
Median number of residents (interquartile range)	41 (36-77)	38 (31-45)	31 (23-36)	44 (38-50)	39 (30-51)
Average proportion of female residents	73%	66%	72%	68%	71%
Location					
Mid Essex	19%	6%	9%	39%	20%
North East Essex	31%	44%	55%	11%	33%
South Essex	25%	13%	18%	17%	18%
South West Essex	6%	6%	9%	11%	8%
West Essex	19%	31%	9%	22%	21%
Ownership					
One private owner, e.g. family	41%	6%	50%	28%	30%
Owned by small group (2 or 3 homes)	24%	13%	17%	22%	19%
Owned by large corporation	35%	81%	33%	50%	51%
How many homes owned in the UK by same owner					
1	12%	0	0	17%	8%
2-5	44%	7%	64%	22%	32%
6-10	0	13%	0	6%	5%
11-20	0	33%	18%	11%	15%
21+	44%	47%	18%	44%	40%
Type of care provided					
Residential care	69%	80%	80%	56%	70%
Nursing care	6%	0	10%	22%	10%
Both residential and nursing care	25%	20%	10%	22%	30%
Average proportion of residents over 80	82%	82%	78%	76%	80%
Average proportion of residents with dementia	51%	57%	63%	57%	57%
Average % residents fully funded by local authority	54%	46%	50%	47%	49%
Average % of residents in home for over six -months	80%	72%	64%	82%	76%
Each resident has their own GP	38%	27%	46%	35%	36%
One GP practice covers whole home	25%	20%	18%	41%	27%
A single GP practice for most residents but some residents have a different GP	37%	53%	36%	24%	37%

*Note: Figures based on data provided by homes (26 homes chose not to provide background data)

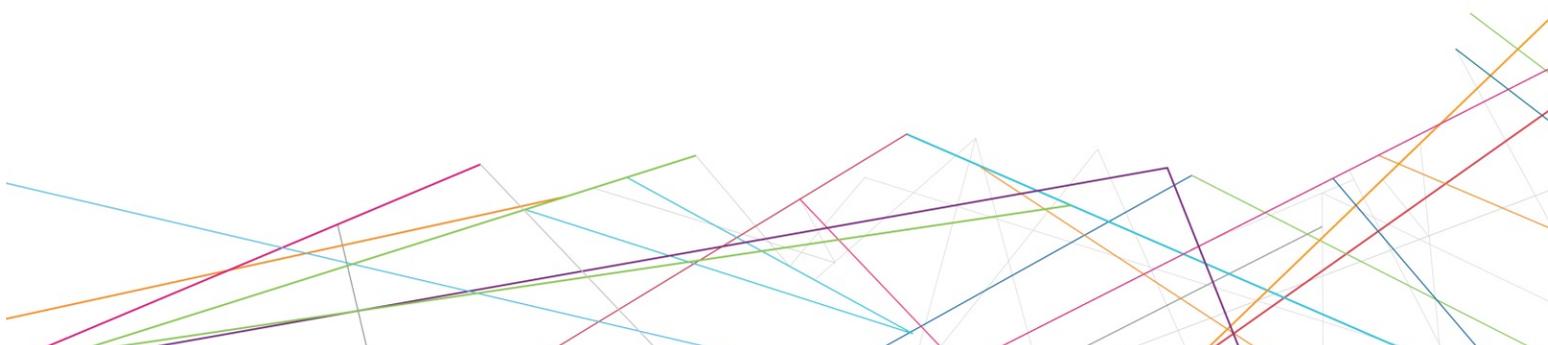


Table 1.5: Comparison between participating and non-participating care homes in Essex and nationally

	PROSPER care homes n (%)	Care homes in Essex n (%)	Care homes in England n (%)
Geographical location			
Mid Essex	12 (20%)	126 (19%)	--
North East Essex	20 (33%)	324 (50%)	--
South Essex	11 (18%)	133 (20%)	--
South West Essex	5 (8%)	31 (5%)	--
West Essex	13 (21%)	40 (6%)	--
Ownership			
One private owner, e.g. family	19 (30%)	172 (41%)	6190 (36.2%)
Owned by small groups (2/3 homes)	12 (19%)	84 (20%)	4526 (26.5%)
Owned by large corporation	32 (51%)	165 (39%)	6360 (37.3%)
Type of care			
Residential care	41 (70%)	351 (73%)	12372 (72.5%)
Nursing care	6 (10%)	77 (16%)	4411 (25.8%)
Both residential and nursing care	12 (20%)	53 (11%)	293 (1.7%)

Note: These data were sourced from the CQC online database. Ownership data are available for 421 care homes in Essex. Data about the type of care provided are available for 481 care homes in Essex and 64 of the PROSPER care homes. It includes data from homes that predominately catered for specialist resident groups, such as those with learning disabilities and these were not targeted by PROSPER.

Facilitation

The PROSPER implementation team was made up of a project lead and up to six facilitators, most of whom were part-time. Table 1.6 lists the number of PROSPER team members working with each cohort.

Table 1.6: Whole time equivalent staff in PROSPER implementation team

Cohort	Number of homes originally targeted	Number of homes taking part	Number in PROSPER implementation team (WTE)
1	28	18	1 managing and facilitating
2	25	18	1 managing, 2.5 facilitating
3	30	21	1 managing, 2 .5 facilitating
4	35	33	1 managing, 2.5 facilitating

All staff were part of the Essex County Council quality improvement team. Initially, the project lead was assigned to work an average of three-days per week on PROSPER, though in practice she worked nearly full-time on the project. From November 2014 to June 2015 there was one additional full-time Band 4 working on PROSPER with other Band 4 staff spending about 5% of their time on the project on an ad-hoc basis. In the final quarter of 2015, two Band 3 staff joined the team as improvement assistants and spent all of their time on PROSPER activities. Together, the project lead, facilitators and improvement assistants are referred to as the 'implementation team' throughout this report.

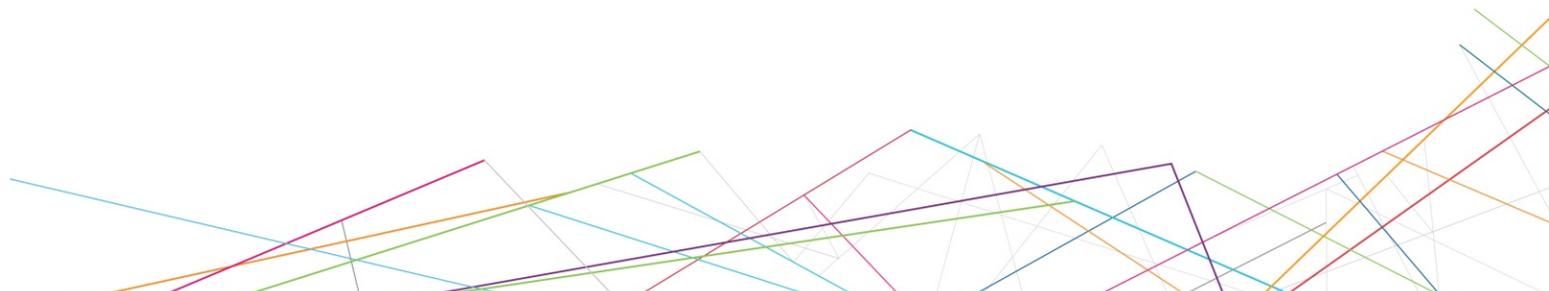
UCLPartners staff provided quality improvement training for the first cohort but the Essex implementation team took over responsibility for the other cohorts and provided individual support visits to the care homes.

Originally the aim was to visit care homes monthly for up to six-months, but in reality care homes received between one and five visits, spanning up to a two-year period. On average, each home received two visits during the first six-months, but this increased in cohort four when dedicated staff were employed onto PROSPER.

The team worked with other services, including some from the NHS, to offer training and resources, identify interventions to support the care homes, run a community of practice event every six-months, attend meetings and events within Essex and externally to promote PROSPER and share learning.

The implementation team were supported by UCLPartners providing advice about quality improvement approaches, by a project group made up of stakeholders from the Council, NHS, care homes and by a steering group made up primarily of senior Council stakeholders.

Another core component of PROSPER was the evaluation team comprising of individuals from UCL,



UCLPartners, Anglia Ruskin Health Partnership, The Evidence Centre and Essex County Council, who worked in a participatory manner to feed in information to assist in the programme development. Together, the implementation team, evaluation team and care homes made up the PROSPER team.

2. Impacts

This section summarises key learning about the impacts of PROSPER after 21-months of implementation. A summary of key findings are reported in this main body of the report. Additional detail is provided in the appendices.

2.1 Safety culture

Data for this section were sourced from:

- review of 523 documents
- 127 hours worth of visits and observations
- 203 individual interviews with care home staff
- 12 discussion groups with care home teams
- online survey with 51 care homes when they began PROSPER and eight- to 20-months later

Safety culture refers to the attitudes, beliefs, perceptions and values that care home staff share about the 'way of doing things' related to safety. Interviews with staff and managers from 67 out of the 90 care homes taking part suggested that PROSPER helped change how team members view safety. This was not confined solely to senior management. Two-thirds of care homes self-reported that a change had occurred in how managers and staff think about safety in the organisation. This manifested predominantly in:

- **redefining safety** as being about minimising risk for residents rather than avoiding sanctions for staff;
- **tracking changes** in incident rates over time and using them to consider ways to improve;
- involving a **wider range of staff** in discussions about how to minimise risk, such as informing domestic staff that the drinks they provided helped to keep residents hydrated and thereby to avoid safety incidents;
- greater **visibility of improvement efforts**, such as displaying incident data and other safety information on boards in reception areas, resident lounges or staff rooms;
- recognising the value of **sharing ideas with other care homes**, rather than viewing them as competitors;
- a desire to **continue using specific tools** such as the *Safety Cross* and monthly graphs once PROSPER ends as the tools were thought to help improve the lives of residents; and
- beginning to **involve families and residents** in improvement discussions at some care homes, particularly around display boards.

See Appendix 4 for further details about impacts on safety culture. Box 2 describes the journey of one home.

Box 2: One home's journey towards improved safety culture

"We started PROSPER [in 2015] and I didn't know what to expect at all. It was a bit daunting at first with all the new words and concepts. We didn't know if we wanted to do it because it sounded complicated. Once we went to the second study day though, things started to fall into place.

PROSPER has definitely helped us to focus more and look at other things. We are trying to reduce falls and we've set ourselves a target to achieve. We are working more with family members about getting good footwear and we're getting staff to clean people's glasses and make sure people don't feel dizzy when they're going to move. You might think that stopping falls is all about mobility problems and weakness, but there is a lot more to it than that. PROSPER has helped us think of all the things that could contribute. It has broadened our minds.

PROSPER has helped the senior team focus on safety more and we involve a wider range of staff in things; like cleaners ask people to have a drink now. We put together a board for staff and relatives about things to ask. Last year other homes went through the first cohort so we stole their ideas about putting up boards. It's good we can all learn from each other. But it's not just the things we are doing that make a difference it is sort of how we are thinking, if that makes sense. Staff are a lot more aware of things and look out for things now. It has almost become what we just do every day.

Families see the board as it is in the reception area and has information about pressure areas and so on, so we are educating family members more now. We would not have done this before. Some of the families have been a bit scared when they see all the nitty gritty but they are supportive of what we are trying to do. It opens the doors for conversations. Like we are all on one team.

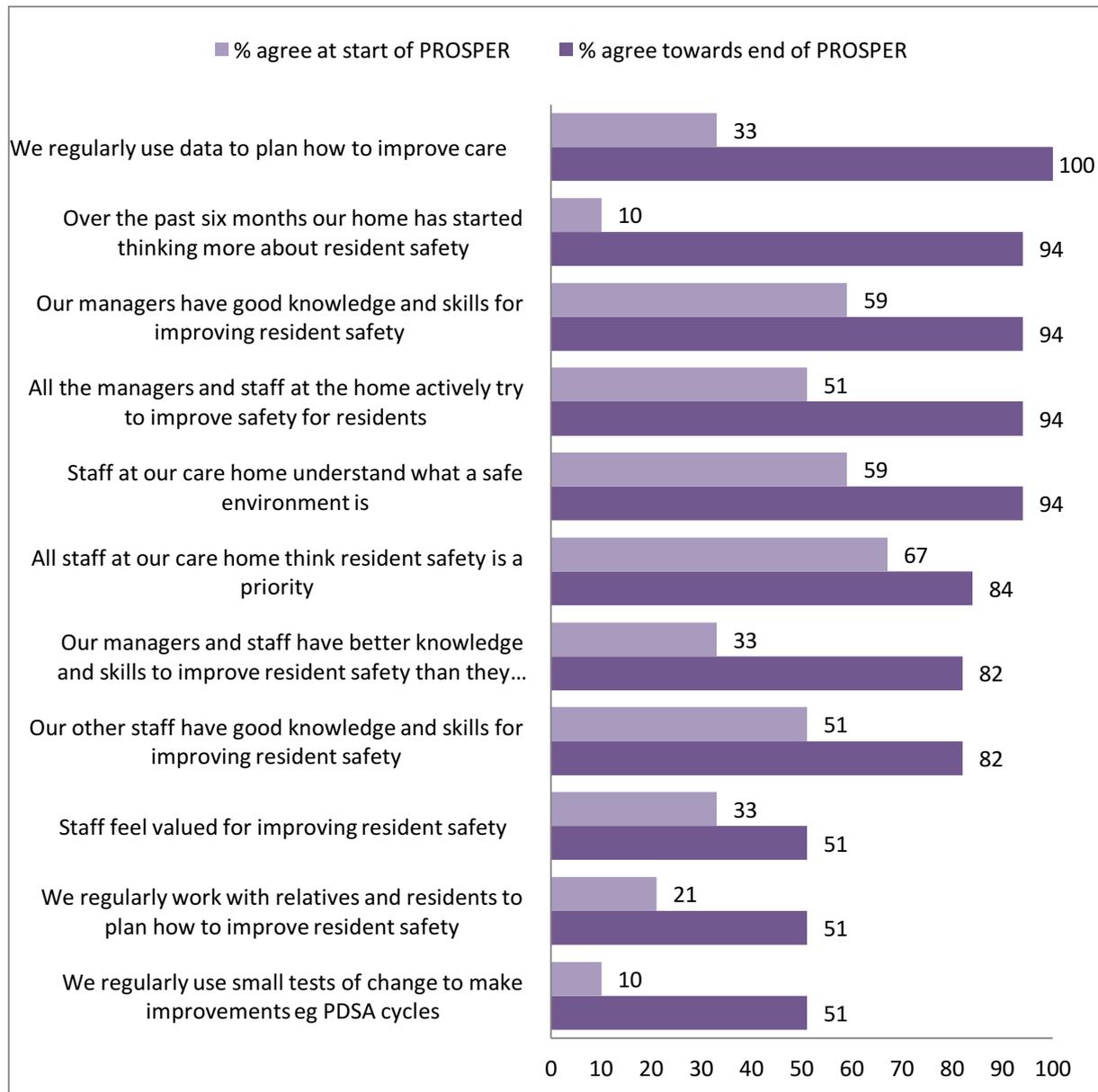
The monthly Safety Cross is working well as it is visible and we can see how many falls and pressure ulcers we have. It is having it visible that makes it more of a priority I think. I don't like that it is a cross as that is off-putting for some people and there has been a bit of backlash from some people about that. If it was a calendar or a different shape I think it would be better.

We are submitting data for the Monthly Mapping which is so helpful. The Safety Cross is ok but it doesn't show us over time. The mapping graphs go right back for a year or more so we can really see what is happening and the highs and lows. Having the comparisons with other homes is useful. It makes you see where you are doing well and not so well and it makes you a bit competitive in a good way. Being able to look at data is good and I have started to make graphs for other things too. We can see it is useful so we are trying it for other things.

We are enjoying being part of it and recommend it to other people. We will continue to use the tools provided once PROSPER is finished because it helps people stay focused and keeps safety a priority. It does change the way you think about things. We have so much going on here and it is easy to forget about things. PROSPER is helping us get back to basics and think about what is important. And we are doing it as a team." [Manager of a medium-sized home]

Figure 2 shows results from a before and after survey completed by care home managers which was designed to track changes between when care homes began PROSPER and a follow-up in March 2016, between eight- and 20-months later. Data from the 51 care homes that completed it suggests that there were changes in self-reported aspects of safety culture. In particular, towards the end of PROSPER care homes were more likely to say that they were using data to guide improvement, that safety was a priority and they had more knowledge and understanding of safer care. These improvements held up regardless of the size of the home, the part of Essex or the ownership type.

Figure 2: Proportion of care homes that agreed with various statements about safety culture



Note: Data is based on matched comparisons of 51 care homes spanning eight- to 20-months.

2.2 Safety processes

Data for this section were sourced from:

- review of 523 documents
- 127 hours worth of home visits and observations
- 203 individual telephone interviews
- 12 discussion groups with care home teams
- 26 meetings, discussion groups and interviews with PROSPER team members

About two-thirds of care homes involved in PROSPER made some changes to their processes in a way that improved safety. The most commonly reported changes were:

- improving the **use of data about incidents** to help track changes over time and think about the reasons for trends. Graphs showing care homes their monthly rate of incidents, including up to 20-month's of data, were well received. Care homes reported using their data at team meetings or in discussions with relative groups to help identify areas for improvement. One home used a 'Safety Walking Stick' (similar to the *Safety Cross*) at the front of people's notes to easily see the number and date of falls rather than these being 'hidden' in care records. Others have adapted a simple table provided by the evaluation team to compile information about other harms (outside the scope of PROSPER);
- **implementing changes** in small cycles and testing their impacts. In quality improvement terms this is known as a *Plan-Do-Study-Act (PDSA)* cycle. However most care homes did not use this terminology and a number did not keep formal records of their changes and tests. They did, however, use the broad approach of testing new ideas. Examples included using different coloured drinks coasters or cups as a reminder that people should be offered beverages frequently or providing families with a leaflet about where to buy non-slip slippers. Box 3 lists further examples. Some of these ideas were examples provided as part of PROSPER discussions and toolkits. Others were developed by the care homes themselves;
- taking part in **training** about infection control, diabetes, medicines management, hydration, falls prevention and associated topics;
- making safety issues more visible through the use of '**champions**' (named and designated individuals), display boards and use of the *Safety Cross* (safety incidents calendar); and
- using resources provided by the PROSPER implementation team, such as small mirrors to help check for pressure ulcers on heels.

Appendix 5 describes these changes in more depth. Box 4 provides an example from one home.

Care homes that did not make changes to their care processes were either new to the programme or did not feel that PROSPER offered any new information or skills for them.

Box 3: Examples of changes reportedly made by care homes as a result of PROSPER

Sharing with other care homes

- Sharing ideas with other care homes through champions' study days, communities of practice events and newsletters
- Inviting other care homes to attend events run at the home, such as nutrition and hydration activities, dementia day and training activities

Getting the team involved

- Encouraging a wide range of staff to be involved; through asking for ideas at staff meetings, using the *Safety Cross* and having PROSPER champions to train other staff
- Having a suggestions box to actively get people's ideas for improvement

Using data for improvement

- Using the *Safety Cross* to raise awareness about the number of falls, pressure ulcers and / or urinary tract infections
- Using the Monthly Mapping graphs to look at longer-term changes and comparing with the average of other care homes
- Showing CQC records of changes made and the impacts of this over time

Promoting better care

- Helping to change people's perceptions of care homes by showing that staff are working hard to help residents
- Displaying materials on boards, e.g. the *Safety Cross*, graphs, newsletters, tips sheets, which helped staff and families see what is happening and ask questions
- Cascading what is learnt to other care homes in the company

Learning new things

- Learning new information from training, such as Champions' days where carers learn how to teach other staff members about ways to improve care

Making little changes

- Offering more drinks to residents, having more drinks stations in the lounge, using coloured coasters or cups to show who needs more frequent fluids, using jellies, fruit platters and melons to increase hydration
- Using mirrors to check for pressure ulcers
- Decorating walking frames to individualise them, changing ferrules (to stabilise the end of walking sticks) and using the fall's checklist.

Box 4: Example of changes in safety processes at one home

“We are now using PROSPER more as a tool for us rather than a tool for its own sake. It is helping us to prevent things from happening. We were slow to get going but now, thinking back, we have done a lot of things. This project is useful for reminding people of things; it is all about basics but is useful as we are seeing results. We are doing small things like the body map for pressure sores, with every member of staff involved. Carers are completing a body map every day for about 80% of residents. PROSPER gave us the body map to use and a series of quick questions for carers to think about, and a space for carers to sign their name. It is a user-friendly form. Getting engagement from all staff is important. It doesn’t take people long out of their day to do these things and we now have an easy way of recording things.

PROSPER has been really good for two reasons. Firstly we have seen improvements which is better for residents and their safety. But secondly it is making carers think outside of the box and consider all the reasons for things. Like falls is not just about mobility, there may be other reasons people fall. And what is the reason for pressure ulcers? It has made managers and staff consider all of the things involved in reducing risk. We started to analyse the falls to see whether it is to do with capacity and weakness. We look at how often people fall, how many people fall and when. We look at what precautions are needed. Accident reports now go on the desk of the manager rather than in care plans. Falls are more visible now rather than hidden away.

There are lots of changes as a result of PROSPER. Everyone is more aware, like the domestic team automatically offer people a drink when they go in to clean rooms. It makes people feel more a part of the team. We were always proactive with pressure ulcers, but now the staff are more sharp about this and have been trained about how to spot issues. The drivers helped us focus on what to up skill staff about. We now offer 10 minute training about each thing. The carer gets a copy and they sign it to say they have done it. This means the manager is less anxious about staff skills. We got this idea from the PROSPER training where they talked about safety drivers. We do the training in people’s first week as part of induction now, so we have 10 minute training on each of the safety drivers.

We started using the Safety Cross for pressure ulcers, but now we have rolled it out to falls and UTIs. We’ve put it across the whole home. It gives people motivation to keep going and makes them proud to see everything is all green. The Monthly Mapping graphs help us think about how to improve and that wasn’t there before. We had the metrics before but now we can see what it means for us.

This has helped us with a person-centred approach. It is not only statistics. Behind the statistics are residents. This is a very busy home. Many times we are doing things at speed. Now we know we can do all the graphs quickly and then look at them in-depth and analyse because everything is in one place. We are discussing things as a team and thinking how to do things better together. There is good team working and we ask for advice from seniors. The tools have helped us to stop behaving like robots, to stand back and think about things. Before we looked at things on an individual basis but now we look at things on a bigger scale and focus on improvements throughout the home. It pushes us to think about new ideas for helping people and we are discussing things with families and residents.” [Manager of a large home owned by a corporation]

2.3 Resident outcomes

The outcome data and care home characteristics were collected by The Evidence Centre using a monthly data collection form. Data was collected between a six- to 12-month period prior to the start of the intervention and in March 2016. Care homes were asked to provide the number of events for each outcome on a monthly basis. In addition to data on the total number of residents and total number of female residents each month, the care home location and other items of background information, as described in Table 1.4.

Not all care homes collected the quantitative data requested by the evaluation team. 94% (n=17) of care homes from cohort one, 89% (n=16) of cohort two homes, 62% (n=13) of cohort three homes and 55% (n=18) of cohort four homes provided some data about resident outcomes between July 2013 (one year prior to the intervention) and March 2016. The quality of the data collected varied between the care homes. Some care homes only provided pre-intervention data and some only provided post-intervention data, and some provided both. Missing data amongst the 64 care homes for the six outcome measures were 6.8% for cohort one, 9.8% for cohort two and 12.6% for cohort three. 41.1% care homes (7 out of 17) from cohort one, 50.0% (8 out of 16) from cohort two and 23.1% (3 out of 13) from the cohort three homes were able to provide data for six- to 12- months before and after the intervention. Cohort four data was not included in the analysis because there was a cut-off point for data collection of 8 April 2016. There was therefore insufficient time for enough post-intervention data points for this cohort because these care homes began the programme between November 2015 and February 2016.

Outcome data were plotted as time-series graphs with a one-month interval. The rates of pre-intervention and post-intervention incidents were compared using chi-squared test, i.e. total number of events over total number of residents observed between pre-intervention period and post intervention period. All statistical analysis was carried out using SAS statistical software (version 9.3).

The analysis was challenging for a number of reasons: (a) it is difficult to attribute change to the PROSPER intervention, not just because of the study design but because the intervention was changing during the study, (b) an increase in reporting of incidents might be expected as a consequence of participation in the programme and this would hide any beneficial impact, (c) homes do not have a long track record of collecting data, particularly for pressure ulcers and UTIs. For many of the care homes their methods of collecting data were often manual (sometimes extracted retrospectively from resident records), complicated and unreliable, and (d) it is difficult to reduce hospital utilisation as this depends on a wide range of factors.

We therefore experienced challenges with both the quality and quantity of data available from care homes despite considerable efforts by the evaluation and implementation teams. Particular problems were experienced with collecting pre-intervention data. The evaluation team undertook measures to get the best possible quality data but had to respect the emergent nature of the study and that PROSPER was primarily an improvement project rather than a research study.

Results from all available data for the study

If all the available before and after intervention data from the care homes are aggregated then PROSPER was associated with statistically significant reductions in the rates of falls and pressure ulcers between the pre-intervention and post-intervention periods (Table 2.1). There was no reduction in hospital admissions due to falls, and a statistically significant increase in rates of UTIs, any hospital admissions and A&E attendances after the intervention.

Table 2.1. Number of events and event rates among the 64 care homes

	No of events	No of residents	Rate of events	p value
Falls				
pre	3058	12884	23.7%	<0.01
post	4714	22564	20.9%	
Pressure ulcers				
pre	644	12367	5.2%	<0.01
post	858	22157	3.9%	
UTIs				
pre	484	10934	4.4%	<0.01
post	1073	20900	5.1%	
Hospital admissions				
pre	297	11935	2.5%	<0.01
post	704	21731	3.2%	
A&E attendances				
pre	312	11932	2.6%	<0.01
post	729	21839	3.3%	
Hospital admissions due to a fall				
pre	122	12363	1.0%	0.16
post	252	21875	1.2%	

Figures 2.1-2.6 show changes in rates of safety incidents over time

Figure 2.1. Rate of falls in the PROSPER care homes

Figure 2.1.1 Incident rates by cohort before and after intervention

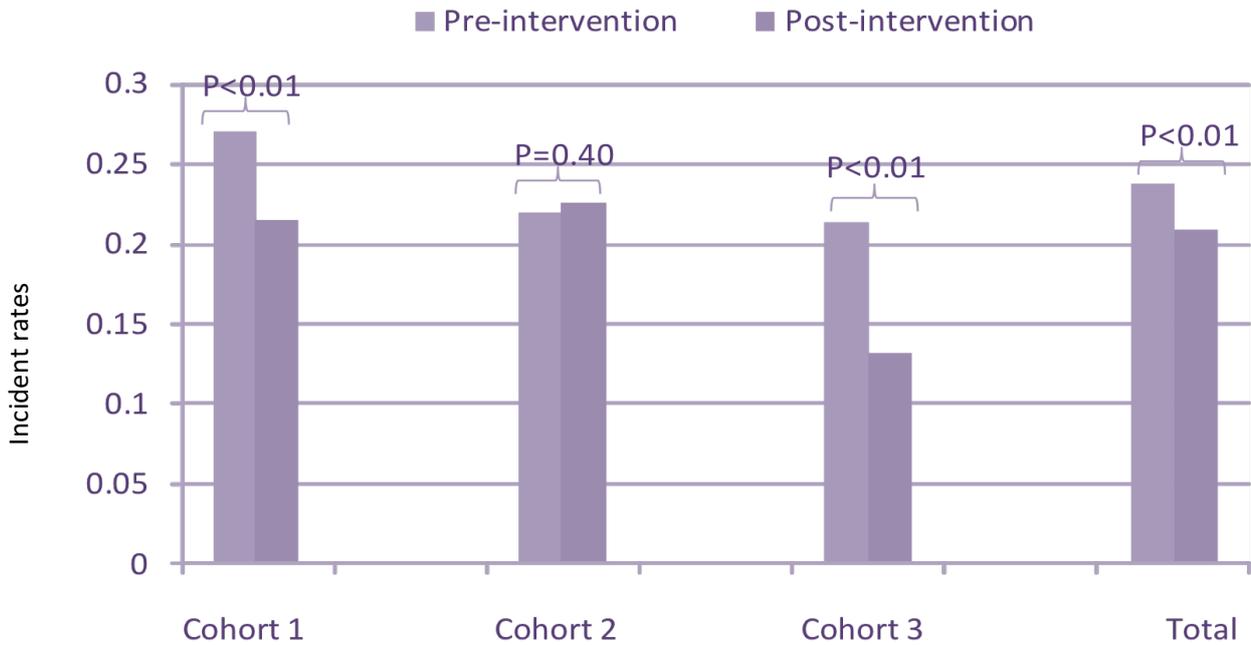


Figure 2.1.2 Run chart of changes in incidents by cohort over time

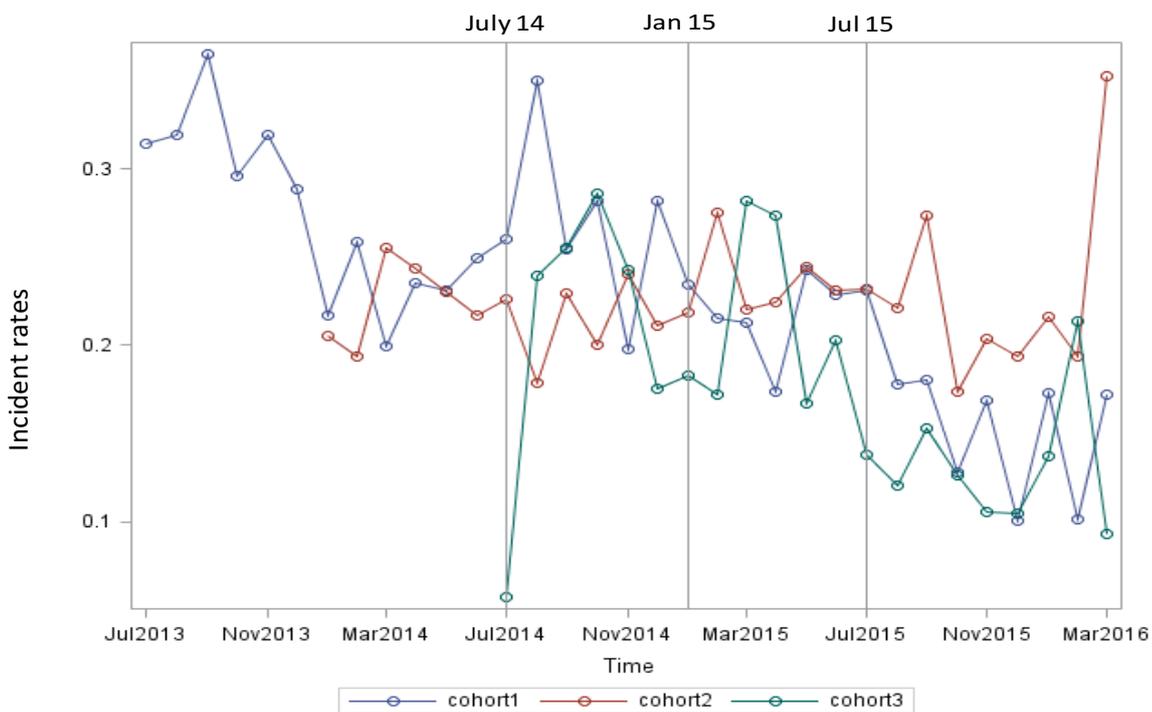


Figure 2.1.3 Run chart of total changes in incidents across all cohorts

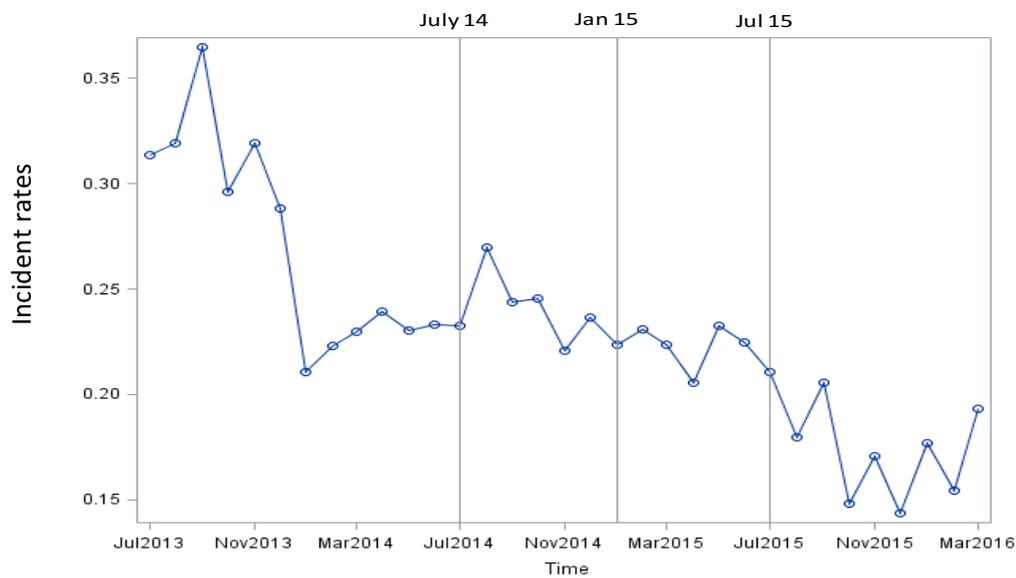


Figure 2.2. Rate of pressure ulcers in the PROSPER care homes

Figure 2.2.1 Incident rates by cohort before and after intervention

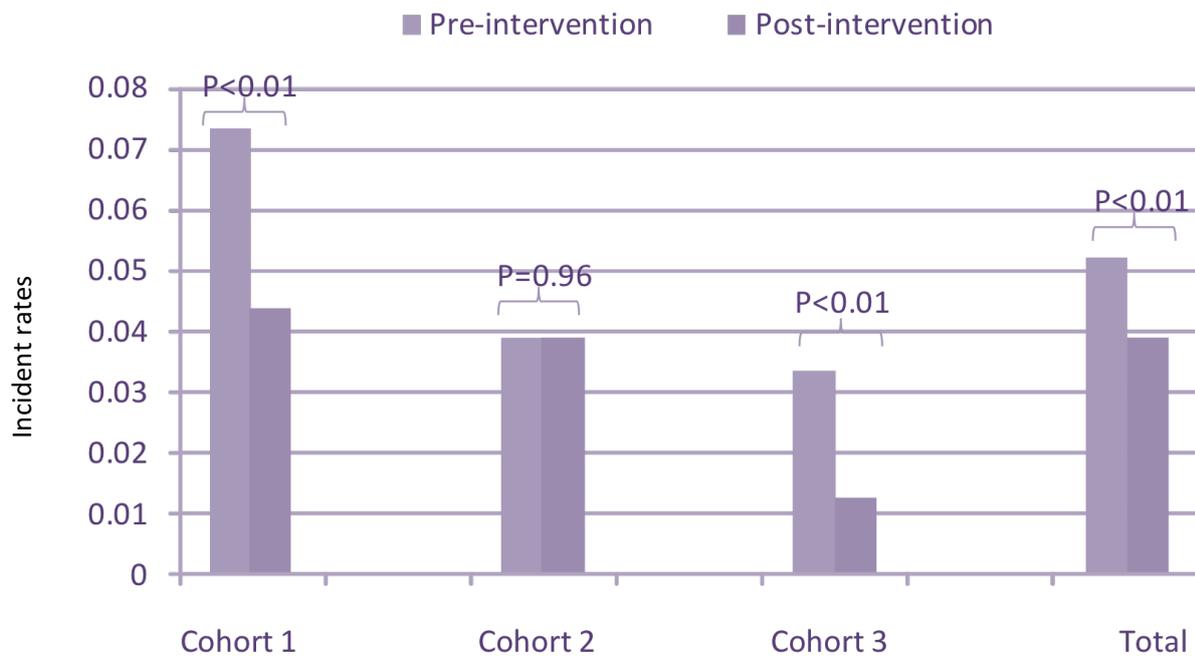


Figure 2.2.2 Run chart of changes in incidents by cohort over time

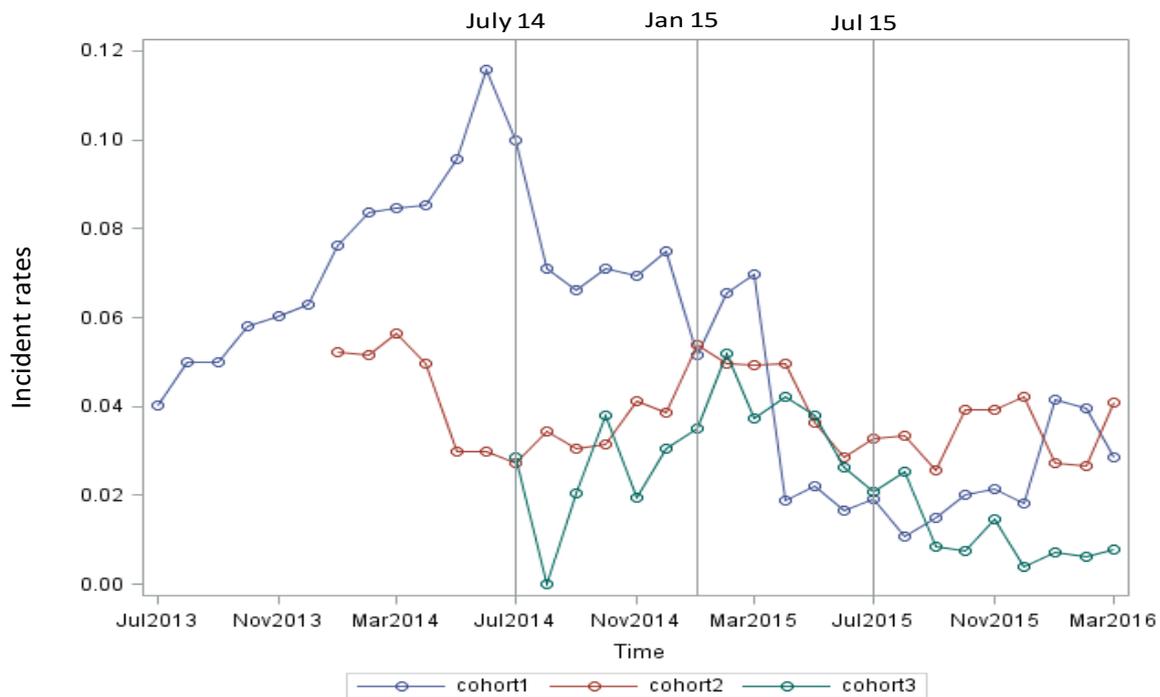


Figure 2.2.3 Run chart of total changes in incidents across all cohorts

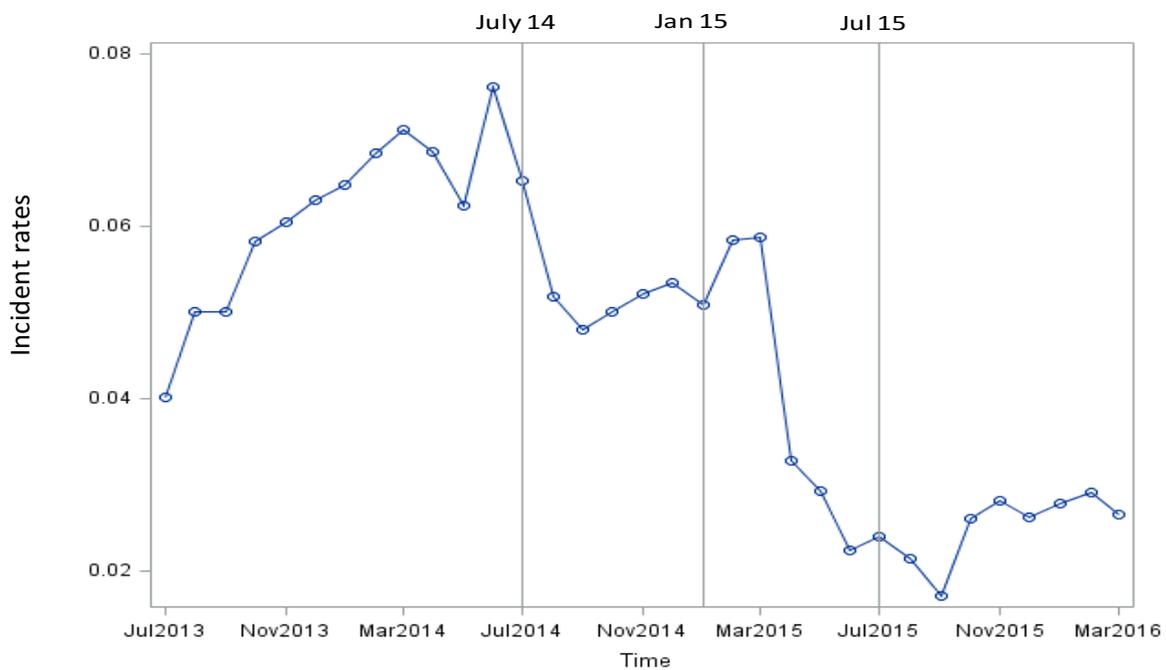


Figure 2.3. Rate of urinary tract infections in the PROSPER care homes

Figure 2.3.1 Incident rates by cohort before and after intervention

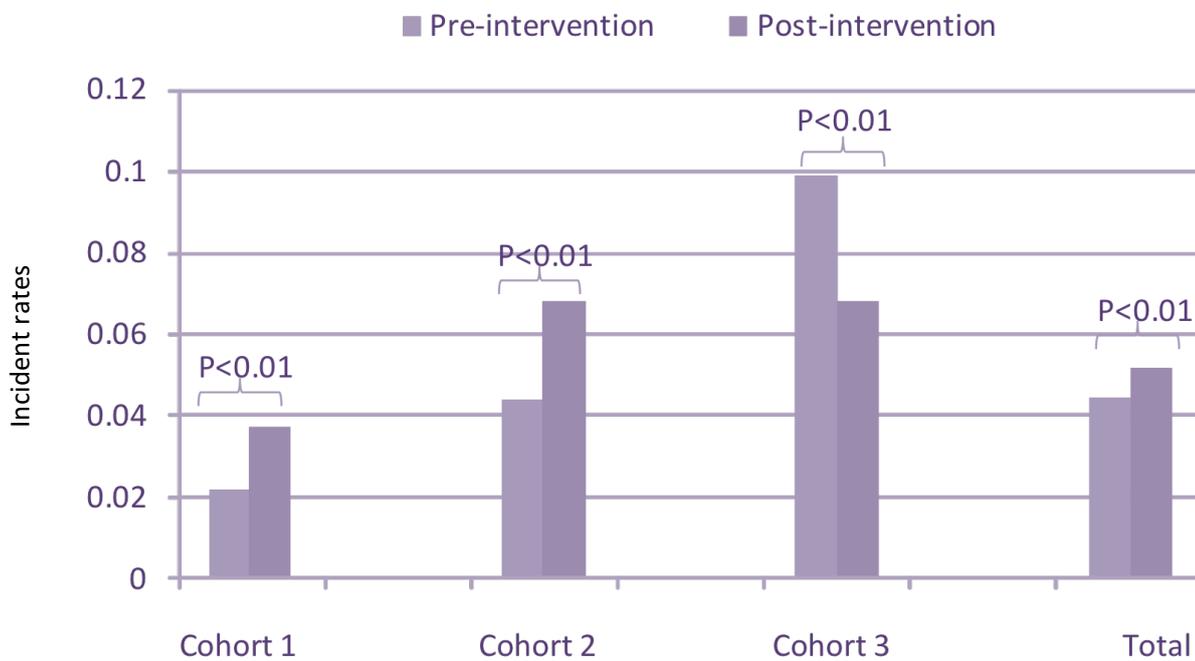


Figure 2.3.2 Run chart of changes in incidents by cohort over time

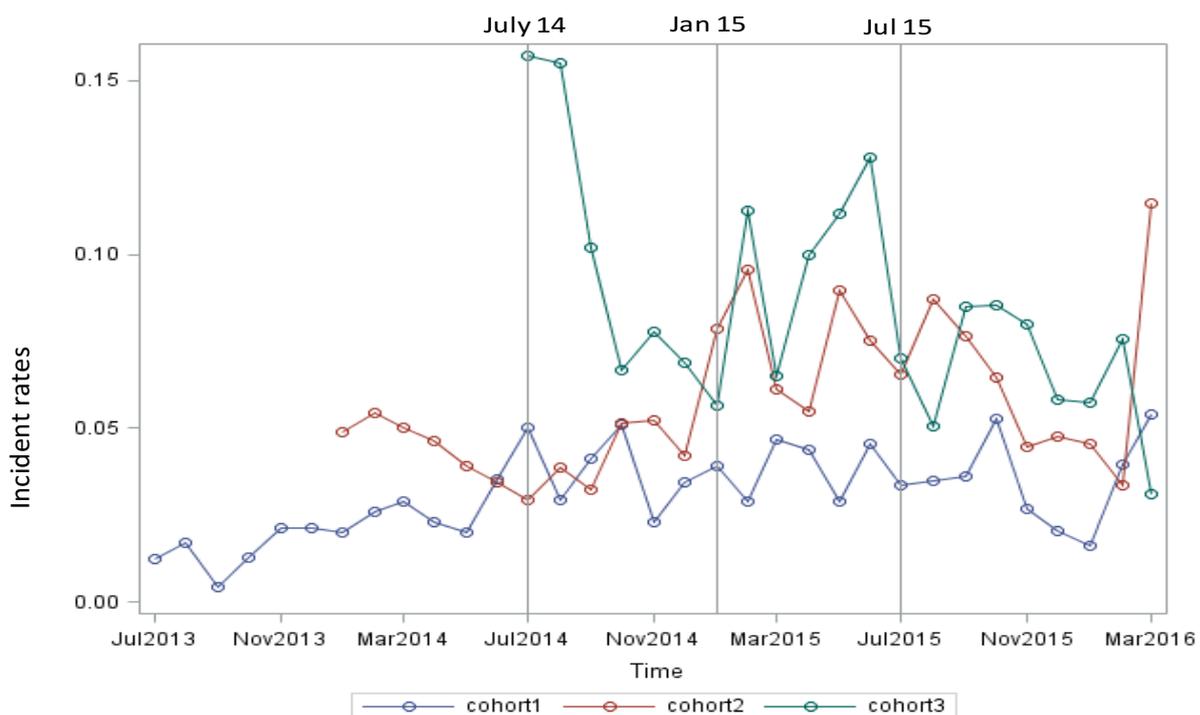


Figure 2.3.3 Run chart of total changes in incidents across all cohorts

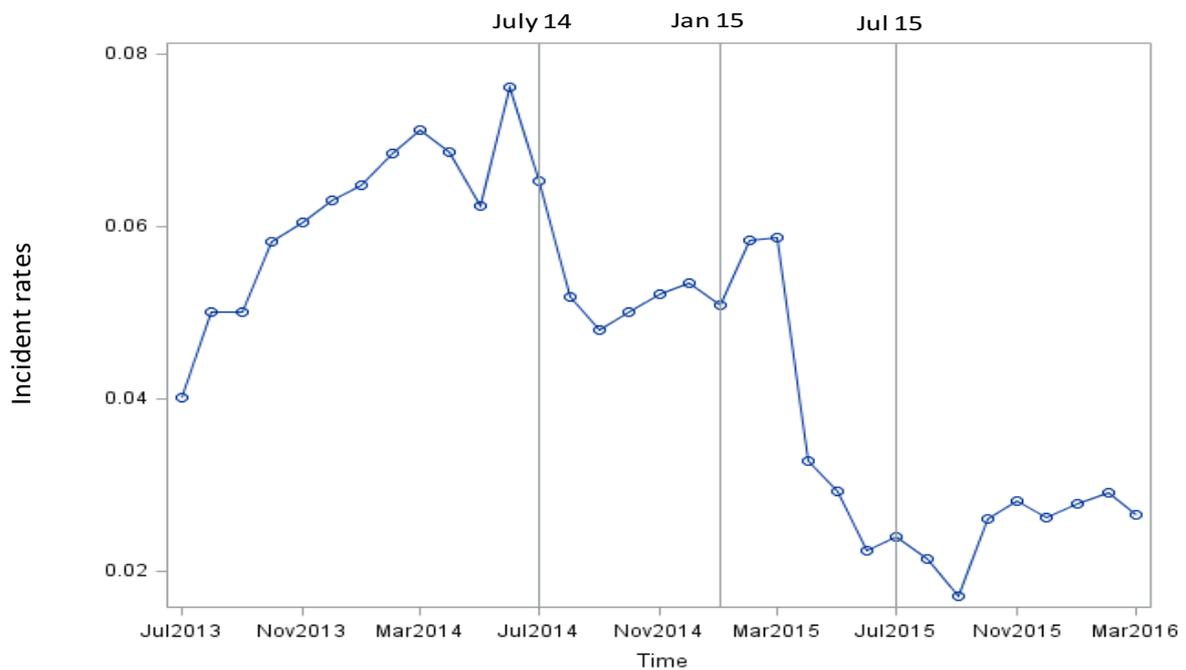


Figure 2.4. Rate of any hospital admissions in the PROSPER care homes

Figure 2.4.1 Incident rates by cohort before and after intervention

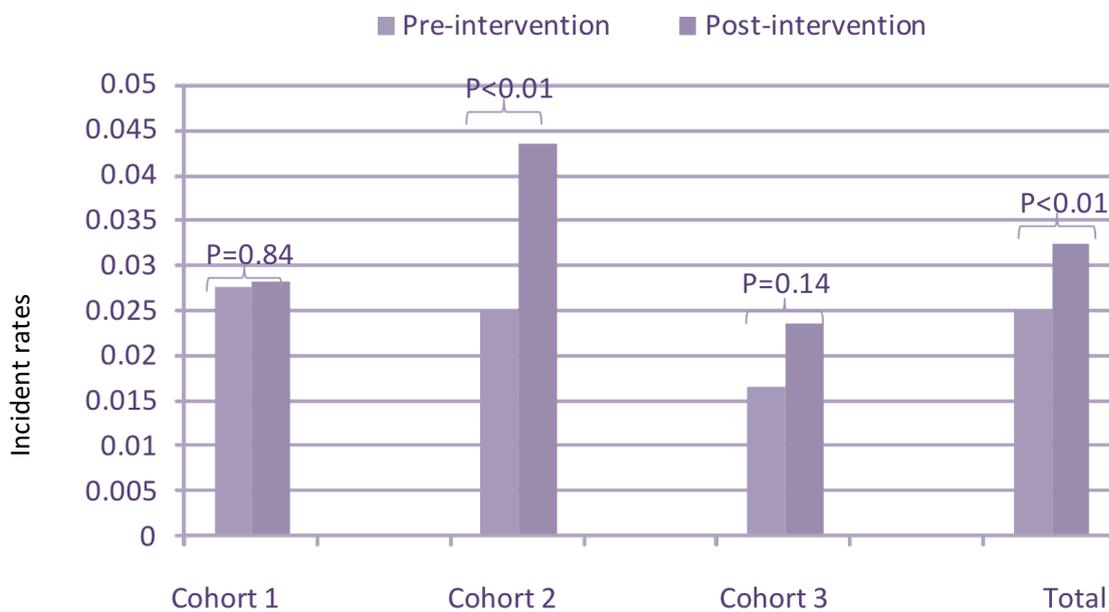


Figure 2.4.2 Run chart of changes in incidents by cohort over time

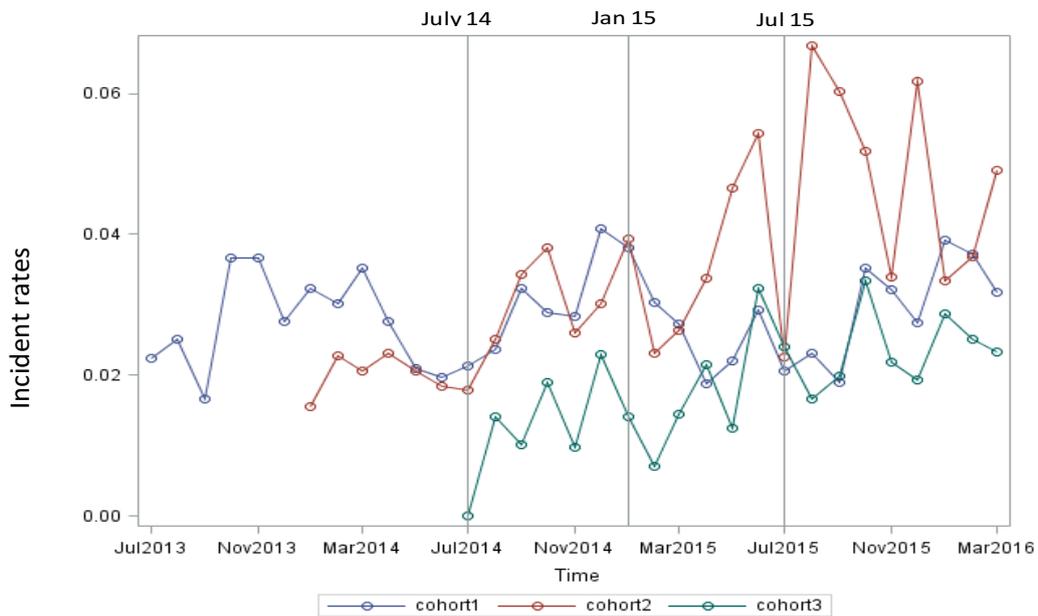


Figure 2.4.3 Run chart of total changes in incidents across all cohorts

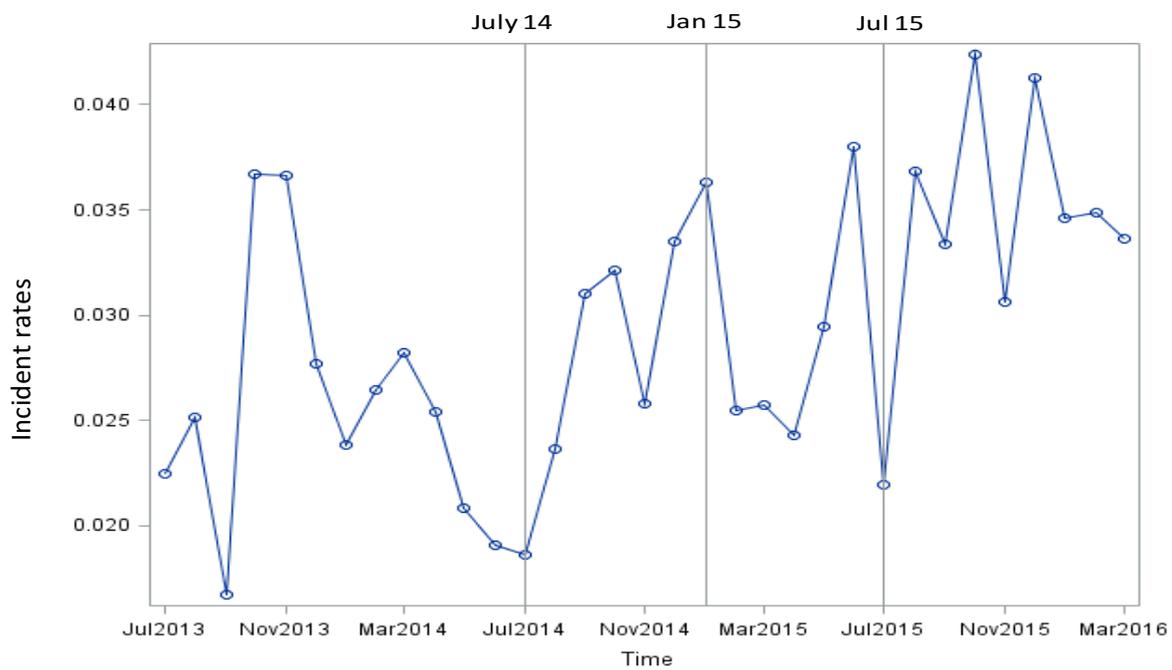


Figure 2.5. Rate of A&E attendances in PROSPER care homes

Figure 2.5.1 Incident rates by cohort before and after intervention

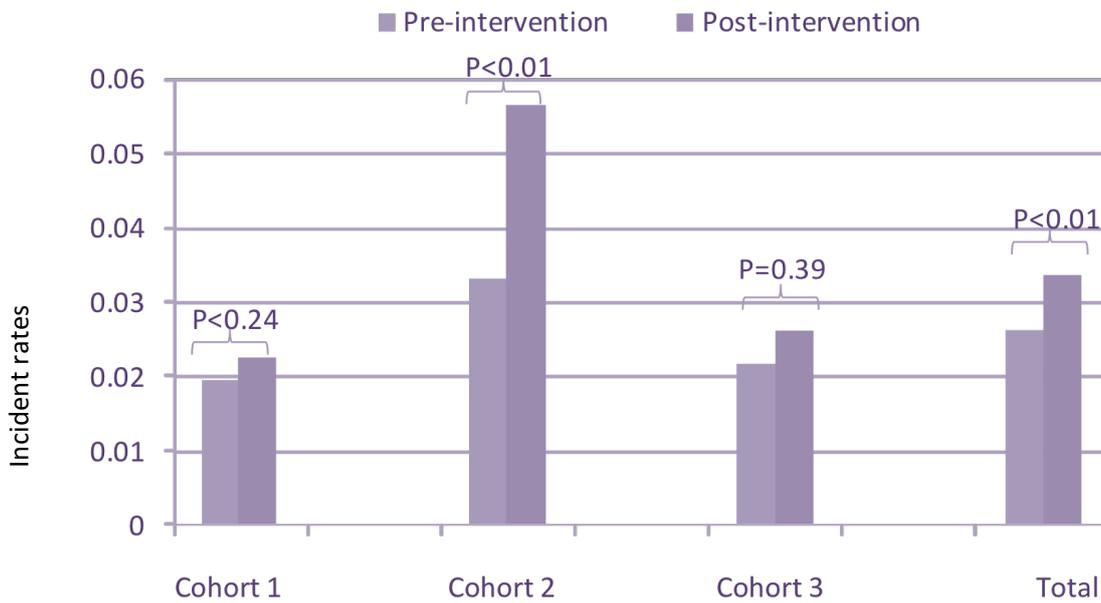


Figure 2.5.2 Run chart of changes in incidents by cohort over time

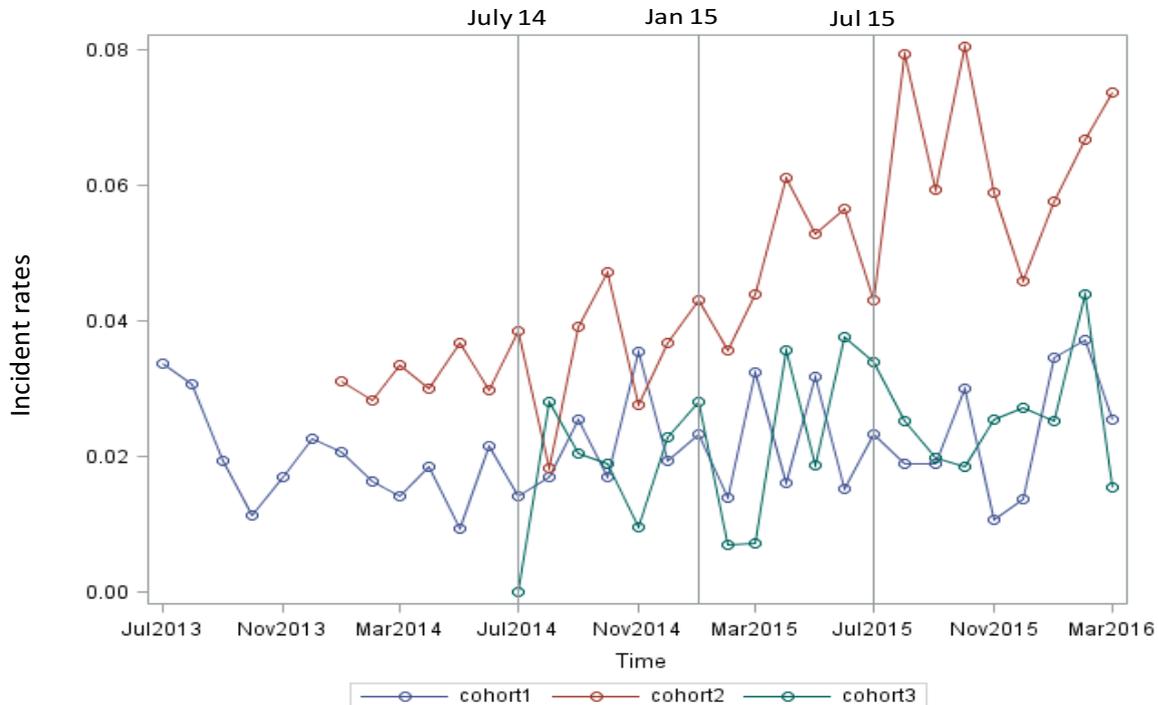


Figure 2.5.3 Run chart of total changes in incidents across all cohorts

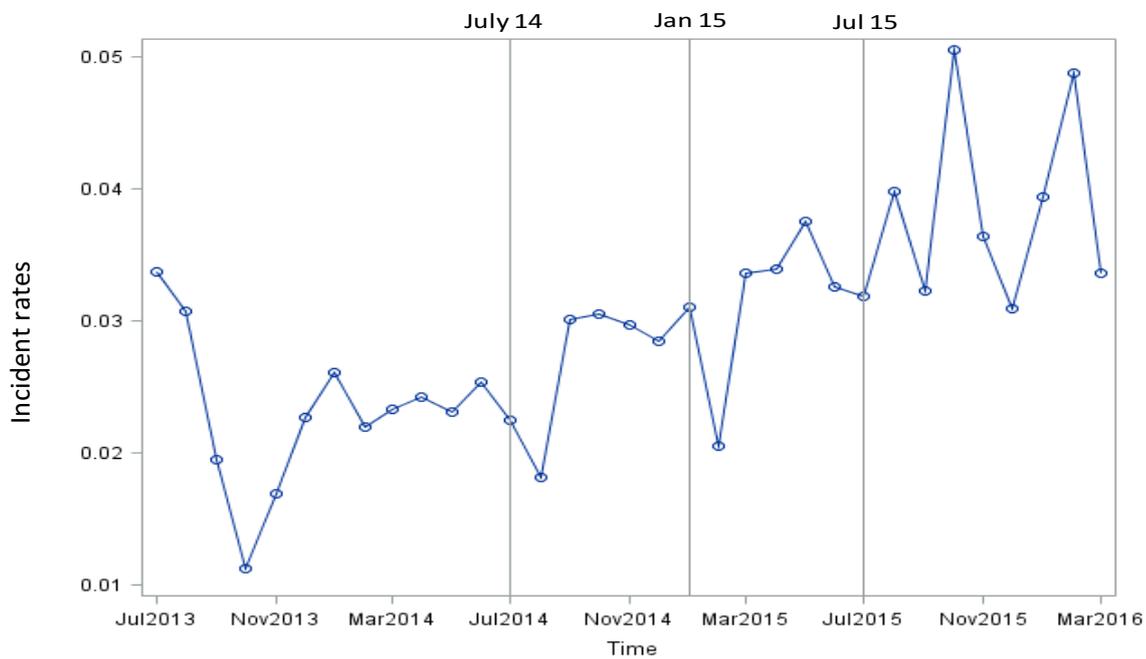


Figure 2.6. Rate of hospital admissions due to a fall in PROSPER care homes

Figure 2.6.1 Incident rates by cohort before and after intervention

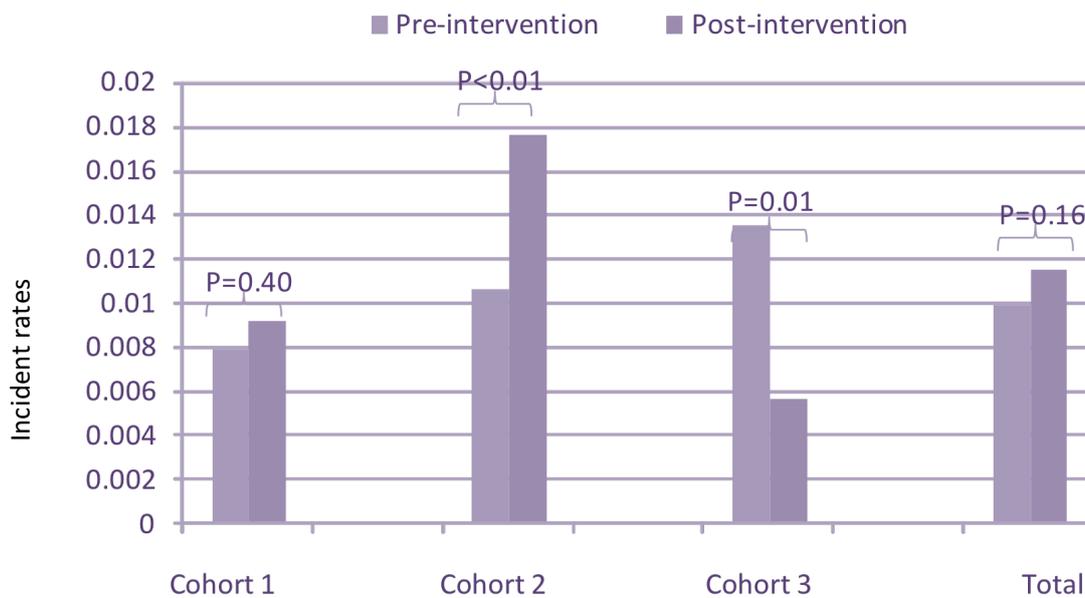


Figure 2.6.2 Run chart of changes in incidents by cohort over time

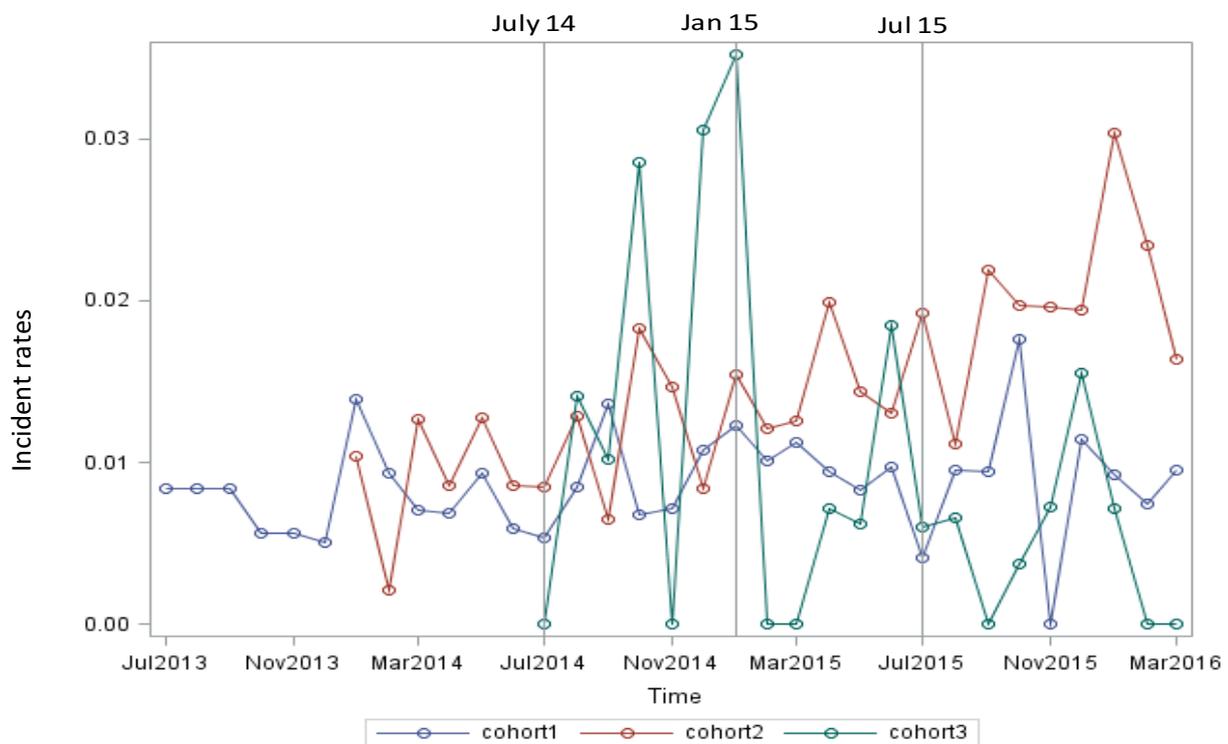
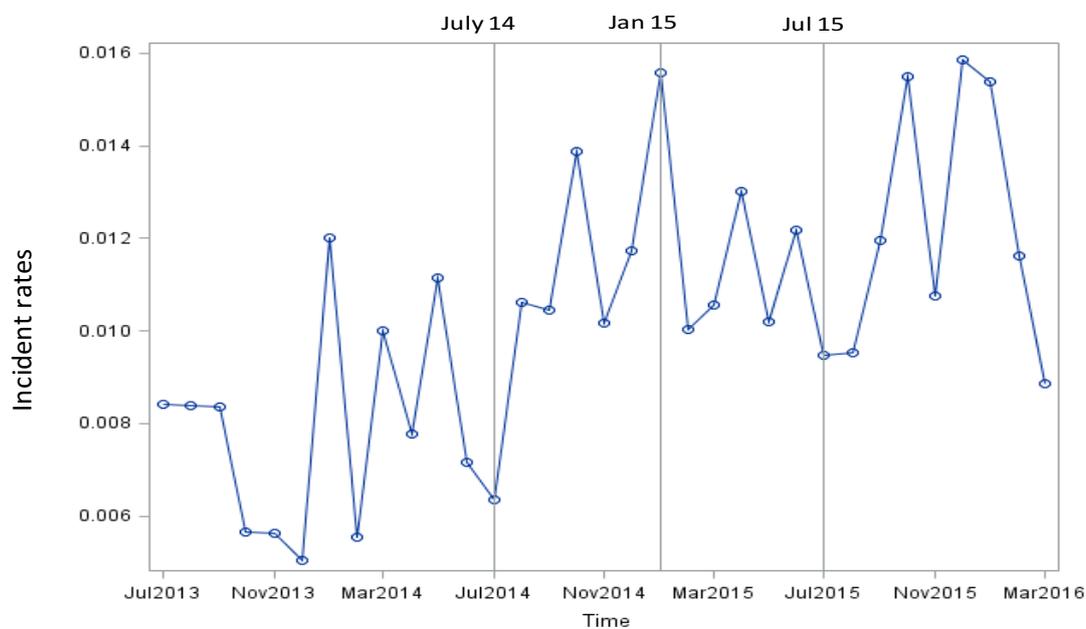


Figure 2.6.3 Run chart of total changes in incidents across all cohorts



Results of sub-group analyses of the data

Given the complexity of the improvement initiative, in terms of the nature of the intervention and the turnover of residents within the care homes, the evaluation team considered it reasonable to aggregate data from all the care homes, irrespective of whether they had collected both pre- and post-intervention data and whether they had focused to a greater or lesser extent on specific safety areas. Nevertheless, and in addition to this main analysis, we carried out a number of subgroup analyses to explore the uncertainty inherent in the data.

First, we looked at the outcomes derived from care homes that focused on specific areas of safety rather than attempting to improve all three areas. Six care homes from cohort one; ten care homes from cohort two and four care homes from cohort three focused on falls. Four care homes from cohort one; eight care homes from cohort two and four care homes from cohort three focused on urinary tract infections. Four care homes (three in cohort one and 1 in cohort two) focused on pressure ulcers. The event rates of falls, pressure ulcers and urinary tract infections are shown in 2.7-2.9. Similar to the results derived from all of the data, the intervention was associated with statistically significant reductions in the rates of falls [21.7% (1277/5884) vs. 19.9% (2312/11608), $p < 0.01$] and pressure ulcers [7.1% (64/897) vs. 1.6% (49/3015), $p < 0.01$] between the pre-intervention and post-intervention periods. However, an increased rate of urinary tract infections was observed [5.0% (254/5091) pre vs. 6.7% (470/7054) post, $p < 0.01$].

Second, a case could be made to only analyse data from care homes which had provided data for both the pre- and post-intervention periods. Seven care homes from cohort one, eight care homes from cohort two, and three care homes from cohort four had both pre- and post-data for six to two-months either side of the intervention start month. Re-analysis of the data for this sub-group of care homes suggested that there was no statistically significant decrease in incident rates as a result of the intervention for any of the outcomes, i.e. the intervention effect seen when all the data was analysed disappeared – indeed there was a statistically significant increase in the rate of falls, urinary tract infections, A&E attendances, any hospital admissions and hospital admissions as a result of falls. The results for these analyses are shown in Appendix 6.

Third, we were uncertain about the validity of data collected by three of the care homes because they appeared to report no incidents when we suspect they were simply not reporting incidents. We therefore re-analysed the data having excluded these three care homes from the analysis. No difference was found between the results of this sub-group which are presented in Figures 2.1 – 2.6 using all of the data.

We found no differences in impacts on resident outcomes based on geographic area, home size, whether care homes had one assigned GP, level of engagement with PROSPER and cohort number. The data seem to suggest some kind of ‘cohort effect’, for example cohort three seem to make a disproportionate contribution to reducing falls and cohort one seem to have a strong influence on the observed changes in pressure ulcers. The reasons for these effects are not clear from the quantitative or qualitative data that we collected.

Finally, resident outcomes collected using the *NHS Safety Thermometer* were available for some care homes in cohorts one and two ($n = 18$), before the care homes decided to make use of the *Safety Cross*. In line with Quality Improvement methodology, these data were derived from a sample of

residents over a 72-hour period, rather than from all residents. Figure 2.10 provided by Haelo showed that there were no significant changes for the falls, pressure ulcers and urinary tract infection. Overall, the safety incident rates were lower than the rates reported by care homes, confirming the evaluation team's view that the care homes were less likely to use the *NHS Safety Thermometer*.

Figure 2.7. Rate of falls in care homes that focused on reducing falls

Figure 2.7.1 Incident rates by cohort before and after intervention

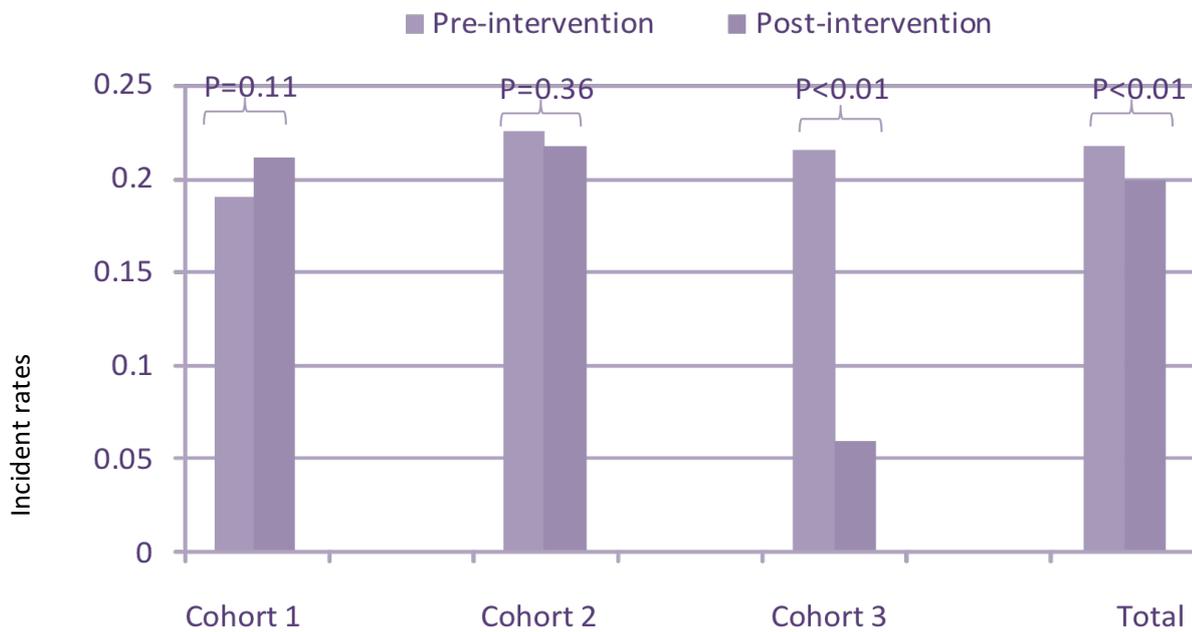


Figure 2.7.2 Run chart of changes in incidents by cohort over time

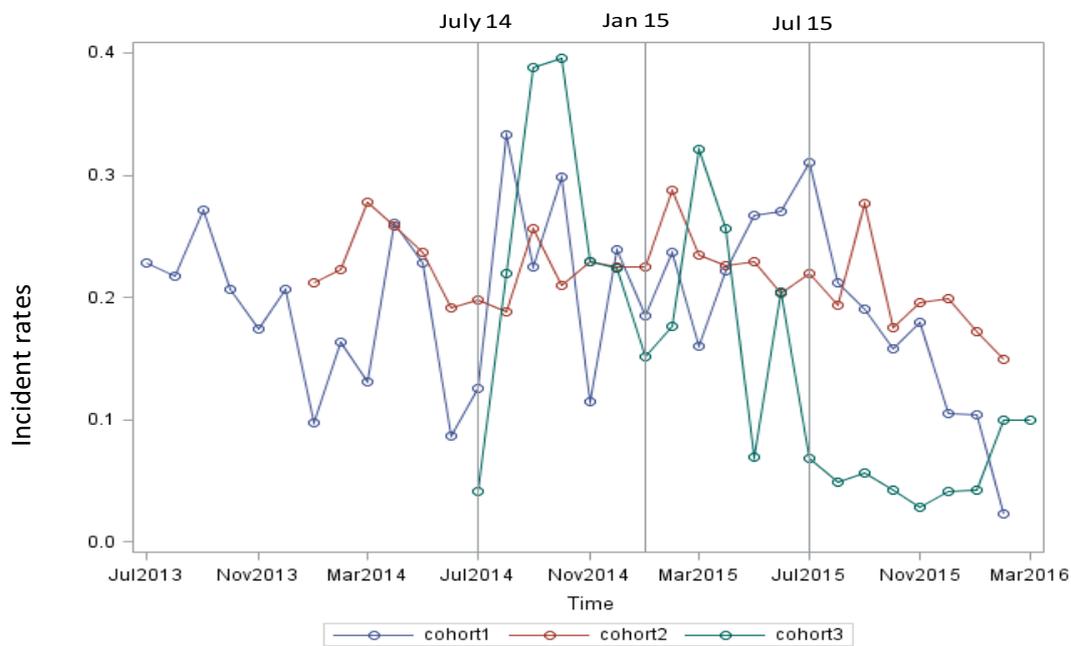


Figure 2.7.3 Run chart of total changes in incidents across all cohorts

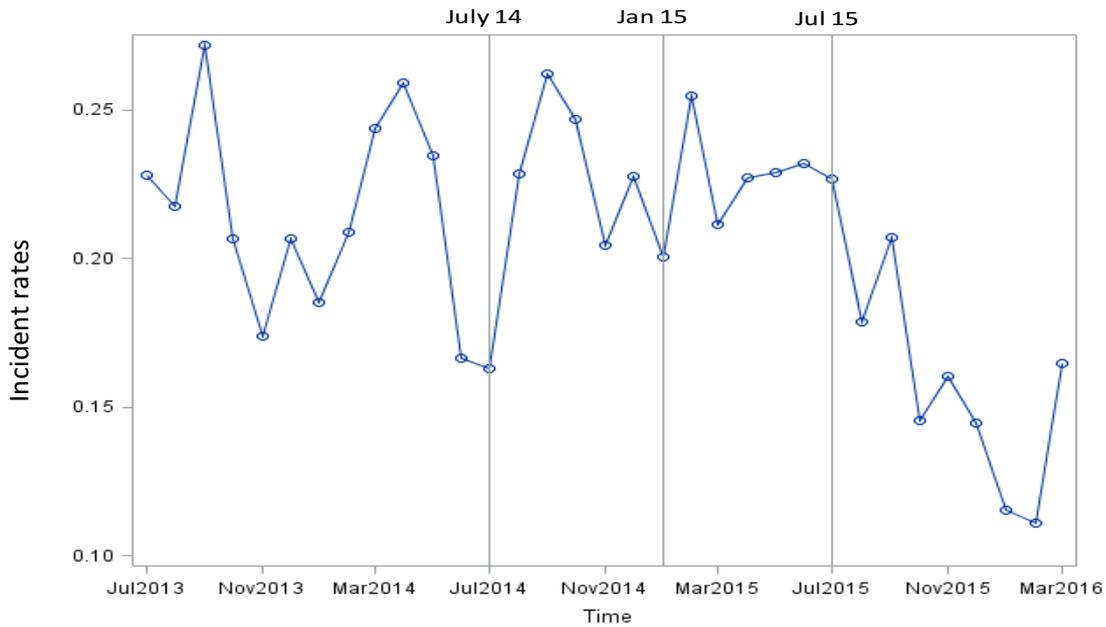


Figure 2.8.Rate of pressure ulcers in care homes that focused on reducing pressure ulcers

Figure 2.8.1 Incident rates by cohort before and after intervention

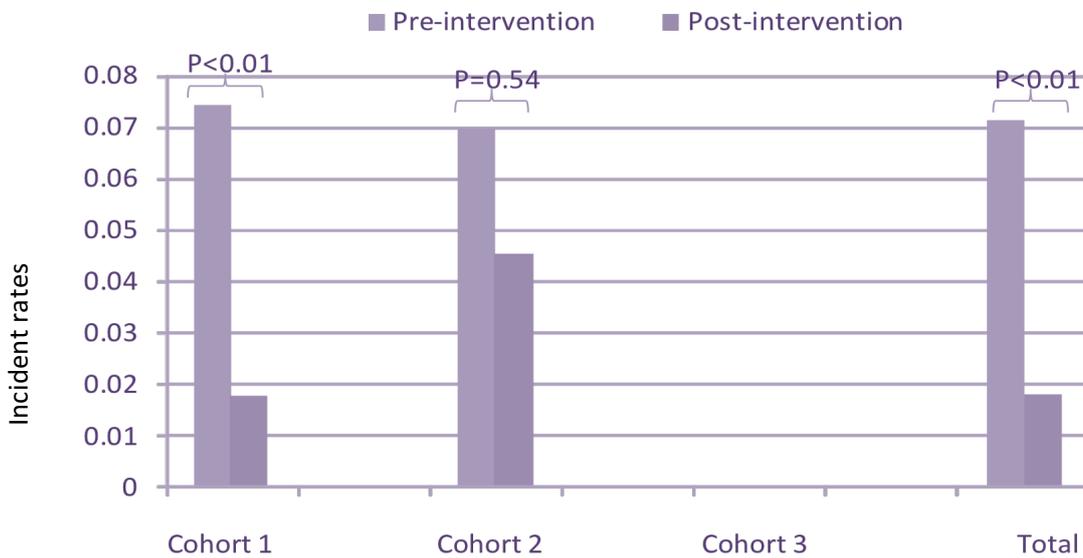


Figure 2.8.2 Run chart of changes in incidents by cohort over time

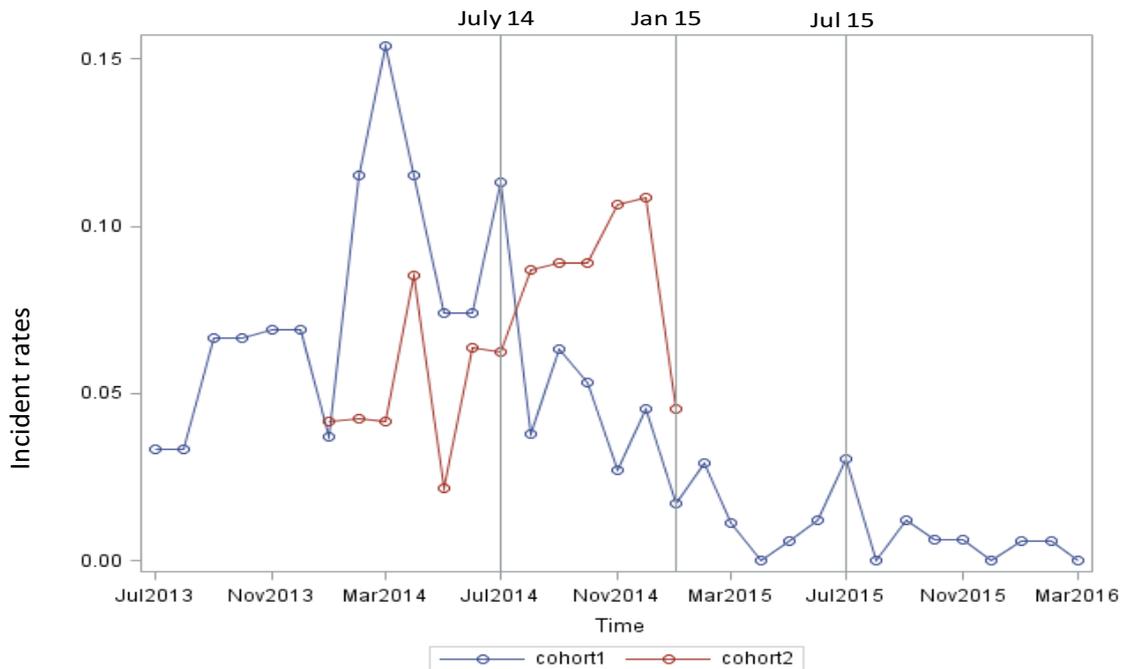


Figure 2.8.3 Run chart of total changes in incidents across all cohorts

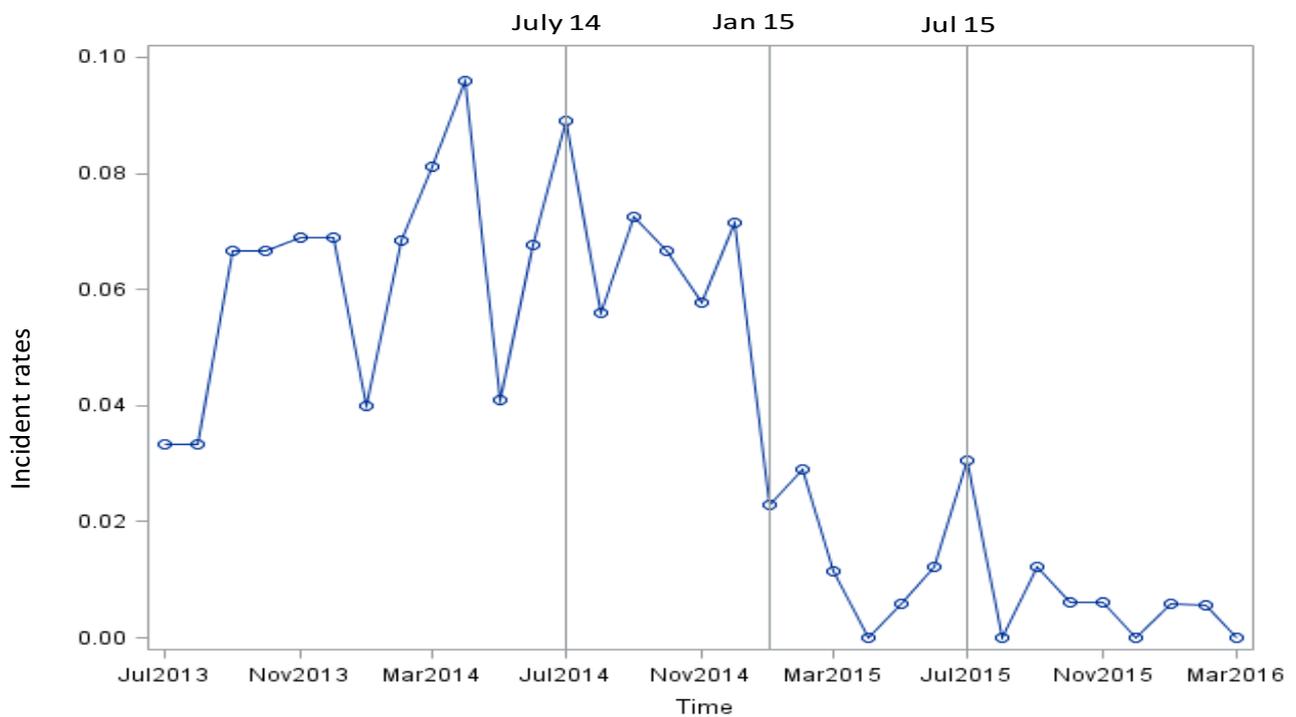


Figure 2.9. Rate of urinary tract infections in care homes that focused on reducing these infections

Figure 2.9.1 Incident rates by cohort before and after intervention

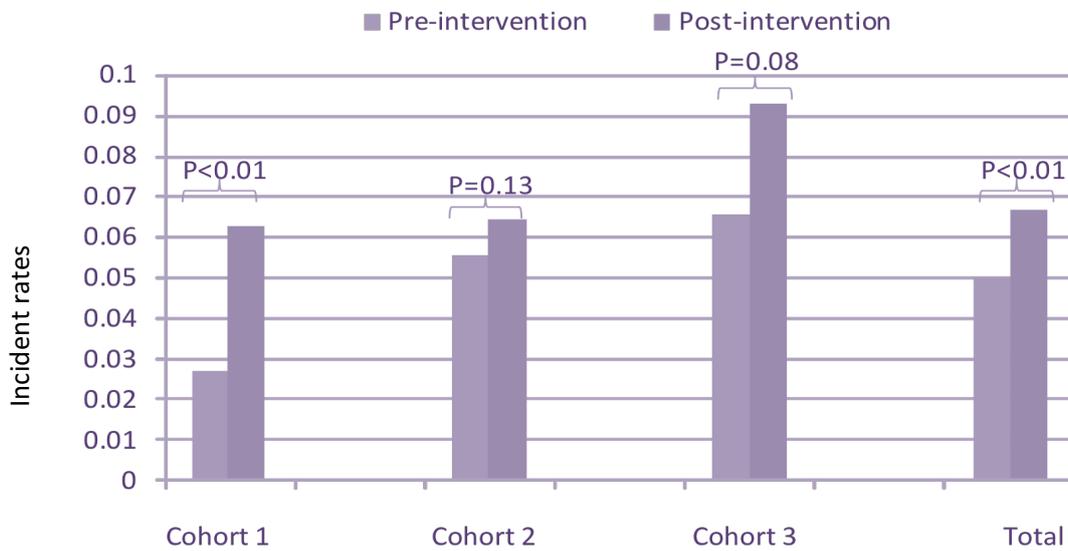


Figure 2.9.2 Run chart of changes in incidents by cohort over time

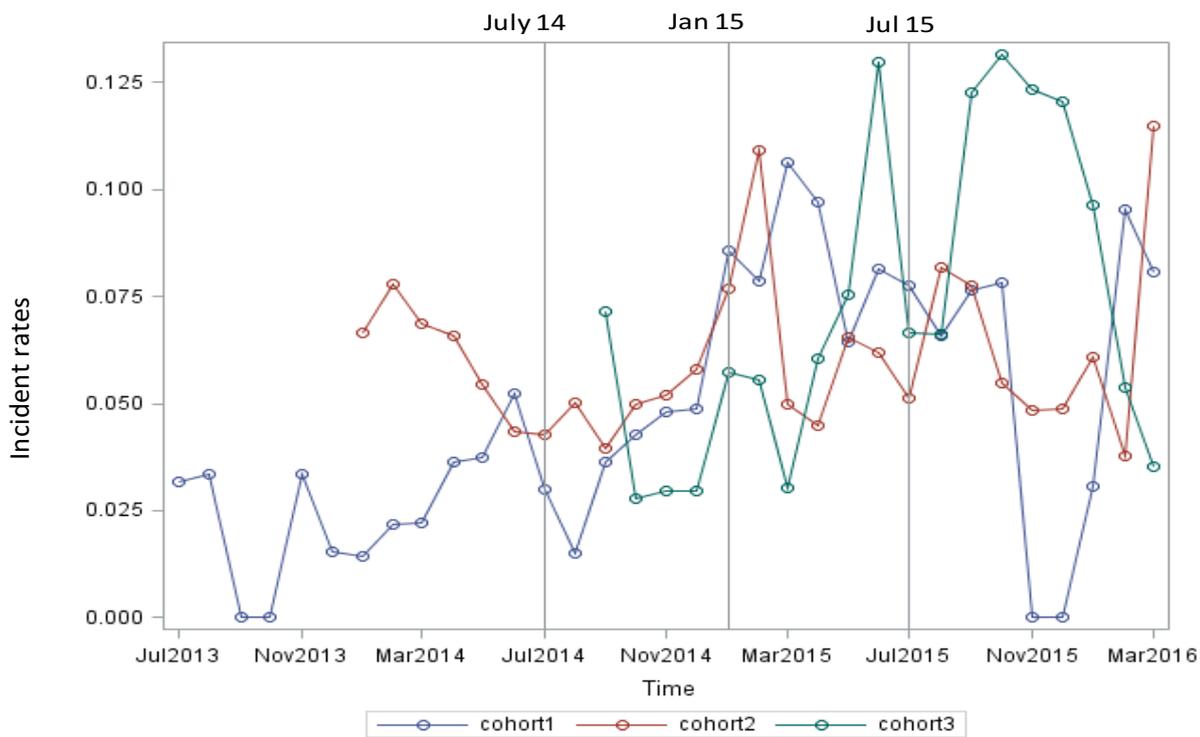


Figure 2.9.3 Run chart of total changes in incidents across all cohorts

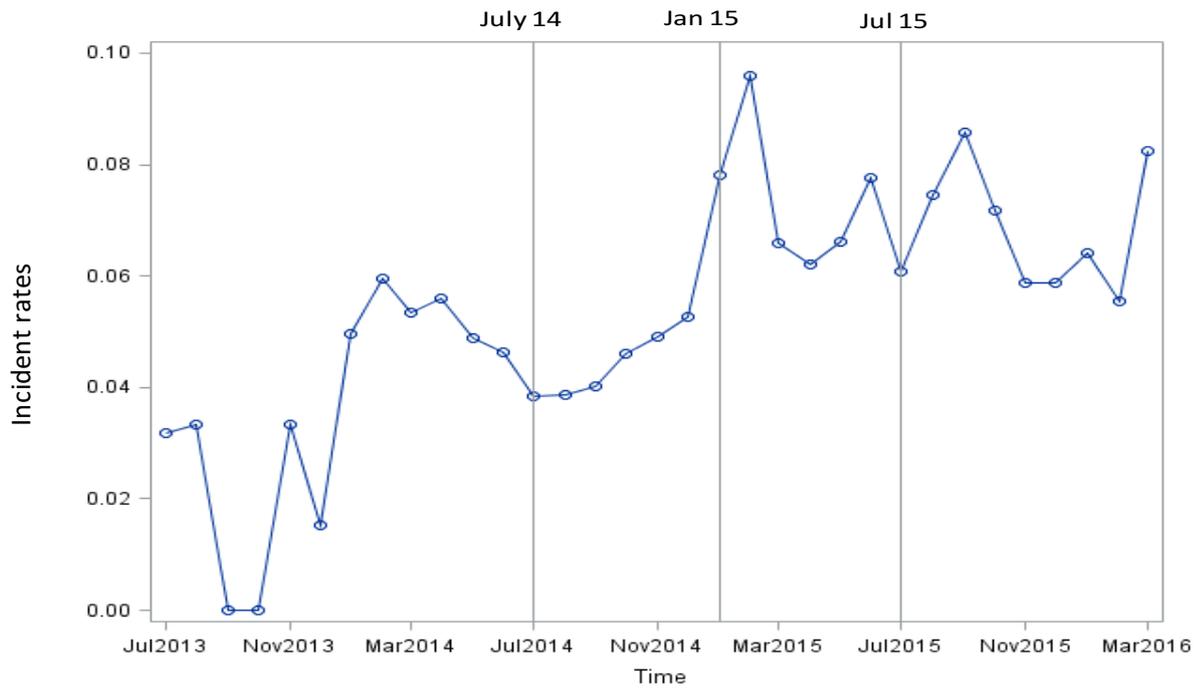
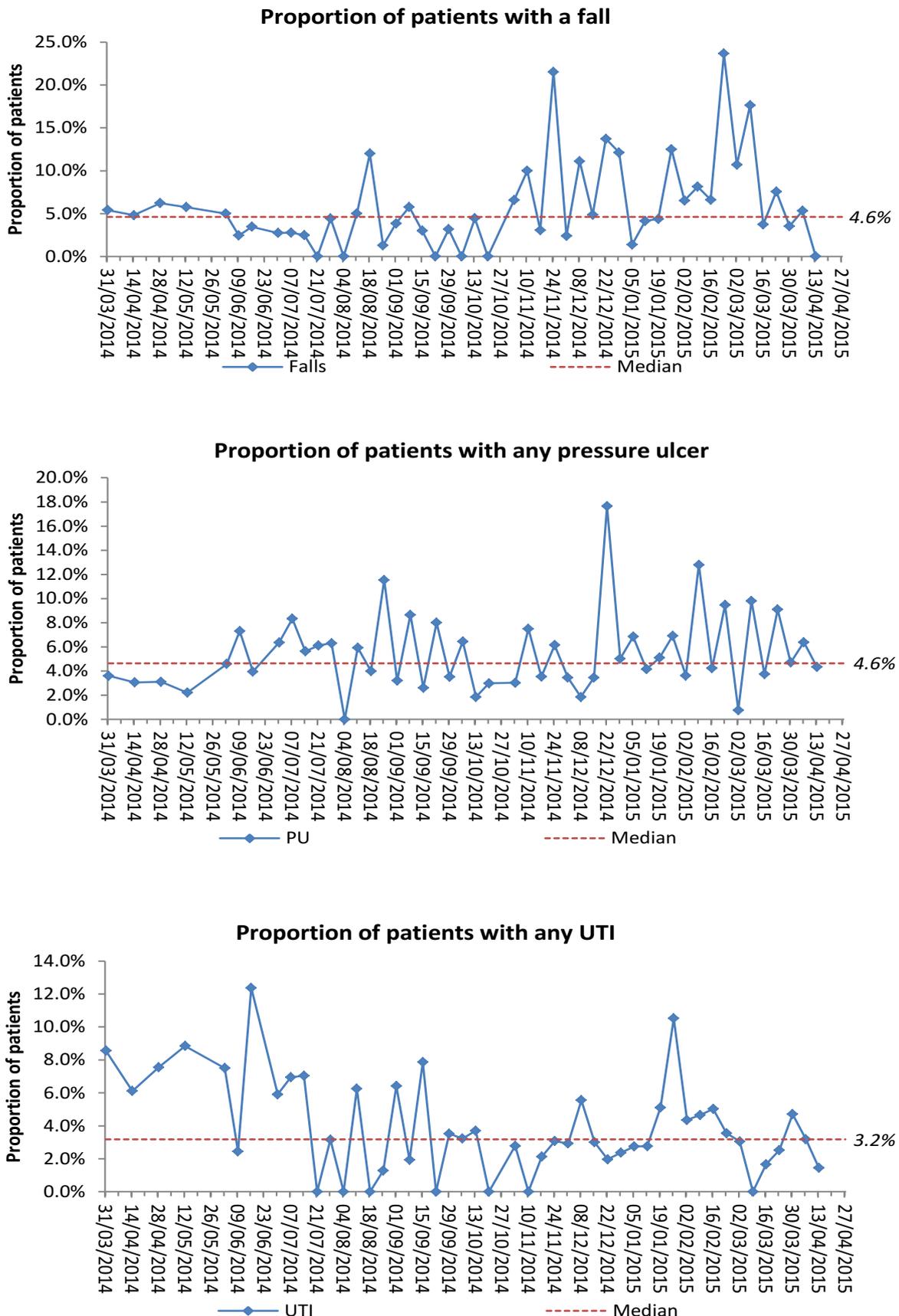


Figure 2.10: Rate of falls, pressure ulcers and urinary tract infections in the NHS Safety Thermometer



2.4 Costs

In the original proposal the evaluation team said that it would carry out a cost analysis to assess whether savings were realised as a result of PROSPER. We collated data relating to the overall direct and indirect costs of running PROSPER and the standardised unit costs for each safety outcome (see Appendix 7). We then carried out a preliminary cost analysis based on the resident outcome analysis presented in the previous section, using all data from all care homes, where available. We reviewed the literature and used standard national data to estimate the cost of individual harms.

The analysis involved the same risks and limitations as that for resident outcomes, together with additional complications around accurate costing of falls, pressure ulcers and other harms. Care homes will treat these harms in different ways, with different associated costs to the system. For this reason, the analysis should be treated with extreme caution, and further work is recommended to develop a more robust picture.

The key findings, presented in Table 2.2 were:

- The overall cost of the PROSPER project was £282,000. This includes a significant component of set up and development of the intervention, that would not be required for future similar projects
- The cost savings across all PROSPER cohorts associated with the reduction in falls and pressure ulcers was in the range £86,000 - £143,000
- These cost savings were offset by the costs of the increased incidence of urinary tract infections, A&E attendances, and hospital admissions, which were in the range of £121,000 - £465,000. By far the biggest component of these were the costs of increased admissions (£100,000 - £442,000) and this may be explained by a general rise in admissions from care homes over the time period of PROSPER, or through more accurate recording of events.

Table 2.2 Costs and savings

	Period	Total residents	No of events	Event rate	Expected no of events	No diff	Unit costs (range)	Cost savings - lower end	Cost savings - upper end
Falls (community)	pre	12884	3058	0.237					
	post	22564	4714	0.209	5356	642	£115-£197	£73,830	£126,474
Ulcers (community)	pre	12367	644	0.052					
	post	22157	858	0.039	1154	296	£43-£57	£12,728	£16,872
UTIs (community)	pre	10934	484	0.044					
	post	20900	1073	0.051	925	-148	£27.8-£29.0	-£4,114	-£4,292
Admissions	pre	11935	297	0.025					
	post	21731	704	0.032	541	-163	£611-£3403	-£99,593	-£442,708
A&Es	pre	11932	312	0.026					
	post	21839	729	0.033	571	-158	£114	-£18,012	-£18,012
Total savings								-£35,161	-£321,666
(PROSPER cost								£282,597)	

2.5 Beneficiaries

This section summarises some of the main beneficiaries from PROSPER. Data for this section were sourced from:

- 127 hours of home visits and observations, including discussions with family members
- 203 individual interviews with care home staff
- 12 discussion groups with care home teams
- 26 meetings, discussion groups and interviews with PROSPER team
- 23 interviews with other stakeholders, including GPs, NHS commissioners and providers and members of the Council

Residents and relatives

Although not all care homes were able to demonstrate changes in resident outcomes (see Section 2.3), some individual residents within care homes experienced improvements in the quality of their care which may have helped them avoid a fall, pressure ulcer or urinary tract infection. Impact on resident outcomes can be found in Appendix 8.

Relatives also potentially benefitted in some care homes by being more involved in discussions about improvements and access to information; perhaps giving them more confidence in the care provided. Ad-hoc informal interviews were undertaken with 13 relatives during site visits by the evaluation team. One-quarter of the relatives mentioned seeing displays relating to PROSPER. One person mentioned taking information provided by the home into account when buying their mother new slippers. One person mentioned feeling that it was more acceptable for them to pour their mother a drink, whereas previously they would have relied on staff to do this. Whilst these are small examples, they point to the potential of the interventions that care homes implemented to have an impact on the family members of residents as well as residents themselves.

Care home staff

Care home staff reported that they benefitted from the training organised by PROSPER, particularly training about substantive issues, such as dementia, falls prevention, pressure ulcers, diabetes and medicines.

A number of home managers and carers were positive about the support provided by the implementation team, saying it made them more confident in applying new approaches and more creative in thinking about different strategies.

Staff in care homes that experienced reductions in incident rates reported feeling proud of their achievements, especially if they were lower than the overall PROSPER average.

More junior members of staff or those that may not traditionally be involved in improvement initiatives, such as domestic staff or maintenance personnel, reported feeling more part of the team and recognised their contribution to resident safety and wellbeing.

Care homes as organisations

Care homes are private enterprises. PROSPER helped these businesses share ideas with other care homes. This is something they might not otherwise have done in a competitive sector.

Some care homes reported that displaying graphs of their monthly data helped them impress the CQC because it was a way of demonstrating that they were actively monitoring for improvement. The CQC demonstrated an interest in PROSPER as an example of a rigorous improvement initiative by making specific reference to the programme in their inspection reports.

Care homes also benefitted organisationally because PROSPER supplied some tangible resources (such as heel mirrors and ferrules), allowing care homes to gain these consumables for free while they tested if they worked in their context.

PROSPER also arranged free training for staff that may not otherwise have been available to care homes.

Working with partner organisations

The PROSPER implementation team involved a wide range of partners, particularly CCGs and NHS community services. Stakeholders from some of these organisations reported gaining more ready access to care homes:

“Having PROSPER gave me a way into homes that I previously found difficult to interact with. They seemed to see me more as a helper than perhaps a hindrance as they had in the past. Although I think there is still some suspicion, the managers could see me in a different light as I was running training for their benefit. Homes often do feel looked down on or blamed for things by the NHS so we’re not going to change attitudes overnight, but it did mean I could interact in a different way. It’s a start.”

[Nurse from community team]

There was a sense amongst managers and frontline health teams that PROSPER had helped to forge links between health and social care, even if this was not evident on a day-to-day basis within the care homes themselves.

It was suggested that in future PROSPER could be jointly branded as a local authority and NHS initiative. One NHS organisation was considering funding PROSPER in their area. Frontline NHS teams suggested that they could play a more active role in delivering training and following-up on improvement progress with a jointly branded initiative. For instance, a falls team or community nurses may be able to monitor the extent to which care homes implement changes following training, providing further accreditation for those who achieve certain milestones.

NHS stakeholders had a number of ideas about ways they could work more collaboratively and add further value if the initiative was run jointly. However there was variation across Essex, due to the number of different commissioners and NHS provider organisations in place.

Essex County Council

Essex County Council appears to have benefitted from PROSPER reputationally by building stronger links with care homes and NHS organisations. The implementation team had a difficult role because care homes traditionally associated the Council with compliance and safeguarding rather than with improvement. By supporting care homes and providing resources, PROSPER reportedly helped some

care homes to have a more positive view of the Council. This was, however, not universal. About 10% of care homes reported feeling that implementation team used information gained during PROSPER in discussions about safeguarding or performance management and to 'report on' them. These care homes felt strongly that PROSPER team members had not drawn a line between their improvement facilitation role and their safeguarding / assurance roles. Specific examples were provided by care homes to illustrate their views. Whilst these are the perceptions of individuals within the care homes, and implementation team members may have disagreed, they were strongly held by the minority of care homes that expressed them. At the same time, the Council team were clear that they had a duty of care that could not be ignored because care homes were involved in an improvement project.

It might be expected that care homes that had taken part in other improvement initiatives run by the Council, such as *MyHomeLife*, would be more open to Council input, having built a positive relationship previously. Whilst these care homes often said they heard about PROSPER from past activities and were more likely to want to engage, it is not clear whether this is because their managers had a stronger commitment to improvement or whether their experience of past initiatives had made a difference. Rates of withdrawals were high in the initial cohorts amongst those who had taken part in previous programmes. Therefore having a relationship with the Council team did not appear to be predictive of success in the programme or longevity.

The PROSPER approach of working collaboratively with care homes had the potential to help change Council culture over time. The implementation team reported that the approach adopted by PROSPER had been rolled out into other divisions of the Council. Some care homes reported that Council team members were approaching them differently, recognising the work they did and taking a more supportive, rather than regulatory, approach. Care homes stated that culture change was needed both in the care homes and across health and social care sectors, and PROSPER may have helped this process.

3. Helpful and hindering factors

3.1 Feedback about PROSPER components

This section examines what helped and hindered PROSPER implementation. Data for this section was sourced from:

- review of 523 documents
- 127 hours worth of visits and observations
- 203 individual interviews with care home staff, including from care homes that withdrew
- 12 discussion groups with care home teams
- 26 meetings, discussion groups and interviews with PROSPER team

Drawing together feedback from all of these sources, the things that appear to have worked well to support improvements include:

- enough **capacity** in the implementation team to provide regular proactive support;
- personable and passionate **improvement facilitators** who understood and respected the care home context;
- maintaining **regular contact** and group meetings for six- to eight-months, recognising that change takes time and that care homes have many competing priorities;
- providing **substantive ideas** and resources to care homes;
- simple introductory training about quality improvement using examples and language **relevant to care homes**;
- **simple tools** that help care homes to use data for improvement;
- providing ways for care homes to **compare** themselves with other care homes (anonymously) to provide reassurance and motivation; and
- providing opportunities for care homes to **share ideas** and learn from each other.

More details are provided in Appendix 9.

Table 3.1 summarises the perceived value of the various components of PROSPER based on feedback from care home managers and staff. The components of PROSPER that people said they valued most were, in order of priority:

1. training about topics such as infection control, falls prevention, diabetes, dementia and medication, especially when training is offered in the home;
2. the *Safety Cross*;
3. monthly mapping graphs tracking progress over time and comparing with others;
4. champions' days and having champions to support others in the home;

5. visits from the PROSPER team to the home; and
6. being encouraged to think in a different way about prevention and sharing ideas with other care homes through visits, champions' study days and newsletters.

Table 3.1: Care homes' perceived value of various components of PROSPER

Key: green - high value, yellow - medium value, red - low value

Component	Type	Perceived value	Comments
Training and visits			
Quality improvement training	Original plan	Yellow	Revised training deemed useful, but concepts not covered in enough practical depth. Many homes took away the philosophy of testing new ideas, but did not use formal <i>PDSA</i> cycles.
Other training	Addition	Green	Training about medicines, diabetes, falls, pressure ulcers etc. deemed useful, but concerns about lack of parity as some homes were thought to have greater access than others.
Champions study days	Addition	Green	Well received due to involving carers, not just senior staff. Practical focus valued.
Community of practice	Original plan	Yellow	More coproduction by homes requested. Limited uptake in some areas.
On-going support visits	Original plan	Yellow	On going visits useful, but thought to be variable and infrequent by early cohorts.
Tools			
<i>NHS Safety Thermometer</i>	Original plan	Red	Not user friendly and concerns about validity. Homes did not feel that the output gained was a good return on the time invested.
<i>Safety Cross</i>	Addition	Green	Visible method deemed useful for recording and getting a wider range of staff involved. Concerns about the 'cross' shape and request to use Safety Stick instead.
Monthly Mapping	Addition	Green	Graphs deemed useful for seeing trends over time and comparing to other homes. Design is limited as not built for improvement.
<i>MaPSaF / Culture is key</i>	Original plan	Red	Wording and format not user friendly. Homes saw potential in assessing culture but wanted PROSPER to facilitate short sessions with staff.
Other resources			
Toolkit of information	Original plan	Yellow	Worksheets deemed useful. Request to revise wording to be more user-friendly.
Knowledge Hub	Original plan	Red	Limited uptake and limited posting of success stories or new tools by the implementation team. Facebook page planned instead.
Newsletter	Original plan	Green	Homes valued seeing success stories from others but would like more detail to allow them to adapt for their homes.
Twitter account	Addition	Red	No homes reported using the Twitter account to support improvement.

3.2 Implementation success factors

Data for this section was sourced from:

- review of 523 documents
- 127 hours worth of visits and observations
- 203 individual interviews with care home staff
- 12 discussion groups with care home teams
- 26 meetings, discussion groups and interviews with PROSPER team
- 23 interviews with other stakeholders, including GPs, NHS commissioners and providers and members of the Council

In addition to the specific interventions tested as part of PROSPER, other implementation factors may have influenced the reported success of the initiative. These include the focus on empowering care homes, the knowledge and supportiveness of facilitators, capacity in the implementation team, taking a staggered approach to implementation to allow the programme to develop over time and building partnerships between health and social care.

Focus on prevention and empowerment

Qualitative feedback suggested that a key reason PROSPER was so valued is that it focused on empowering care home staff to take control. The programme was not about implementing standardised tools or approaches in a ‘top down’ manner, but rather about engaging care homes in thinking creatively and proactively about prevention. This approach was well received by care homes.

“I have absolutely loved it personally. I think it is a brilliant initiative for health promotion as opposed to dealing with something when it has happened. It is so proactive. In social care we are always fire fighting. This is more proactive. We always seem to focus on complaints and what is going wrong instead of being positive. PROSPER is about focusing on the positive which engages staff more.”

[Manager in medium-sized home, run by large corporation]

Supportive facilitators

The motivation and enthusiasm of the facilitation team was crucial for keeping care homes engaged. Facilitators were reportedly approachable, responsive and passionate.

“[Facilitator] is amazing, so supportive. He is so passionate about it all. This would not have taken off so well if it was not for him. His enthusiasm is infectious. He attended the first meeting at the home and responds to all emails rapidly. He visits regularly. I feel really supported.”

[Manager from medium-sized home, run by corporation]

The facilitators were not experts in improvement methodologies or in ways to reduce safety incidents. They learnt as part of PROSPER. The lack of experience did appear to influence the extent to which improvement methodologies were understood and implemented, but the interpersonal skills of the facilitators helped to motivate care homes, regardless of any lack of content expertise.

Having members of the implementation team visit regularly was useful. Care homes that received regular visits reported more changes in culture and processes than those that were visited infrequently. Care homes visited more frequently were also more favourable about PROSPER overall.

"[Facilitator] gave good training and spent time on the floor. This is important to motivate staff because you need to get people on board. The staff gave lots of ideas after they heard a few from [facilitator]. It is the coming in to the home and talking to staff and working jointly what makes a difference. Giving them direct the info rather than going through the manager. Acknowledging the ideas of staff is important."

[Carer from medium-sized home, run by small organisation]

"The success is due to a mixture of both the improvement methods and having the team come in to get people on board from the staff, not just the manager. This is hard to achieve in practice. This home has had lots of staffing issues and safeguarding issues. We have had lots of input from care bundles, skin team, NHS support – so PROSPER is one part of it. Coming and visiting all the time makes a difference."

[Manager from medium-sized home, run by charity]

Improvement team capacity

In the initial stages of PROSPER, the Council had many other priorities and there was reportedly not enough staff capacity to support care homes as planned. This means that the first cohort did either not receive all the planned support or assistance was delayed.

There are a range of reasons for this. Firstly, the programme was new and developing so it took the implementation team time to understand what would work and the challenges faced by the care homes. Secondly, the facilitation team themselves were not familiar with quality improvement methods and tools, so they were learning about the content and may have found it difficult to support care homes. Thirdly, the facilitation team had other priorities, such as dealing with safeguarding issues and a new contracting system for care homes, so staff did not always have a lot of time to devote to PROSPER.

Care homes from cohort two onwards benefited from more capacity in the team and that they had gained more experience in applying improvement methods in the care home sector. However there were still capacity issues, with facilitators unable to visit all care homes regularly and having to prioritise their responsibilities to the individual care homes and the wider programme. Some of the planned implementation activities were given lower priority in favour of wider promotion and dissemination of the initiative.

Staggered implementation approach

Rather than recruiting one large cohort of care homes at the outset, the implementation team decided to roll out the programme in smaller cohorts spaced approximately six-months apart. This allowed the team to focus its limited resource and to refine the tools and techniques used so they were more appropriate and feasible for care homes.

Some care homes noted that the programme schedule worked well, with training followed by on-going support and opportunities to share ideas with each other.

"I think it fits together nicely. First you go to training, then you pull out your numbers, then you start to do changes, then see if it works. For us it works. It all flows together. But it's only now I know that, looking back on it all. At the start the process wasn't clear. If they could maybe do a diagram or explain all the steps so you know what you are aiming towards, that might make all the things fit together better rather than being a mish mash."

[manager from medium home, run by one family / group]

Others suggested that the programme was quite 'bitty' and always being added to, rather than being cohesive. There was a call for more clarity about what PROSPER is, what interventions will be involved and what time homes would be asked to commit.

"I would like to say that PROSPER is a good idea. Anything that is free and helps us homes is good innit? We put up the poster and we use what they give us. They are going to give us more free things. I don't want to sound like a criticism, but it seems it goes from one thing to the next but is not a cohesive, is that the right word? I mean a whole combined thing. It is very good and we like being part of it but somehow it is not really that organised... It's not like it all gels together nicely."

[Administrative staff member from a small home, run by a small group]

"They could have some sort of manual or guidebook telling you what you will be doing and how much time it will involve. Like a help manual for a computer. Then you could look over the whole thing and get an overview. You could see what are coming next and the dates of training. You could know if someone might visit. That's what is missing I think. There are all these things in it to juggle, and they could make a simple overview to tell you what to expect so it is not too overwhelming."

[Manager from a small home]

Engagement with partners

The implementation team reported that the networking and liaison that they did with partner organisations was crucial to success. This includes working with the five CCGs in Essex and community health trusts. The networking led to the development or distribution of simple resources and checklists (such as a falls, pressure ulcers and continence checklists). NHS organisations also delivered training and signposted homes to additional services, such as falls prevention teams, shops where shoe fitters visit homes to measure and provide appropriate footwear and free provision of ferrules for walking frames. As outlined in the 'beneficiaries' section, NHS stakeholders were keen to be more involved in the programme in future and felt they had more to offer regarding training homes, supporting them to implement changes and tracking the quality and extent of implementation over time.

Building on other successes

As outlined earlier, Essex was an early implementer of *MyHomeLife*, a national organisational development and leadership initiative. Homes that took part generally had more rapid success with PROSPER. This may be because homes that volunteered to take part in PROSPER were more innovative and willing to accept a challenge or that PROSPER was building on a history of development programmes within Essex.

Since recruitment was largely based on existing links with care homes, it could be argued that those that were responsive to change were targeted first. The value of PROSPER may be different or it may

have been slower to see change if a random sample of care homes had been selected. In later cohorts where there was more of a mix of care homes, withdrawal rates remained at about the same level as with the initial cohorts, but there were potentially a lower proportion of care homes actively engaging. For instance, a lower proportion of those from cohort four used the Monthly Mapping tool.

Evaluation as a component of the intervention

From the outset, the evaluation of PROSPER was designed to be participatory and formative in nature. At the same time the evaluation team needed to maintain some objectivity.

There was a positive interaction between the care homes, the improvement team and the evaluation team, and much learning about how to undertake participatory evaluation effectively.

However there were also challenges, including:

- differences in approaches to data rigour
- differences in how to interpret data and communicate it to stakeholders
- managing the 'politics' of Council reputation and future commitment to the programme.

The evaluation team sometimes felt that preliminary results were interpreted prematurely or overly positively to enthuse and keep the care homes and the Council engaged, whereas more challenging results had the potential to be dismissed or viewed defensively. The evaluation team also brought issues to the attention of the implementation team which they may not have been open to hearing or which they had already acted upon. The improvement team sometimes questioned a lack of pragmatism within the evaluation team and on a few occasions, criticised them for implementing new ideas without first discussing them with the implementation team.

Despite these challenges, having an embedded evaluation team was positive for PROSPER because it:

- provided additional expertise in improvement methodologies;
- ensured feedback and data was collected independently and could be used to refine the initiative throughout;
- meant that a bespoke data collection tool was developed for care homes; and
- provided care homes with an opportunity to share their views in a 'safe' manner and get expert support with data analysis.

3.3 Implementation challenges

All complex programmes encounter challenges and PROSPER was no exception. In addition to the challenges with specific intervention components outlined in Appendix 9, three other challenges were identified relating to the turnover of care home managers, accounting for the complex context in which care homes operate and attributing successes to PROSPER.

Data for this section were sourced from:

- 203 individual interviews with care home staff
- 26 meetings, discussion groups and interviews with PROSPER team
- 23 interviews with other stakeholders, including GPs, NHS commissioners and providers and members of the Council
- 10 interviews with care homes not taking part in PROSPER

Care home manager turnover

There is a high rate of turnover amongst care home managers and staff in Essex and elsewhere in England.^{24,25} It is estimated that up to 40% of care home staff nationally may leave their posts within the first year.²⁶ This was a challenge for PROSPER because managers and staff may sign-up to take part but then move on, or participate in training and then get another position. This means that care homes had to 'start from scratch' or the involvement in the programme was delayed whilst new managers got established. Up to one-third of care homes in PROSPER experienced a change in senior management or ownership during the course of the initiative.

Maintaining the stability of cohorts as learning sets was also difficult because a small number of care homes wanted to join part way through a cohort (or may have been recommended to join by CQC or Council teams). This made logistics of both implementation and evaluation difficult to manage and meant that separate training was needed for individual care homes. This resulted in some care homes feeling that others were being given special treatment when they 'joined late'.

Context

Care homes are operating in a difficult economic and social context, with high staff turnover, negative publicity and many competing demands. Inspection requirements, changes in local authority contracts, turnover of senior management, mergers and ownership changes all impact on the extent to which care homes had the capacity to concentrate on PROSPER.

When PROSPER was first implemented, care homes were coping with the introduction of a new commissioning contract by the local authority, changes in the *Deprivation of Liberty Safeguards* policy and new regulatory inspections by the CQC. The competitive business ethos of the care homes could also sometimes act as a deterrent to participation.

Attributing changes to PROSPER

Another key challenge was in attributing any changes in outcomes to PROSPER because there were a number of parallel initiatives that could have impacted on the observed changes. Some care homes

24 www.skillsforcare.org.uk/document-library/finding-and-keeping-workers/recruitment-and-retention-strategy/workforceretentionfullresearchreport.pdf

25 www.nmds-sc-online.org.uk/Get.aspx?id=285945

26 www.nursingtimes.net/concerns-over-high-staff-turnover-in-care-homes/1806216.fullarticle

were getting regular visits from local authority or NHS teams separate from, and in addition to, PROSPER.

The lack of a comparison group in the evaluation made attribution difficult. It would have been possible to use a waitlist control design, but during the development and set-up phase this was deemed difficult because of a lack of alignment between the preferences of the evaluation and implementation teams. As a cohort approach was used, waitlist controls would have been possible but was practically challenging and therefore rejected as an option. Better planning by the implementation and evaluation teams early on (in the development phase) may have helped to consider the different options in more detail.

Areas for programme development

During interviews and home visits, all care homes suggested ways that PROSPER could be improved. Suggestions, many of which were partially implemented and some of which are inevitably contradictory, included:

Levels of support

- targeting care homes with specific needs to gain more intensive support;
- providing support to care homes for a longer period of time, e.g. visits or calls;
- providing equal levels of support for care homes, rather than some care homes being perceived to have more contact and help than others;
- being careful not to make it seem as though PROSPER is asking care homes to give more than they receive in return, e.g. giving ideas and data to PROSPER;
- adapting suggestions and interventions to care homes rather than ‘imposing’ interventions, e.g. the skin bundle. This includes trying to integrate ideas with the work homes are already doing; and
- recognising that it can be time consuming for care homes to take part in PROSPER in terms of the paperwork involved, especially for small care homes.

Gaining buy-in

- being clearer about what care homes will have to do and will gain from taking part in PROSPER;
- making it more attractive for care homes to take part, such as saying that it could be used towards CPD for managers or to support CQC inspections;
- recruiting more care homes to take part;
- having a PROSPER team member visit to outline what the programme is in a staff meeting to help staff understand, rather than leaving this for the manager to do; and
- getting the regional managers from large groups of care homes involved in the training;

Promotion and joint working

- raising awareness of the work care homes are doing through PROSPER amongst a wider range of organisations locally, including employment forums, CQC, other Council departments, CCGs and GPs;
- championing issues on behalf of care homes, such as asking district nurses to do root cause analysis of pressure ulcers;

- getting health teams more involved in the programme and working more closely with care homes on prevention; and
- focusing on unblocking gaps and promoting more joined up working with health services;

“We need better relationships with health. PROSPER could help with this, for example so the hospital don’t blame us for things. PROSPER needs to help strengthen relationships between the hospital and care homes. PROSPER could act as a voice for carers and care homes. Get hospital staff to come along to PROSPER training so they don’t look down on us. Put nurses in care homes for one-day so they can see what happens and give solutions.”

[Manager from a large home, run by a corporation]

Communication

- contacting carers directly rather than always going through managers;
- providing regular reminders to carers and managers about things to try;
- giving feedback about what was done as a result of any comments provided. For example, when care homes point out issues with health or care services, care homes would like to know what happened as a result of telling the PROSPER team; and
- having a Facebook page to share photos and tips;

Training

- doing more needs analysis about what training is required;
- including health staff in joint training, such as community matrons and district nurses, so that everyone is learning together and forging better relationships;
- doing more in-home training sessions;
- covering more topics at once during training sessions and recognising how topics are interlinked;
- running additional sessions in more deprived areas of Essex;
- running training updates regularly, e.g. every quarter;
- repeating training topics to reach a larger group of staff;
- running more champions’ study days;
- including training about specific areas such as diet (not just hydration), dementia, and palliative care; and
- focusing on innovative ideas during training as many said the training was at a basic level;

Other content

- providing ideas about how to engage with residents and family members;
- providing more eye-catching posters with pictures;
- providing a contacts directory for the local area, e.g. where to go to get ferrules, local falls prevention team etc.; and
- focusing less on the driver diagrams as care homes often said they were ‘too complicated’;

Data collection

- avoiding using a cross shape for the *Safety Cross* because of religious connotations (using a stick or circle calendar instead); and

- breaking down the Monthly Mapping graphs so care homes can see how they compare to others in their own locality; big and small and nursing versus residential homes;

Using information sensitively

- being careful not to use information about care homes learnt by the PROSPER team in other meetings, for example when discussing safeguarding; and
- being careful to avoid the impression that care homes are being 'judged'.

Almost everyone interviewed said they thought PROSPER should continue and that they would like to remain involved, especially if changes were made so PROSPER offered more on-going value.

4. Implications

4.1 Achieving objectives

Overall, our judgement is that PROSPER has been a success. Individual care homes have reported benefits for their staff and residents and this was collaborated by independent observations and, to some extent, by quantitative before and after data. Table 4.1 highlights the extent to which the programme met the original aims of PROSPER.

Table 4.1: Comparing PROSPER aims with outcomes

Original aim	Progress after 21 months
To improve safety and reduce harm for care home residents across North East and West Essex by implementing a multi-faceted improvement intervention with educational, measurement and culture change components.	<ul style="list-style-type: none"> • A multifaceted intervention with educational and measurement components was implemented. Culture change tools were not prioritised. • PROSPER expanded its reach to cover all of Essex • There was a small but statistically significant reduction in harm for residents using all available data for PROSPER. • There were changes to how safety was perceived.
Co-design solutions with residents and their relatives and introduce new QI training opportunities to build staff capabilities to address safety concerns.	<ul style="list-style-type: none"> • Training was introduced for managers, deputies, carers and other staff. • There was less emphasis from PROSPER on co-designing solutions with residents and relatives, though there are some examples of this taking place in individual homes.
Reduce the percentage of residents that present at A&E.	<ul style="list-style-type: none"> • There was no statistically significant reduction in A&E attendance.
Increase the proportion of residents who are 'harm free' (as defined by the <i>NHS Safety Thermometer</i>).	<ul style="list-style-type: none"> • The <i>NHS Safety Thermometer</i> was only implemented with cohort 1 and offered to some cohort 2. The results did not suggest an increased proportion of residents who are 'harm free'.
Reduce the prevalence of falls and pressure ulcers across care homes.	<ul style="list-style-type: none"> • There was a significant reduction in falls using all available data for PROSPER but not using data derived only from homes which collected before and after data. • There was a significant reduction in pressure ulcers using all available data for PROSPER but not using data derived only from homes which collected before and after data.
Increase staff understanding of, capacity and capability to create a safe environment for residents.	<ul style="list-style-type: none"> • 67% of homes reported a change in safety culture. • 67% of homes reported changes to care processes. • Managers and staff reported increased knowledge about safety issues.
Understand the consequence on health and social care costs.	<ul style="list-style-type: none"> • We performed a preliminary cost analysis but poor data quality makes us cautious about drawing any conclusions.
Establish an evidence base for the intervention.	<ul style="list-style-type: none"> • A detailed evaluation was undertaken. A challenge was attributing changes to PROSPER as other programmes were running. However 50-67% of homes believed PROSPER made a difference.

4.2 Key lessons

This section summarises the key lessons learned from PROSPER.

The importance of context

PROSPER reinforced that improving safety in care homes is a complex task requiring aligned interventions and a strong focus on the needs of residents and staff. The interplay between three elements was key: an understanding of the context, the use of evidence-based interventions and effective implementation.

The care home sector is heterogeneous in ownership, size, resident characteristics, staffing levels and access to support. To be successful, this programme suggests that initiatives need to address the internal and external motivations of staff and the social and technical elements of improvement. It is important for interventions to be tailored to, and relevant for, the care home context and to recognise and target different levels of the system, from the daily care received by residents (micro-level), through to care home structures and processes (meso-level), through to the wider context in which care homes operate (macro-level).

Whilst it is clear that some safety improvement interventions are transferable between sectors and organisations, improvement initiatives need to be adapted if they are to be acceptable and to work effectively. Care homes have very different purposes, philosophies, staffing levels, structures, resident characteristics and workforce capabilities to the NHS and it cannot be assumed that interventions that work in healthcare will automatically be relevant, acceptable or feasible in the care home context. The process of adaptation generates new learning that can be useful to both sectors. For example, the care home sector adopts a more user-centred approach to safety than the relatively risk-averse and professionally centred model of the health sector.

Robust preparation

Planning is key. We have learnt that more attention could have been put into the development phase of both the implementation and evaluation so that issues were ironed out early on and toolkits, driver-diagrams and examples were collated ready for care homes. A six-month funded development period was built into PROSPER but in retrospect this could have been used more effectively. The programme was not adequately staffed during the set-up phase so there were delays in recruitment of care homes, providing information for them, and the development and piloting of toolkits and data collection mechanisms. Similarly, the evaluation team experienced delays in recruiting staff, gaining ethics approval and ensuring that the design and proposed implementation were optimal.

Learning by doing and sharing

PROSPER found that initial training in quality improvement helped to increase the familiarity of care homes with terminology and tools, but teams may learn best through experiential learning. More specifically, they seem to have a stronger orientation towards an oral and relational approach to learning, rather than a written and technocratic one. This may be particularly relevant to staff groups that are less familiar with more traditional approaches to learning. Regular support to implement change in practice helps care homes to apply new knowledge and continue learning.

Care homes taking part in PROSPER also learnt by sharing ideas with each other. The PROSPER team were a conduit for this, helping to break down barriers and competition between care homes.

Not only did care homes learn through PROSPER, but so too did the implementation team. The team's improvement and facilitation skills developed considerably.

Measurement for improvement is fundamental

Care homes have a tradition of collecting data for accountability and regulatory purposes, but there is not a strong tradition of collecting, analysing and interpreting data for improvement. PROSPER helped to change this and care homes responded well to the Safety Cross and graphs of monthly incident rates. About half of care homes said that being able to compare changes over time became valuable and they had a sense of ownership of their data. Care homes also found it motivating to compare their data with the average of other participating care homes.

Coupling improvement methods and substantive (content) knowledge

Whilst change requires a commitment to using evidence-based improvement interventions, introducing quality improvement tools alone is not enough. Developing substantive content knowledge about pressure ulcers, falls and urinary tract infections was also important. The most effective balance between improvement process and content knowledge is not clear from the evaluation.

Be realistic about the effectiveness and effect size of improvement interventions

The evaluation team was clear at the start of the programme that, on the basis of experience and the published literature, whilst some adaptation in processes and culture as a result of the interventions were expected, changes in safety events might be more difficult to demonstrate, and changes in the use of NHS services were highly unlikely. This is a consequence of many factors relating to time, implementation, staff capacity and capability and the methods of evaluation. The results of the evaluation bear out this caution.

Issues with sustainability

Whilst useful for catalysing change in care homes, the expansion of PROSPER into a more holistic support programme raises questions about the practicalities of spread and sustainability when the original funding ceases. Success seems to depend greatly on the skills, capacity and enthusiasm of the facilitation team. The extent to which this could be continued or replicated is uncertain but will hopefully be guided by the findings of this study.

A phased approach to cohorts worked well rather than a 'big bang' approach. The turnover of managers is significant in the care home sector so using the cohort approach helped to reduce loss to follow-up and gave care homes multiple opportunities to take part.

Attribution

It is unclear from the evaluation whether the positive outcomes are a result of introducing improvement methods (as originally planned), the extensive holistic support that was offered, a consequence of other external factors, or a combination of all of these. From an academic perspective, this is an important question and would require a more rigorous evaluative design and more resource to address. From a practice perspective, the pragmatic and relatively light-touch approach to evaluation added value and was acceptable.

Partnerships

PROSPER reinforced the importance of health and social care working together. Although care homes did not report seeing improved joint working, the additional training offered would not have been available without support from healthcare partners and health managers, and frontline teams said they felt they had gained more access to care homes via PROSPER.

In addition, a participatory design to improvement projects has clear benefits. In particular, the role of an evaluation team working closely with improvers, negotiating different bodies of knowledge and expertise adds value but is also challenging to enact in practice

Change takes time

PROSPER suggests that just changing individual staff safety behaviours is important but not enough. For change to be sustained, it is important that this infiltrates the culture of the organisation so improving safety becomes a shared norm. Helping leaders see the value of improvement and empowering a wide range of staff to do things differently can take time. PROSPER has been associated with some improved outcomes but more substantive and embedded change may take longer to achieve, especially amongst care homes that were not visited regularly or felt less involved.

Recognising variation

Around one-quarter of care homes formally withdrew from PROSPER (24%) and only around half of care homes reported that they were actively participating in PROSPER at any one time. There did not seem to be any consistent trends in the characteristics of care homes for which PROSPER was most successful. A mixture of large and small care homes, those owned by large corporations, families and charities, and those in different parts of Essex all gained some benefit. One notable success factor appears to be the motivation and experience of the care home manager. Managers who are open to change, open to accepting support and empowering the wider care home team tended to see greater success more rapidly from the PROSPER approach.

4.3 Sustainability for Essex County Council

Essex County Council has committed to providing financial support for PROSPER through to June 2017. This will include funding for three full-time staff to run the programme, overseen by the current project lead. These resources can be used flexibly, but the aim is to continue a level of support for existing cohorts and bring on three or four new cohorts, each with about 20 care homes, over the next year.

This continuation of the programme will be further supported by existing skills and resources at Essex County Council and in the care homes. Throughout the early part of the programme, Council staff took part in quality improvement training so these skills are now a core capability of many staff, who can in turn provide mentorship and training. Communities of practice for care homes are established and working well, and the network of PROSPER “champions” have the knowledge and skills to support existing and new care homes.

Essex County Council will be assuming responsibility for hosting the data provided by the care homes to monitor and track quantitative impact, a role fulfilled by the evaluation team during this project.

4.4 Dissemination

Throughout the project there was a strong focus on communicating PROSPER's progress and findings, based on a communications plan developed with the UCLP and Essex Council Communications teams (see Appendix 10).

Local communication and dissemination methods included newsletters, emails, events and online videos sent to or made available to current or potential participants in the programme. Additional approaches have been used to raise the programme's profile outside Essex: Over the past two years, Professor Martin Marshall has given over 25 presentations nationally and internationally at conferences and events referencing PROSPER and its impact as an example of participatory improvement and evaluation. The implementation team, led by Lesley Cruickshank, has presented at over 10 events and conferences, including at the Institute for Healthcare Improvement (IHI)/British Medical Journal International Forum in Gothenburg, Sweden.

Multiple publications are planned to share the findings of the project, covering individual components of the intervention (e.g., the updated *MaPSaF* tool), the overall impact of the programme and the evaluation methodology.

Further dissemination will continue to occur through the Academic Health Science Networks (AHSNs). UCLPartners communication team will provide continued communications support through multiple channels, including emails, websites and social media. They will also continue to raise awareness of the programme through the national network of AHSNs. Good relationships have been built with Eastern AHSN, who can also help support dissemination. UCLPartners and Essex County Council will make all tools and templates available on their websites so that others can make use of them.

The positive response from CQC and its references in inspection reports may also act as an incentive to get more care homes aware of and involved in the programme. UCLPartners is increasingly working with care homes and local government and will actively and directly promote the opportunities that the PROSPER project offers. Finally, there is wider learning from PROSPER which might be relevant to improvement initiatives in other settings.

4.5 Conclusion

This evaluation of PROSPER suggests that the programme has been largely successful and has generated new learning about transferring improvement approaches from the health to the care sector. The programme showed that quality improvement approaches could be implemented in a care home context, with careful adaptation and skilled and regular facilitation and support. Box 5 summarises the implications of PROSPER for care homes, for localities and for the wider system.

Box 5: Overarching implications from PROSPER

Implications for care homes

- create space and time for care home staff to learn about new ways of working;
- celebrate often to create momentum and build confidence in staff;
- work as a team, across all staff, and with residents and their families – everyone has ideas to contribute;
- the little things count – using jelly to boost hydration, decorating walking frames so they don't get mixed up; and
- build the content knowledge of staff about care processes, it is as important as improving their knowledge about how to improve

Implications for localities

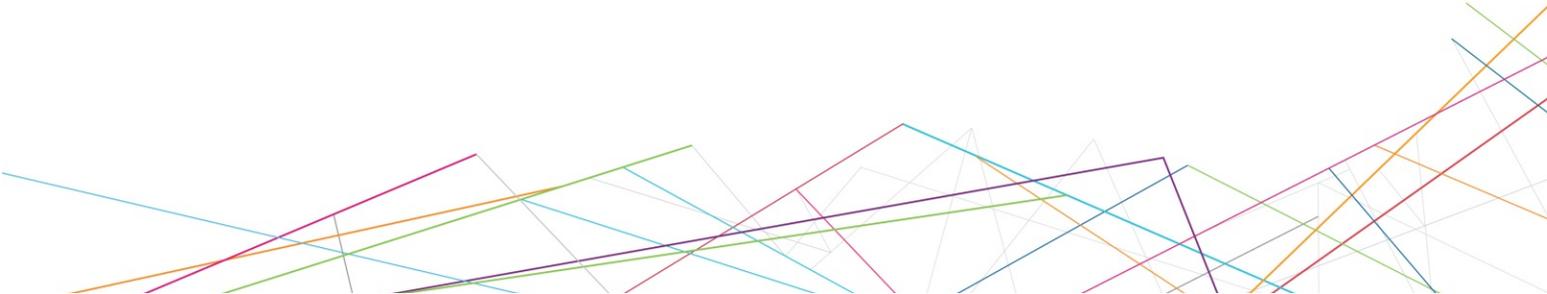
- create an ethos of co-production and collaboration with care homes to build a new kind of relationship, working as equals;
- tailor the programme to the specific culture of care homes, including their desire to learn by doing and their stronger orientation towards an oral and relational approach to change, rather than a written and technocratic one;
- develop improvement facilitators, but use the learning from this project to shape that role, including what they should do and should not do to add value;
- adjust and adapt based on experience and feedback'
- find ways to maintain enthusiasm and sustain participation and improvement; and
- be realistic - It is highly challenging to demonstrate reductions in hospital attendances and admissions as consequence of specific intervention, even when those interventions appear to work

Implications for the system

- adopt a flexible, multi-faceted and context-sensitive approach to improvement, focusing in particular on rapid feedback of data (which is rarely done in care homes) and sharing learning;
- provide opportunities for Care Homes to develop a sense of identity and pride in the health and social care system;
- recognise that safety improvement approaches and tools used in the NHS cannot be transferred to the care home sector without adaptation; and
- support the care home sector to move beyond regulatory drivers for improvement to internally motivated approaches. Work with the CQC to reinforce this through recognising the value of similar interventions and programmes.



Appendices



Appendix 1. Evaluation methods

This appendix describes the methods used to evaluate the PROSPER programme. The overarching logic model and an overview of the evaluation approach are described in the main body of the report.

Programme documentation

The evaluation team read and incorporated insights from 523 reports of home visits, *PDSA* cycles and other programme documents from the implementation team and care homes. This information was used as context and to help shape some of the interview questions.

Collection and analyses of monthly incident rates

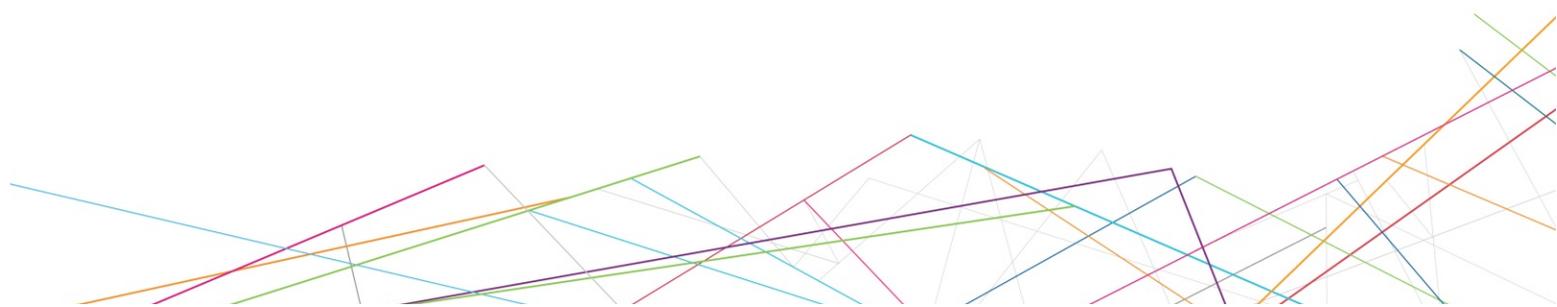
The outcome data and care home characteristics were collected by The Evidence Centre using a monthly data collection form. Data was collected for a period between one-year prior to the intervention month and March 2016. Care homes were asked to provide the number of events for each outcome (falls, pressure ulcers and UTIs) on a monthly basis. Other information included the total number of residents and total number of female residents each month, the care home location and other background information as described in Table 1.4. Although effort was made to encourage care homes to submit the data, not every care home was willing to share their data with the PROSPER team.

Table A.1 shows the number of data collection points from each care home amongst the 64 care homes that provided data. Five care homes (one from cohort one, two each from cohorts two and three) provided data for less than the required six-month period before or after the intervention.

Table A.1. Number of data collection points for each care home

	HOME ID																		
Cohort 1 (from Jul 2013)	22	26	27	29	30	31	34	35	37	40	47	48	50	55	59	60	79	Total	
No of data points	18	27	27	33	13	20	32	4	18	33	21	31	11	11	27	20	9	355	
%	5.07	7.61	7.61	9.3	3.66	5.63	9.01	1.13	5.07	9.3	5.92	8.73	3.1	3.1	7.61	5.63	2.54	100	
Cohort 2 (from Jan 2014)	28	32	36	38	39	41	42	43	44	52	53	54	57	58	75	77	Total		
No of data points	27	27	26	25	30	14	27	5	21	14	14	21	17	3	12	14	297		
%	9.09	9.09	8.75	8.42	10.1	4.71	9.09	1.68	7.07	4.71	4.71	7.07	5.72	1.01	4.04	4.71	100		
Cohort 3 (from Jul 2014)	61	62	63	65	66	67	72	73	74	78	92	95	103	Total					
No of data points	9	21	19	3	9	7	13	10	17	8	16	13	3	148					
%	6.08	14.2	12.8	2.03	6.08	4.73	8.78	6.76	11.5	5.41	10.8	8.78	2.03	100					
Cohort 4 (from Jan 2015)	33	49	76	81	83	84	85	86	87	90	91	93	96	97	98	99	101	102	Total
No of data points	27	25	12	13	11	8	15	1	9	15	11	6	2	2	13	4	1	3	178
%	15.2	14	6.74	7.3	6.18	4.49	8.43	0.56	5.06	8.43	6.18	3.37	1.12	1.12	7.3	2.25	0.56	1.69	100

The rate of events was calculated as number of events divided by number of residents in the care homes, as observed at each month.



Outcome data were plotted as time-series graphs with a one-month interval. The rates of pre-intervention and post-intervention were compared using chi-squared test (i.e. total number of events over total number of residents observed between pre-intervention period and post-intervention period). All statistical analyses were carried out using SAS statistical software (version 9.3).

Cost analysis

Direct costs and cost savings related to the outcomes were collected for the study. The total costs of the PROSPER project and the costs for each component included 1) Programme set up costs; 2) Staff costs; 3) Supply of technical skill costs and 4) Travel costs. For each outcome, cost saving was defined as the cost per additional event avoided. This was estimated using published data at the national level.

We carried out a preliminary cost analysis based on the resident outcome analysis using all data from all care homes, where available. We reviewed the literature and used standard national data to estimate the cost of individual harms. The total cost saving was summarised as overall savings because we were unable to attribute costs to any one outcome. We therefore used the sum of cost savings from each outcome (i.e. the sum of cost savings from A&E attendances or hospital admissions resulting from falls, pressure ulcers or urinary tract infections). For each outcome the cost saving was calculated as number of events avoided at the end of the 6 month follow up X cost for each event avoided. Number of events avoided = expected numbers – observed numbers, where expected numbers = rate of event in the six months prior to the intervention X total number of residents in the six months after the intervention.

Further information about the quantitative analysis of the data is provided in section 2.3.

Care home visits with staff interviews and observation

The evaluation team undertook observations and interviews during visits to care homes to see how the programme was impacting in people's work environments and to track changes in a small number of homes over time. The purpose of the site visits was to observe processes and PROSPER materials in use and to speak with a wide range of staff in their own working environment about impacts of the programme and helpful and hindering factors. The visits took place between August 2014 and April 2016.

Ten care homes were visited (18% of the 57 homes in cohorts 1, 2 and 3), four on repeated occasions. These ten care homes were selected as follows: two care homes from the first cohort were suggested by the implementation team at the outset, based on their knowledge of the homes, including being in different parts of the county, being of different size and ownership type and being at different levels of development. A perceived willingness to take part in repeated visits was also a factor in selecting these two homes, who were visited four times each over the two year period. Two further homes were selected from cohort one by the evaluation team for an individual visit based on differing extents of engagement in the programme and performance on key indicators. Three homes were selected from cohort two and three from cohort three, all by the evaluation team. One of these homes from each of cohort two and three received two repeated visits and the rest in the subsample were visited once. For all ten homes, sampling was purposeful in order to ensure a mix of larger and smaller homes; a variety of family, charity and commercial ownership; spread across the geographic area, and more favourable or challenging performance based on CQC reports, PROSPER

indicators and feedback from the local authority. The evaluation team attended training sessions and celebration events where home team members could be observed to further select homes for visits.

Two evaluators took part in every site visit. Sixty hours worth of observations were undertaken. In homes visited more than once, an evaluator spent time sitting in shared areas such as lounges and staff rooms, observing processes. In every visit, the evaluators made field notes during and after each visit and shared these with the wider evaluation team for input and questions. The notes circulated did not identify the name of homes nor individual staff members.

103 one-to-one discussions with managers, deputies and other staff were conducted during home visits. The approximate proportion of interviewees was 45% owners, managers or deputies, 13% other senior carers, 10% nursing staff, 18% carers, 12% domestic staff (kitchen and cleaning) and 2% others such as maintenance staff. These proportions are approximate because the exact role title was not known in some instances or staff may have had multiple roles. The aim was not to represent the exact proportions of staff working in care homes, but rather to have a mix of junior and senior personnel and carers and domestic workers.

All face to face interviews with staff conducted during site visits were semi structured. Participants were selected by the evaluation team in partnership with the homes, based on involvement in the PROSPER programme and roles. A theme guide with questions about perceived impacts and use of tools was used, in line with the evaluation objectives, but the questions were tailored to the role and level of engagement of each interviewee. This included varying the language style where English was an additional language or where educational level was low. Interviews lasted from between ten minutes and 1.5 hours, again dependent on role and level of engagement, as well as staff availability. The interviews were not taped because care home managers and steering group members suggested that this may be offputting, especially for junior staff who may be concerned that their comments would be heard by management or by the local authority. However notes were taken during interviews by the experienced interviewer, including verbatim quotes. In most instances, one evaluator asked questions and interacted with participants whilst another transcribed as much verbatim as feasible. Interview notes were typed and shared with participants.

Twelve discussion groups were held in care homes during site visits, where carers and domestic staff had an opportunity to share their views. Two discussion groups took part in each of the homes receiving repeated visits and four other sessions were run during one off visits. Focus groups used a similar recording approach to one to one interviews. Participants for focus groups were selected by homes, dependent on staff availability on the visit date. Groups ranged in size from three to eight people. Discussions lasted no longer than an hour. Staff were able to come and go during the discussion as needed to provide care within the home. The discussion groups were used mainly to understand any changes made in homes as a result of PROSPER and any challenges and how these were overcome. In most cases managers were asked not to attend the discussions so less senior staff felt able to speak freely.

Ad hoc discussions with a small number of family members (13) and residents (number not counted) were undertaken during home visits, though this was not a planned part of the evaluation design. Questions for family members and residents focused on how much they were involved with planning improvements and any changes they had seen over time.

Telephone interviews with senior care home staff

The site visits with interviews and observation aimed to gain detailed feedback and observe changes in a small number of homes over time. To gain feedback from a wider range of homes, telephone interviews were conducted with care home managers and senior staff to collect their reflections. Every participating care home and ten homes that had chosen to withdraw during the project were invited to take part in interviews. Participating homes received an invitation three times during the two year programme to allow changes to be examined over time.

In total, 203 telephone interviews were undertaken with staff from participating homes. This comprised 102 staff from 67 care homes (74% of homes from all cohorts), with half of these staff being interviewed more than once. Owners, managers, senior carers and PROSPER champions (staff actively engaged in the programme) were the focus of these interviews because these were the team members most closely engaged with the programme. 66% of the telephone interviews were with owners, managers or deputies and 37% were with frontline staff.

Every participating home was approached by telephone and email to nominate staff to participate and book time for calls. The evaluation team asked that a manager or deputy plus a PROSPER champion (frontline team member) be nominated from each home, in addition to any others that the homes may wish to propose. Given that 103 in person interviews were conducted with a wider range of staff during site visits, it was deemed appropriate to limit telephone interviews to those most engaged.

Telephone calls were more feasible in terms of cost and time for these additional interviews than visiting all 90 participating homes to speak with people in person. This approach was also more convenient for homes as staff could nominate an appropriate time and rearrange with little or no notice if needed, in line with the operational requirements of the homes. In the majority of cases the evaluation team had met home staff during PROSPER events or training, so there was a degree of familiarity before the telephone interviews took place.

A semi structured interview process was used, with a brief set of questions and opportunities for staff to comment on other issues of priority for them. Interviews lasted between ten minutes and one hour, depending on the availability of individual staff and the extent that they wanted to make comments. Where permission was granted, telephone interviews were recorded and transcribed. In instances where permission to record was not granted (two thirds of cases), the interviewer transcribed verbatim notes during the interview. The interviewer was experienced with this approach and was able to transcribe quotes in detail. Brief notes from each call were provided to interviewees to check prior to finalisation.

Ten homes that chose not to take part or who withdrew early after beginning the programme were selected for a telephone interview. Managers from all of these homes consented to a short telephone interview. A semi structured interview schedule was used, focused on the reasons for not participating and suggestions about solutions to any barriers encountered. The transcription approach was the same as for all other interviews.

Observation of programme activities

The evaluation team observed 12 training sessions, community of practice events, champions' study days and other programme events over an 18 month period. A total of 67 hours of observation took place. Field notes were prepared during and after the events. The purpose of attending was to hear feedback from homes about implementation and impacts and to observe the implementation team in action.

Feedback about the events to the implementation team was provided at monthly evaluation team meetings and in writing so that independent reflections about events could be used to help shape revisions to further training and events. Where quotes or stories from care home staff were collected during events, these homes were followed up in writing and by telephone to confirm accuracy and the acceptability of using these stories for evaluation purposes.

Online survey

A before and after survey was used to assess more quantifiable changes in care home managers' perceptions of home safety culture. Upon registering to take part in the programme, managers or deputies from homes in cohorts one to three were invited to complete an online survey. They were invited again in March 2016. The invitation was sent by the evaluation team based on email addresses provided by the local authority. One email reminder and one telephone reminder was provided.

Both surveys were designed by the evaluation team. The 'before' survey asked about components of safety culture explicitly drawn from the Manchester Patient Safety Framework (MaPSaF), in recognition that this tool was selected to support culture safety measurement and reflection for the PROSPER programme. The 'after' survey included the same questions plus additional questions about PROSPER components and impacts. The questions were piloted with a sample of six homes from outside the area to test validity and ease of use. Care was taken to use language appropriate to the educational level of staff.

Matched before and after data were available for 51 care homes (89% of the total homes in cohorts 1 to 3). The Statistical Package for the Social Sciences (SPSS) was used to compare answers before and after the programme. Statistical tests of differences in scores were undertaken, using two-sided t-tests at the 95% level of confidence. Follow up occurred between eight- and 20-months after the initial survey, depending on the cohort start date. The cohort number was used to crosstabulate findings to account for different durations of follow-up. Open ended feedback was coded and analysed using the constant comparative method and reported narratively. Quotes were extracted to illustrate key themes.

Analysis of Manchester Patient Safety Framework data

Initially the implementation team planned to help all homes use the MaPSaF tool to guide discussions about safety culture at several points in time during the programme. The implementation team planned to compare the consensus scores derived from this discussion tool over time as a way of indicating change.

One quarter of homes in cohort one completed MaPSaF using a 'survey approach' designed by the implementation team. The evaluation team reviewed these data to explore preliminary feedback about safety culture. However, the implementation team did not prioritise using MaPSaF as a key

component of PROSPER and for this reason it was less easy to track changes over time using this tool than was originally planned.

Interviews and focus group with the implementation team

Throughout the programme there were discussions between the implementation team and evaluation team. The evaluation team attended four implementation 'project team' and steering group meetings and the implementation team attended all of the evaluation team meetings to provide on-going feedback.

There were 11 additional interviews with the implementation team by telephone and in person. These discussions were unstructured, in response to developmental issues in the programme at specific points in time. Notes were kept during discussions and key themes were circulated for checking by participants. In large part, feedback from the implementation team came from two senior team members.

A discussion group to reflect on successes and lessons learnt was also held with the wider implementation team towards the end of the programme. This included all junior and senior implementation team members. This was facilitated by one member of the evaluation team using a semi structured framework. Notes were kept and circulated for feedback following the discussion group.

Interviews with other stakeholders

Twenty three interviews were conducted with other stakeholders, including GPs, clinical commissioning group, NHS community services, and hospital teams and senior members of Essex County Council. These interviews were conducted in person (5) or by telephone (18). Stakeholders were identified via nominations by the local authority or by homes, in addition to information gained independently by the evaluation team. They comprised representatives from organisations that may be influential for the sustainability of the programme (commissioning teams), organisations that had helped with the delivery of PROSPER training and components and organisations that may work in partnership with care homes to support residents. Purposeful sampling was used.

Potential interviewees were contacted initially by email to arrange an appropriate time. All but one person approached (who had since left their post) responded. Interviews used a semi structured schedule. Interviews were recorded where permission was granted or verbatim notes were taken by an experienced interviewer where permission was not granted (50% of cases). Notes were sent to participants for review.

Compilation and analysis of qualitative data

All of the qualitative data described above was collected by a specialist independent evaluation team with experience in these methods who had worked in care homes previously. A total of three evaluators were involved in collecting these data. One evaluator was involved in all aspects of the data collection, with two supplementary researchers supporting site visits, interviews and transcription where required and as described above.

Qualitative data collection took place on a rolling programme throughout the implementation period. Attendance at programme training and events occurred approximately every quarter for two years, depending on the schedule of the implementation team. Before and after surveys took place

at the cohort inception date and in March 2017. Telephone interviews took place in the first quarter of 2015, third quarter of 2015 and first quarter of 2016. Site visits began in August 2014. Repeated visits took place biannually. Homes that were visited once had visits timed after the end of the ‘intensive’ phase of programme implementation, which varied depending on the cohort of each home. Feedback from the implementation team was provided monthly. Interviews with other stakeholders were largely completed near the end of the implementation period, in the first quarter of 2016.

A large amount of diverse data were collected from programme documents, home visit field notes, event field notes, focus groups, interview notes and transcripts. All notes were input into NVivo software to support the extraction of key themes. Theme analysis was undertaken guided by the underpinning evaluation research questions. The constant comparative method was used to identify recurring themes linked to the programme theory and evaluation questions. Field notes and interview transcripts were annotated with theme categories and subcategories and quotes were extracted to illustrate points and provide a flavour of the perceptions and strength of feeling of participants.

Initially the theme analysis focused on a descriptive precis linked to the evaluation questions. As trends emerged, the analysis explored more complex ideas. The evaluators explored whether themes differed based on cohort number, participant role and seniority, geographic location, home ownership type and other characteristics of the intervention, participants and homes. The extent to which viewpoints differed based on reported engagement with PROSPER and quantitative results was also explored.

The preliminary analysis was undertaken by two evaluators, who reviewed all material in detail. Written preliminary themes analysis was then circulated to the wider evaluation team, alongside access to all raw materials so that multiple analysis perspectives could be included. Throughout the programme the evaluation team met monthly or bimonthly to review emerging themes and consider other avenues for exploration.

During the programme, a steering group provided a sense check about themes emerging and raised further questions to be examined during the qualitative analysis process.

Table A.2 summarises the evaluation methods. The Essex County Council ethics committee approved the programme and research governance approval was granted by UCL.

Table A.2: Methods used to address PROSPER evaluation questions

Evaluation question	Methods
1. What was the PROSPER intervention?	
What was involved in the intervention and how was it implemented?	<ul style="list-style-type: none"> • Observation of PROSPER activities including training, home visits and team meetings • Review of programme documentation • Discussions with PROSPER team members • Telephone interviews with care home managers and staff • PROSPER team represented at evaluation team meetings
2. What impact did PROSPER have?	
Does the intervention impact	<ul style="list-style-type: none"> • Telephone interviews with care home managers and staff • Visits to homes

on safety culture?	<ul style="list-style-type: none"> • Observation of community of practice events • Analysis of <i>Manchester Patient Safety Framework</i> feedback • Survey of home managers before and after PROSPER
Does the intervention impact on safety processes within care homes?	<ul style="list-style-type: none"> • Telephone interviews with care home managers and staff • Visits to homes • Observation of community of practice events • Analysis of <i>Manchester Patient Safety Framework</i> feedback • Survey of home managers before and after PROSPER
Does the intervention impact on resident outcomes?	<ul style="list-style-type: none"> • Before and after analysis of monthly incident rates • Analysis of <i>NHS Safety Thermometer</i> data, where available
Does the intervention impact on costs?	<ul style="list-style-type: none"> • Cost model based on quantitative analysis and additional NHS data about A&E visits, admissions and ambulance conveyances
3. What influenced the impact of PROSPER?	
What helps or hinders the intervention? What would help it embed and be sustained?	<ul style="list-style-type: none"> • Telephone interviews with care home managers and staff • Repeated case study site visits with selected homes • Observation of community of practice events • Discussions with PROSPER team • Discussions with NHS and other stakeholders • Interviews with managers of homes that did not take part

Appendix 2. Ethics approval

EssexWorks.

For a better quality of life

**Research & Evaluation
Commissioning Support**
Essex County Council
E1, County Hall, Chelmsford,
Essex, CM1 1QH

Date: 20 May 2014

Dear Lesley Cruickshank and Prof Martin Marshall,

Research Proposal:

- *Part 1: PROSPER – Closing the gap in patient safety – submitted to Essex County Council*
- *Part 2: Evaluating PROSPER - A quality improvement initiative to promote safer care in nursing homes – submitted to UCL and accepted by Essex County Council*

Thank you for forwarding your research proposal to the Research Governance Group in relation to Part 1.

I am pleased to inform you that your research proposal has been approved under the terms of the Essex County Council's research governance guidelines.

We are also pleased to accept the approval granted by UCL in respect of Part 2 of the PROSPER research project.

May I remind you that your sponsor is responsible for reviewing the quality of the research as it progresses. Should there be any adverse occurrences during the research, your sponsor is required to notify the Research Governance Group and explain what has been done about it.

The Research Governance Group will require an update on progress at six monthly intervals. When the research is completed you must submit a copy of your findings and details of any peer review to the Research Governance Group. It will speed up proceedings if you can submit this in an electronic form.

In the mean time good luck with your research and if you do need to discuss any aspects please contact Katerina Frankova, direct on 033301 30874 or on katerina.frankova@essex.gov.uk.

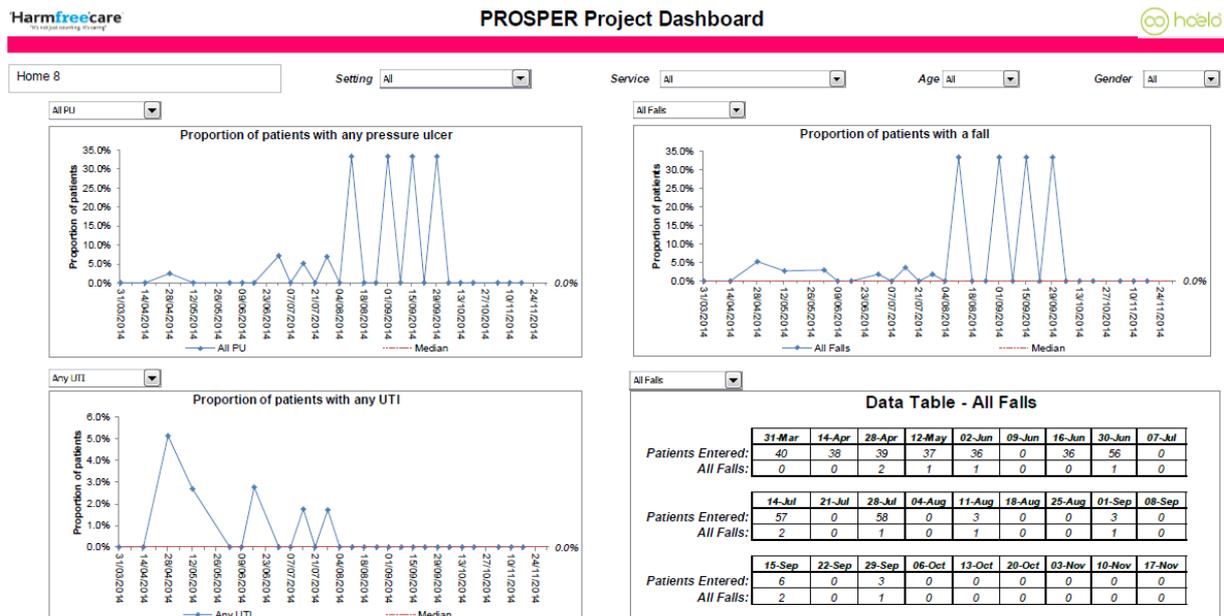
Yours sincerely,
Duncan Wood
Research & Analysis Unit
Chair, Research Governance Group


Essex County Council

Appendix 3. Examples of tools used in PROSPER

This appendix provides visualisations of the types of tools used in PROSPER and the feedback given to care homes to give a flavour of the material.

NHS Safety Thermometer



Safety Cross

SAFETY CROSS/CALENDAR

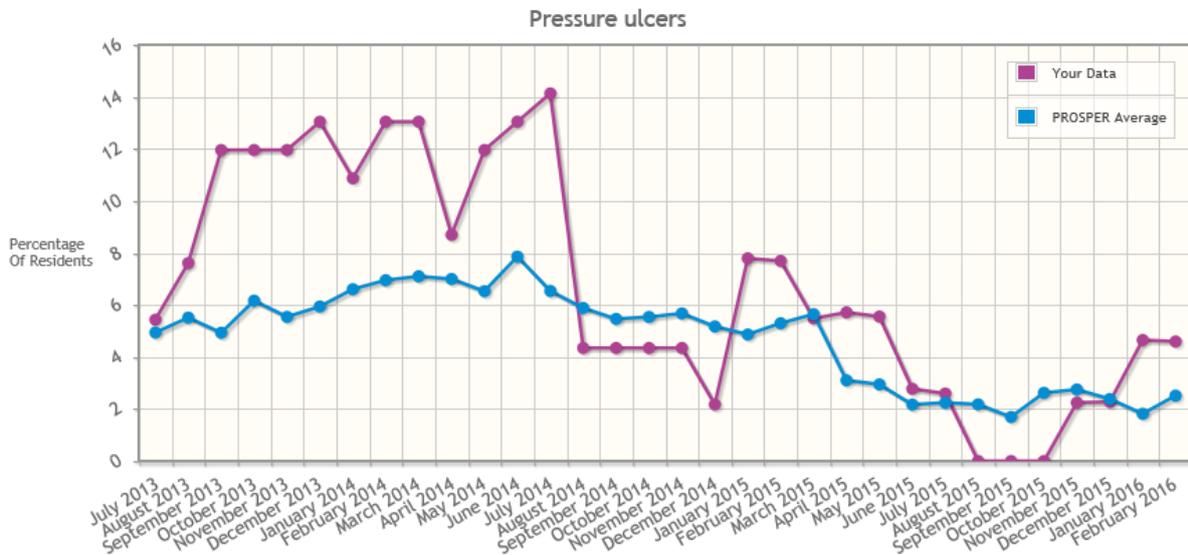
-  **No Falls**
-  **New resident with history of falls**
-  **Falls**

		1		2	
		3		4	
		5		6	
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
		25		26	
		27		28	
		29		30	
		31			

**FALLS SAFETY
CALENDAR**

Year
.....
Month
.....

Monthly mapping



This graph shows the proportion of pressure ulcers out of the total number of residents.

What do these graphs show?

Congratulations on doing a good job of compiling your data and using it to make improvements.

These graphs show how your home has been progressing to improve care. They show how many falls, pressure ulcers and urinary tract infections there have been compared to the total number of residents in your home. The lower the proportion, the better. The aim is to get your graphs as close to zero as possible.

No one else will see these graphs. They are just for you to use. You might want to share with staff or put up on the wall to help spark discussion about what to focus on next. For example if you are doing well with one thing (e.g. low rates of falls) then maybe you will want to focus on making something else even better.

What do the trends mean?

These aren't perfect figures, but the graphs show trends. You can see whether the graphs go down after you start to make changes. We have not inserted the exact numbers because the important thing is the trend over time. Hopefully you will be going down, rather than up. It's normal to go up and down quite a bit.

Comparing with other homes

You can also look at how you are doing compared with other homes taking part in PROSPER. The 'Average Essex' line on the graphs is the average for the 60 homes that have provided numbers so far. If the blue line for your home is below the orange 'Essex Average' line, that means you are doing better than a lot of other homes. If the blue line for your home is mainly above the orange 'Essex Average' line, that means maybe there is more work to do in that area. You could use the PROSPER meetings or the PROSPER knowledge hub website to find out what other homes have tried and think about whether it would work for you too.

It is not a competition at all. Every home is different and every home starts from a different place. The important thing is that you can use the information you have to think about what might need to change to help residents and staff.

MaPSaF/ Culture is Key tool

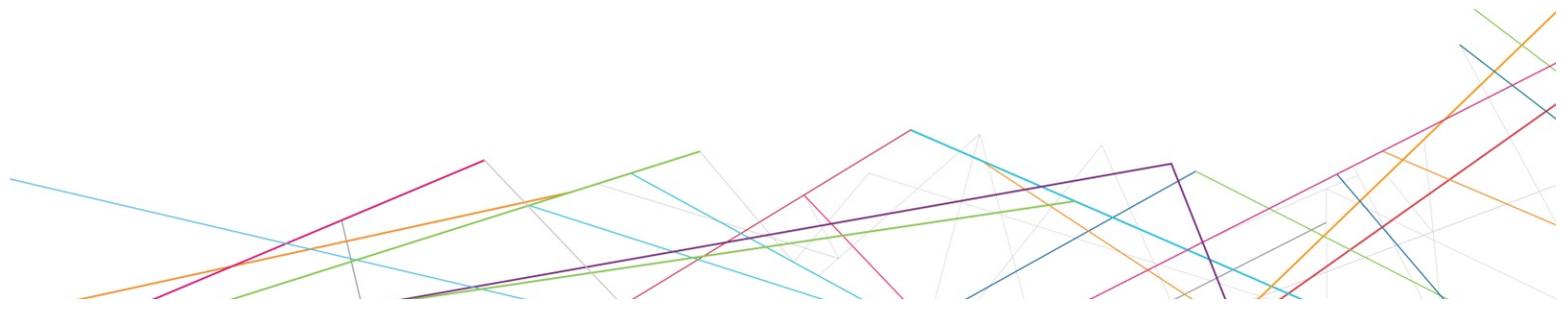
Culture is Key	A	B	C	D	E
<p>1. What is our overall commitment to quality, resident safety and continued improvement?</p> <p>How high a priority do we give to resident, staff and visitor safety</p>	<p>Nobody seems to be bothered about the general quality of care provided. There is not enough time or staff to do things properly or improve things. Not sure if policies and procedures exist. Resident, staff or visitor safety is low priority and not really thought about.</p>	<p>Quality is only thought about when we have inspection visits. Quality audits only take place when something goes wrong. Policies and procedures are there to tick a box, nobody pays attention to them Resident, staff and visitor safety is an afterthought.</p>	<p>Management do things when asked by others like CQC or the Local Authority. We are not asked for our input in how things are done. Quality auditing takes place but nothing seems to change. Policies and procedures exist and are updated but not always followed. Resident safety takes fairly high priority.</p>	<p>Quality of care is very important in how we do things. Everyone is involved in improving quality and included in the decision-making. Quality Audits are used to improved quality and learn from mistakes. A “no-blame” culture is encouraged. Resident’s views and well-being takes priority over company’s self-protection.</p>	<p>There is a real focus on Quality and it is put before anything else. The home is a centre of excellence and continuously looking to improve. Everyone, including staff and residents, are involved and aware of potential safety risks. Resident safety & well-being is constantly on everyone’s minds.</p>
<p>2. How do we learn from the causes of resident safety incidents?</p> <p>Who do we involve following the safety incident?</p>	<p>When things go wrong it is covered up or ignored. Information about an incident is gathered but nothing is done. No changes are made after an incident. There is a lack of training, awareness and risk management.</p>	<p>The home/company sees itself as a victim. There is a defensive blame culture so there is no point in reporting incidents. A quick fix solution is often put in place but there is no support for those involved. Incidents tend to happen again. No one takes responsibility.</p>	<p>It is recognised that systems also contribute to incidents, not just individuals. The home/company says it has a fair culture. An anonymous reporting system is in place but no one feels confident in reporting incidents. There is no ownership of the incident. There is a lack of communication.</p>	<p>Everyone accepts incidents can be a combination of individual and system mistakes. We feel confident reporting incidents and are actively involved with residents and relatives to prevent incidents from happening. Lessons are learnt from incidents. Resident safety is promoted as priority.</p>	<p>Investigations are seen as a chance to learn, with a commitment to share findings both internally and externally. Resident’s views are asked and there is a strong focus on improvement. Systems are regularly reviewed with a high level of openness and trust with everyone involved.</p>

Culture is Key	A	B	C	D	E
<p>3. How do we communicate safety issues within the home and do we involve key people where appropriate?</p>	<p>People are scared to speak up when an incident happens or could happen. There is a strong blame culture. We don't tell people outside the home of safety issues.</p>	<p>There is a defensive culture of it's not our fault. We might change things when something happens but we don't try and stop it from happening in the first place. Basic training is given.</p>	<p>The home has policies and procedures but not sure they are followed. We understand our responsibilities but not the homes responsibility. Information is collected on incidents, falls etc. but we don't know why or what it is used for.</p>	<p>There is an open and fair culture. We are encouraged to be involved in all aspects of safety. We are encouraged to challenge poor practice. Incidents are used for learning. Communication is good and we include residents and others such as District Nurses, GP's.</p>	<p>We work together with others from outside the home such as District Nurses, TVN's, GP's and Social Care to keep residents safe. A no blame culture is promoted. Residents are central to all communication and safety.</p>
<p>4. How does the home manage staff education and training about safety issues and risk mitigation?</p>	<p>We are just seen as bodies. Training has a low priority unless it is mandatory. We feel unsupported by management and it is thought we already have the skills to do the job. Nobody understands or cares that the lack of training or staffing levels increases risk. There is little or no supervision or support</p>	<p>Staffing levels are low and/or we rely heavily on agency staff which can increase risk. Training is available but down to us to read or watch DVD's and ask questions if we don't understand. Focus is on saving money and budgets rather than resident choice, safety or positive risk taking. We have minimum support and supervision.</p>	<p>Training reflects the residents needs and focuses on prevention. Training is not always relevant. Procedures are seen as a tool for management to control staff. We all have a personal development plan. We are somewhat supported by seniors & managers with some supervision.</p>	<p>Some commitment to match people to posts and induction is tailored to resident's needs. Training is well planned and we are encouraged to develop. Training is available for everyone. Management attempts to understand and manage safety incidents with genuine concern about our wellbeing. Staffing levels are good and helps manage risk. We are supported with regular supervision</p>	<p>Commitment is recognised and rewarded. Great confidence in management. We are motivated and supported to develop. Education & training is recognised as important. Everyone understands risk and safety management. Learning is a daily occurrence. Management are fair and treat us consistently. We are well supported and supervised.</p>
<p>5. How do we share good practice and lessons learned? How do we work effectively as a team to improve safety issues?</p>	<p>Covering up of bad practice with a culture of fear. People work in isolation with no responsibility taken for their own actions. Sharing and communication does not happen</p>	<p>Policies and procedures are in place but we are not told what this looks like in practice. Little motivation and commitment to establish a safer environment. We don't work with people outside the home like health or social care.</p>	<p>Systems are in place to collect data but are not well used. Management tells us what to do; we are not asked what could work in practice. Information not shared between others outside the home such as health. Information is not analysed.</p>	<p>Systems and processes are in place and are regularly shared with us. Good practice and learning is owned and shared by us all. De-briefs happen and lessons are learned. Systems and processes are shared with others outside the homes such as health and social care.</p>	<p>Sharing best practice increases motivation and encourages confidence to offer a safer service. Best practice is reviewed and changes are implemented. We feel confident to challenge and share information. A safe environment is seen to be cost effective. We work together with health and social care.</p>

Culture is Key	A	B	C	D	E
<p>6. How do residents and visitors take responsibility for their own safety? How do we support and respect residents' choice & control of positive risk taking?</p>	<p>Choice is not allowed. Culture of not allowing risk, fear of the consequences or are not insured. Staff/residents/visitors are not involved in decisions about risk</p>	<p>Some policies and information are available but with no forward planning. Policies are only referred to when an incident occurs. Personal freedoms are restricted. Risks are discussed but with no follow up actions.</p>	<p>Risks are only looked at when something happens with some involvement of residents/visitors. Information is collected and then not used. Risk management is seen as a tick box exercise and lacks meaning.</p>	<p>Resident safety is promoted. Concerns/complaints and feedback is welcomed. Everyone is encouraged to be on board with positive risk taking with a 'can-do' attitude. Person centred goals are promoted to give independence.</p>	<p>Care is always person centred with evidence of positive risk taking and best interest discussions. Everyone is involved in the review of safety issues. Visitors are encouraged to give feedback and have a role in safety.</p>

PDSA worksheet

WORKSHEET: PDSA Cycle Progress Sheet			
This sheet is used to monitor progress as you complete your PDSA cycle. After completing this progress sheet, you will have a record of what you did, the information you studied, and what you will use from your PDSA cycle			
Complete this part after you decide on the test or observation, including a plan for collecting data.			
PLAN	<ul style="list-style-type: none"> 		
Complete this part as you carry out your cycle. Keep notes on what happens. Before completing this, be sure you are clear on your plan, then move to the do, study and act steps.			
DO	<ul style="list-style-type: none"> 		
Complete this part after you have finished your testing and observations, having gathered your data and reflected on what happened. Include expected and unexpected results.			
STUDY	<ul style="list-style-type: none"> 		
Record what you will use from this cycle or what you will do differently next time. What other tests or cycles will you do?			
ACT	<ul style="list-style-type: none"> 		
Home/Floor/Unit			Start Date:
			End Date:



Appendix 4. Impacts on safety culture

This appendix provides further details about potential impacts from PROSPER on safety culture in care homes. Information was collected for this section using the following methods:

- review of 523 documents
- 127 hours worth of visits and observations
- 203 individual interviews with care home staff
- 12 discussion groups with care home teams
- 26 meetings, discussion groups and interviews with PROSPER team

Changes in how safety is defined

In interviews and discussion groups, about one-third of care homes said that they already had a good safety culture before PROSPER, and some of these felt that PROSPER gave them the tools to strengthen their actions. Two-thirds of care homes reported more fundamental changes in the way they thought about safety. There was a shift towards defining safety as preventing harm for residents rather than avoiding issues raised during inspections and safeguarding concerns. The care homes that were most engaged in PROSPER (and most frequently visited by the implementation team) reported seeing the benefits for improving the quality of life of residents and for empowering staff. These care homes were more likely to begin engaging with a wider range of staff and families, seeing everyone as part of the improvement team.

Although difficult to quantify, observations and interviews suggest that PROSPER supported a shift in how managers and carers in some care homes defined safety. At the beginning of PROSPER, safety was often defined in terms of reducing risk for regulatory purposes, such as avoiding sanctions by CQC or local authority safeguarding investigations. However, as they gained more exposure to PROSPER, senior care home staff were more likely to describe safety as being about improving the wellbeing of residents and working collaboratively as a team. The quotes below from one care home help to demonstrate this shift.

“Safety is about reducing our risk of safeguarding problems and making sure that we are ok when the CQC come. It is about making sure people don’t fall so we don’t get in trouble or don’t get blamed for pressure ulcers, even though they come in with them or come from hospital with them. It is about covering ourselves and trying to do the best for the residents.”
[Manager of small home run by small organisation, at the beginning of PROSPER]

“Safety is all about trying to make life as good as possible for our residents. We work for them and we want to give them a home with dignity and respect. We want them to have quality of life. It is about judging the risks and getting a balance. This is a home, not a hospital. We could avoid all falls by asking people to stay seated all the time but then they would not have good quality of life. So for me safety is about working together, all of us as a team, from the domestics to the carers to the cooks and managers, to help people avoid nasty things but still have a good quality of life. To prevent as much as we can and think in new ways about doing a good job for our residents.” [Same manager, after taking part in PROSPER for nine-months]

Changes in awareness

Managers and carers said they were more aware of safety issues as a result of PROSPER.

“I’ve found that it has made us all more aware. It has brought things to light that we weren’t so aware of, for example, footwear, glasses and finding reasons for falls. It gives you a checklist to think through. We would like to think we would be good without PROSPER but we wouldn’t have that checklist approach and to think of the reasons – it has highlighted the things that we should be aware of.”

[Manager from a small home, run by a small group]

“It’s helped my staff an awful lot. We’re more aware of how to prevent falls. We concentrated on UTIs. Now there are always jugs of juice around. There is a big board in the lounge with tips, the crosses, our graphs and newsletters. This sparks discussion with staff and relatives.”

[Manager from a medium-sized home, run by a corporation]

“It’s very good. It has improved the quality of care at ground level. Our figures show reductions in falls and pressure sores. It reminds us to go back to basics. All the carers and nurses see the Safety Crosses in the units. This raises awareness of what needs to be done every day. We’re empowering the carers so they are involved in what we’re doing.”

[Deputy manager from a large home, run by a corporation]

Changes in how data are valued

A key success of PROSPER was in helping to shift attitudes about data on safety incidents. Nine out of ten care homes reported looking at data more regularly and using it to think about why things are happening and what could be done differently.

“We do PROSPER in every staff meeting. We look at comparisons of falls each month and think about why it has gone up and down. We have only been doing it since February. We actually found more falls – so we blamed PROSPER for making us focus on it more (laughter). But staff have really taken to it and come up with new ideas. Looking at the data all the time has really changed how we think of things because we are focusing on prevention now.”

[Manager of medium-sized home, run by corporation]

“PROSPER helps to change the culture. Staff are spending more time looking at things. Staff are thinking out of the box after seeing monthly graphs.”

[Carer at small home]

A number of larger care homes and those run by corporations suggested that they always collected data, but managers tended to report it to a centralised place rather than using it to guide their own improvement activities in the home. PROSPER helped these care homes take more ownership of their data and use it for improvement. `

....

“The actual measures that have come about as a result of PROSPER have been good. We monitored a lot of the KPIs anyway, such as falls and pressure ulcers, but it has focused the mind, not just for management, everybody is thinking about it now. It has taken it from being only the manager focusing on data to getting out to more staff – everybody really has a stake in it now.”

[Manager of medium-sized home, run by corporation]

Smaller care homes were more likely to say that they did not compile records to track changes over time before PROSPER. Records about pressure ulcers would have been kept in an individual’s care plan (often in paper form), but not drawn together to give a picture for the home overall. Falls may have been listed in an accident register, but little was done with the data to map it over time.

The *Safety Cross* and Monthly Mapping tools introduced by PROSPER helped care homes have a simple way of looking at patterns and celebrating successes.

Another shift in attitudes towards data was evident in expanding the number and type of staff members involved in collecting and using it. Before PROSPER, if data were compiled this was largely done by the care home managers. After PROSPER, care homes began to see the value in delegating responsibility to a wider range of staff. Thus, in about half of cases, deputy managers, senior carers or PROSPER champions were responsible for collating data monthly into graphs. Carers were often given responsibility for filling in the *Safety Cross*, which was displayed prominently on boards within the care homes.

Changes in the range of team members involved

As well as expanding those involved in data collection, another key change in culture occurred in terms of the variety of staff engaged in looking at this information, brainstorming ideas for improvement and implementing them in practice.

“It has helped me to have loads of champions, to support me as a manager. We are involving residents and relatives too. This has helped me as a manager to see different ways of doing things, so it is not just the manager being in charge any more, we’re all part of it together.”

[Manager of medium-sized home]

PROSPER was thought to be valuable for empowering staff.

“It gives carers responsibility and acknowledgement so they can be empowered to try their ideas, so not just listening to the senior on duty.”

[PROSPER champion in medium-sized home]

During discussion groups, carers spoke about how they felt more empowered and engaged. They felt that they had a key role to play in improvement, rather than a more narrowly defined role washing or cleaning. Carers said that this had occurred as a result of PROSPER.

“I think I do an important job. I am just in the kitchen but you know, that’s important too. But now I really like my job more. Lately me and the girls have been giving our ideas. We all listen to each other and we try new ideas. The main thing we learnt is if you try and fail, just try something else. Keep trying to make things better. We all look on the PROSPER board in the

lounge and we come up with new things. They tried my idea ... and it made me sort of proud."

[Kitchen worker in medium-sized home, run by corporation]

This change was most apparent in care homes that embraced the concept of 'PROSPER champions' whereby carers are allocated responsibility for helping other staff learn about prevention – or where champions take on a certain role (as in the case of 'jelly champions' delivering jelly to residents daily as a way of reducing the risk of dehydration). Managers usually choose staff to be champions, perhaps because the person has a special interest in hydration/falls or because there was a desire to develop that person's leadership and facilitation skills. Champions attended PROSPER champions' days every four- to six-months. This addition to the programme reportedly came about because one home implemented champions themselves. The PROSPER team felt this was a good idea and encouraged this approach in other care homes, making the role officially recognised and running specific study days for these people.

Other strategies that care homes used to engage a wider range of team members included:

- discussing ideas for change regularly in team meetings;
- displaying information about PROSPER and resident safety in staff rooms, entry foyers or resident lounges to encourage discussion between staff and with residents and families;
- having a display board where staff, relatives and residents can post comments;
- asking every member of the team to be part of solutions, such as encouraging domestic workers, cooks and carers at different levels to help residents drink more; and
- having a suggestions box in the staff room or public areas.

"We can always do things better. [PROSPER] challenges managers and carers to do things better. It puts the ball in staff's court. One of the things I took from the study days and put into action straight away was to put an ideas box up in the staff room. With this sort of thing you must start at the grass roots. Carers need to own it and so everyone must understand it."

[Manager of medium-sized home run by charity]

A small number of care homes (fewer than 5%) reported more engagement with families as a result of openly promoting their successes.

"PROSPER is promoted in the lounge so people ask about it, so we tell families about it. It is a way of opening up the floor for talking about things. At next relatives' meeting we will discuss PROSPER too."

[Manager of medium-sized home, run by corporation]

A small number of homes (fewer than 5%) said that displaying PROSPER materials helped them have discussions with family members of residents, so that family were seen more as part of the team.

"It is a good way to open up discussions with residents and family. For example why mum needs a new pair of slippers."

[PROSPER champion from a large home, run by a corporation]

Many participating care homes are part of larger groups or corporations. These care homes reported sharing the lessons they are learning with other care homes within the company, thus helping to rollout the ideas and tools.

“We’re part of a small group of care homes but the other care homes are not part of PROSPER because they’re outside the boundary. We tell them what we are doing and share all the materials. We have a regular managers’ meetings of all the care homes and we show them what we are doing and give out copies of everything. They take it on board and use it too.”

[Manager of a small home, run by charity]

“[Corporation] is really big so if we find something that works we cascade that to all the care homes. We can do it really quick. Like we tested an idea here and then reported it to our regional manager. She told all the other care homes and now we’re all doing it. When we find something that works, we tell all our other care homes.”

[Deputy manager of a large home, run by corporation]

Sharing with other care homes was also thought to be particularly useful for expanding the range of ideas and engagement. Though care homes are businesses, home managers and, where available, proprietors and regional managers did not seem to feel that commercial sensitivity stopped them from sharing ideas with others. Although each care home was striving to be ‘the best’, being part of PROSPER seemed to help care homes share ideas to this end, rather than keeping things to themselves for commercial advantage.

“We’ve found it really useful to listen to feedback from other homes. For example, we found out we had a local falls prevention team. She then did assessments on our residents and we made changes in the care plans. We wouldn’t have known about that service if other homes didn’t mention it.”

[Senior carer from small home]

Proactive focus on prevention

Another change in culture is evidenced by care homes reporting thinking more laterally about reducing risks. Rather than being reactive, there was more of a focus on proactive prevention, as reported by about two-thirds of care homes.

“Sometimes we thought falls were unavoidable, but this changed how we thought about things. At first we started off trying to reduce falls at nights. That worked but then it increased the numbers of falls on the late shift, so now we’re looking at doing PROSPER throughout the whole care home. It made us see we could prevent things instead of just coping when things happened. We have some persistent fallers that interventions aren’t working with, but the changes we made have prevented some residents from falling. Staff are more vigilant than they were before. They are actively looking out for ways to prevent falls. At staff meetings I gave them info and put up notices and posters in the office. It’s like we’re all on high alert now.”

[Carer from a large home, run by a corporation]

“It has really helped me as a manager keep a focus on areas that we might not focus on. I found it helped you think about other things that you wouldn’t have considered like footwear, distance between tables and drinks. You might not think of those things as affecting falls, but it helped me think outside the box a bit.”

[Manager from a small home, owned by a small group]

About one-third of managers and senior carers said PROSPER helped them feel more confident that they were doing the best they could to support residents. Although there was some frustration that changes may not always happen as quickly as they would wish, there was a sense that care home teams were working together to minimise risk and prevent incidents.

“I have confidence now that we are really doing the best we can in the circumstances. We can evidence it too, showing what we are doing. It gives me peace of mind to know people are being better trained. It has changed how we think about things.”

[Manager at large home]

Embedding tools and techniques

About 10% of care homes reported extending the use of improvement tools into other areas, rather than focusing only on the falls, urinary tract infections and pressure ulcer priority areas of PROSPER. The tools most commonly adapted for other uses in care homes were the *Safety Cross*, graphs mapping incident rates and making quick tests of change.

“Now we’re ingrained in it, we will keep doing it. We collect data for ourselves now. We are using graphs now for other things but I would never have thought of that before. It needs to be made part of company policy or way of working. Maybe when people sign up to take part, it should be at a company level so the company undertakes to work in that way and keep it going in future.”

[Manager from a medium-sized home, run by a corporation]

“We are using the methodology now for other things too and applying it to other areas. Like we used the values ideas in a meeting with staff to try to improve communication.”

[Senior carer, small home run by charity]

One care home reported that they liked the idea of examining safety culture but did not find the *MaPSaF* tool user-friendly. Therefore they devised their own staff survey and plan to repeat this over time to monitor changes in staff satisfaction and safety culture.

Five care homes reported that they had been invited to speak at events or work collaboratively with other care homes or organisations, and they saw this as a benefit of being involved in PROSPER.

“PROSPER should keep going. It will change culture gradually. It is helping to educate staff more and with working together across health and social care. The company recognises PROSPER as something useful and we get good publicity from taking part. It has opened up doors for us in the activities we do with other homes. It has lots of knock on effects.”

[Manager of medium-sized home, run by large corporation]

Other views

Not all care homes reported changes as a result of taking part in PROSPER. About one-third of care homes stated that they did not see any changes as a result of taking part in the programme or that they would have made changes without PROSPER. These care homes tended to have been visited less frequently by the PROSPER implementation team. They were also largely from cohort one and two. This may be because cohort three and four homes were still engaged in the programme when interviewed whereas contact had dropped off with many cohort one and two homes. It may also be a function of the programme being strengthened over time. Cohort one homes in particular were asked to use tools such as the *NHS Safety Thermometer* and *MaPSaF*, which they found difficult and of limited value.

“We aren’t doing anything differently. Well we are using the computer for the numbers and we filled in the survey, but that has not changed what we do... We always wanted to make the risks small for our people. We always tried new things. Nothing has changed in the way we think about things but it is good to have the training.”

[Manager of small home, run by small organisation]

“I don’t think PROSPER helped us. We had almost no contact. They have rung us once in the last six-months and not visited. It seems like we are always giving to them; giving them our data and our ideas of how we’re improving and we’re not getting anything back. We haven’t changed how we think or do anything because of them because they have not been in touch with us.”

[Manager of a large home, run by large corporation]

Appendix 5. Impacts on safety processes

This appendix provides further details about potential impacts from PROSPER on safety processes and behaviours in care homes. Information was collected for this section using the following methods:

- review of 523 documents
- 127 hours worth of visits and observations
- 203 individual interviews with care home staff
- 12 discussion groups with care home teams
- 26 meetings, discussion groups and interviews with PROSPER team

This appendix repeats some of the concepts highlighted in Appendix 4 regarding safety culture because behaviours are related to safety culture and attitudes, so the changes are interlinked.

Testing ways to reduce harms

Apart from care homes that had started the initiative within the past two-months, most care homes taking part in PROSPER said they had tried an activity to reduce harms. Overall, between half and two-thirds of care homes interviewed at any one time said they had tested new ways to reduce harms.

“We were talking about how we could adapt the red trays used in hospital, you know where people with red trays have to be given more drinks or a certain type of food or whatever. Well then we started using red doilies for hydration, to remind us to give those people more drinks. We’re starting to rollout that idea through the whole home. But we didn’t want it to stigmatise some people so we use coloured doilies but we give everyone a doily, not just some residents. Red is still used for extra drinks, but other colours are used too so other residents aren’t left out.”

[Manager of medium-sized home, run by a large corporation]

“We had a ‘come dine with me’ competition as part of nutrition week. Residents went and visited other homes. Five homes took part. We all got good publicity, which is priceless. This was unique because it involved five different corporate companies that came together for residents. We put aside seeing each other as competitors and just focused on doing something fun and helpful for residents.”

[Manager of medium-sized home, run by a large corporation]

Box A1 lists examples:

Box A1: Examples of changes to improve safety tested by care homes taking part in PROSPER

Staff

- assigning some staff members as ‘champions’ to remind other staff about tips and keep harm reduction at the forefront of people’s minds;
- having ‘jelly champions’ to encourage residents to hydrate more through eating jelly;
- taking part in training about reducing harms such as falls prevention or infection control; and
- incorporating new ideas into moving and handling training;

Events and activities

- running an ‘Alice in Wonderland tea party’ to promote liquid intake which became a community event, with participants from other care homes and other professionals invited;
- ‘Humpty Dumpty day’ to promote falls prevention;
- undertaking activities as part of national campaigns such as dignity awareness week and hydration week; and
- providing activities to promote greater strength and flexibility such as chair line dancing, chair tap or chair ballet every week;

Tools

- using compact mirrors to help carers check for pressure ulcers, including on people’s heels;
- using coloured drink coasters or cups to help identify people who may need to drink more so staff and relatives are reminded to offer people drinks more frequently;
- using charts and display boards to create friendly competition between units or wards;
- marking time of day, resident name and other details on the *Safety Cross* to help identify trends over time;
- using skin inspection sheets, fall’s checklists, comments boards with helpful tips and other aids to remind staff about good practice; and
- having prizes awarded by the parent company for 100-days event free.

Using information for improvement

As outlined in the section about safety culture, using information for improvement was a significant change in many care homes. Care homes reported using more tools to look at data about incidents and spending more time analysing the information and planning actions as a result.

“We were tracking things before but were not using the information to really do something to get better outcomes. We had information dating back five-years but never did simple things with it like tell relatives where to buy good slippers. A big change now is that we are not just collecting numbers, we are using them to make things better.”

[Manager of medium-sized home, run by large corporation]

“The monthly charts make a difference because it shows the trends and where we are going so we take more time to reflect on things. We do audits anyway but this helps us tie things together. For example, is falls related to UTIs? We saw that the number of falls coincided with the number of urinary infection so we are looking at the reasons behind things now because of those monthly graphs.”

[Carer from small home, run by small organisation]

Care homes said they found it useful to display information visually, such as using the *Safety Cross*, Monthly Mapping graphs, posters with information about reducing harm or other displays.

For example, one home created a visual display with the *Safety Cross* and their falls reduction checklist in the dining room. Staff said that this helped to remind them about key actions. It also meant some relatives got involved, particularly in terms of buying different types of slippers. This home used the *Safety Cross* to record the number of falls each day and the time of day they occurred. This helped the team understand when falls were most likely to happen and take steps to address them. The staff noticed that falls often occurred immediately after breakfast so kitchen staff started to spend more time with residents once breakfast had been served. The home reported that this helped to reduce the number of falls at this time of day. This was supported by a review of the falls rates kept by the home.

Overall, care homes reported recording things more robustly as a result of what they learnt from PROSPER. A number noted that their improved record keeping might be useful when presenting their work to regulators and commissioners.

“Carers are more vigilant about checking pressure ulcers and recording what we are doing. We can prove we are doing it. With CQC inspections this will be good, so they can see what we’re doing. Before we might have done things here and there but we never recorded it well. Now we keep good records of everything and look back on it and use it to plan more.”

[Senior carer at medium-sized home, run by corporation]

“We will continue to do the monthly data table and adapt it to include medications as well (like how many people are on antibiotics or supplements). And we will keep doing body maps for pressure ulcers. That all helps with our accountability when we look at who are the good carers and we can also prove to inspectors that we have been doing the work now.”

[Manager of small home, run by small organisation]

The CQC inspection reports for a number of care homes mentioned PROSPER favourably.

However on some occasions, care homes reported proudly displaying their PROSPER information and records of tests of change to CQC inspectors who were perceived not to be interested – and who did not comment on involvement in PROSPER in the home’s inspection reports.

Appendix 6. Results from the care homes with both pre- and post-data for 6 - and 12-months

Seven care homes from cohort one, eight care homes from cohort two and three care homes from cohort three had pre- and post-data for 6 - to 12-months in either side of the intervention start date. Table B.1 shows the number of events and rate for each outcome. The results of the six outcomes by cohort are shown in Figures B1-B6.

Table B.1. Number of events and event rates among the care homes with both pre- and post-data

	No of events	No of residents	Rate of events	p value
Falls				
pre	1841	8734	21.1%	<0.01
post	2117	9070	23.3%	
Pressure ulcers				
pre	464	8383	5.5%	0.49
post	501	8669	5.8%	
UTIs				
pre	309	8304	3.7%	<0.01
post	412	8669	4.8%	
Hospital admissions				
pre	170	8375	2.0%	<0.01
post	258	8502	3.0%	
A&E attendances				
pre	175	8323	2.1%	<0.01
post	290	8502	3.4%	
Hospital admissions due to a fall				
pre	74	8925	0.8%	0.07
post	97	8875	1.1%	

Figure B1: Rate of falls in the PROSPER care homes

Figure B1.1 Incident rates by cohort before and after intervention

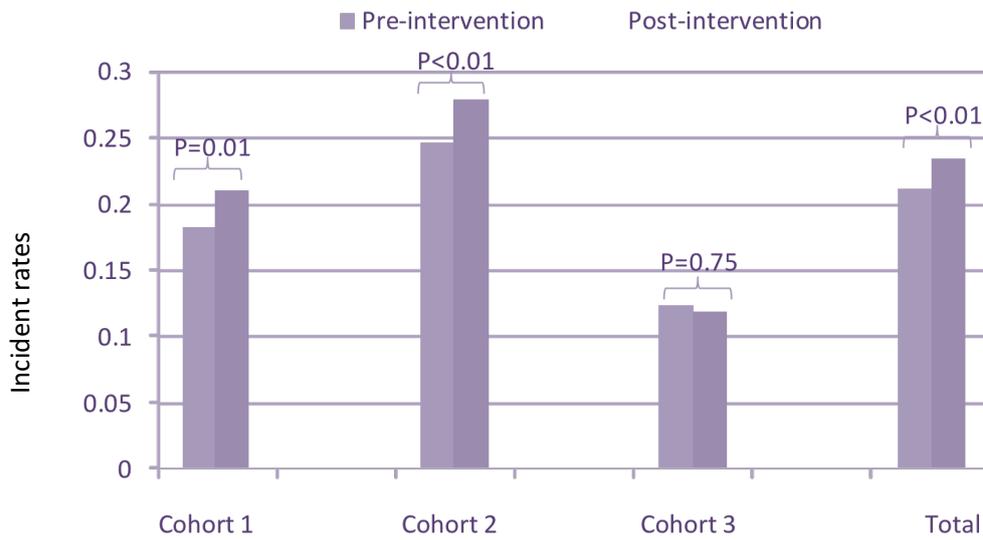


Figure B1.2 Run chart of changes in incidents by cohort over time

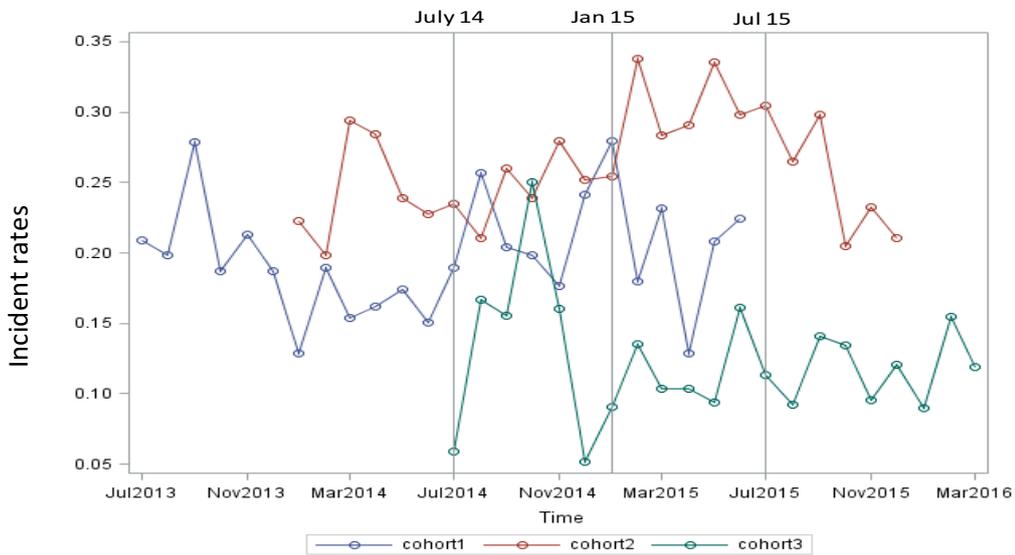


Figure B1.3 Run chart of total changes in incidents across all cohorts

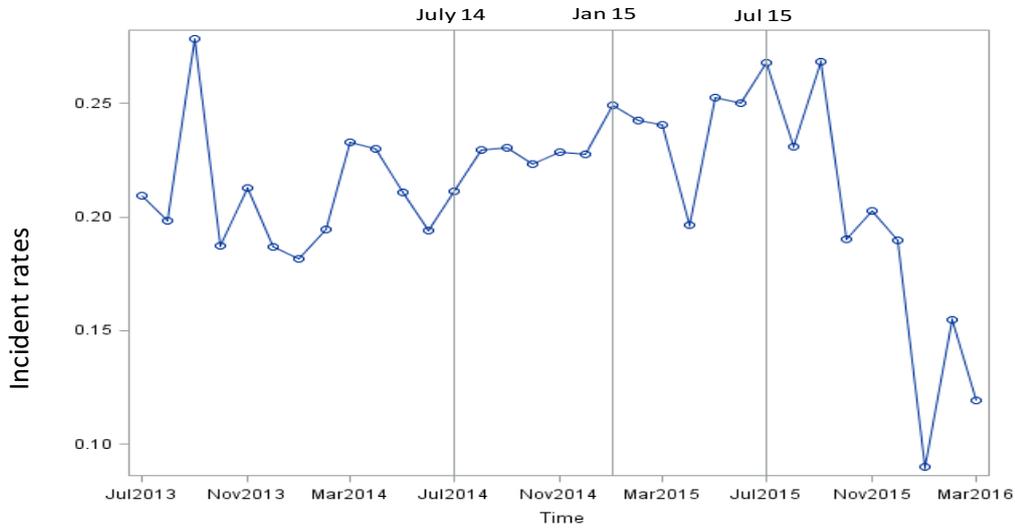


Figure B2: Rate of pressure ulcers in the PROSPER care homes

Figure B2.1 Incident rates by cohort before and after intervention

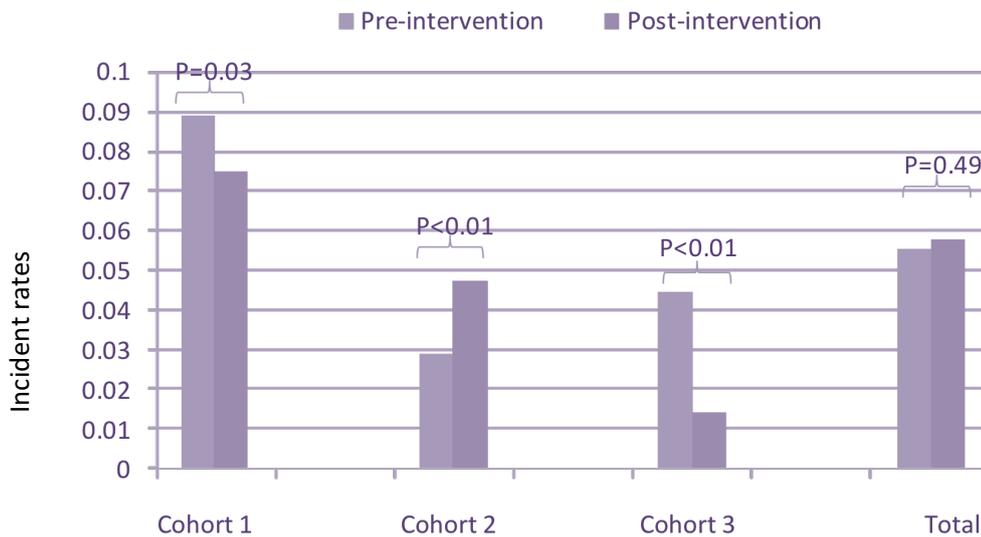


Figure B2.2 Run chart of changes in incidents by cohort over time

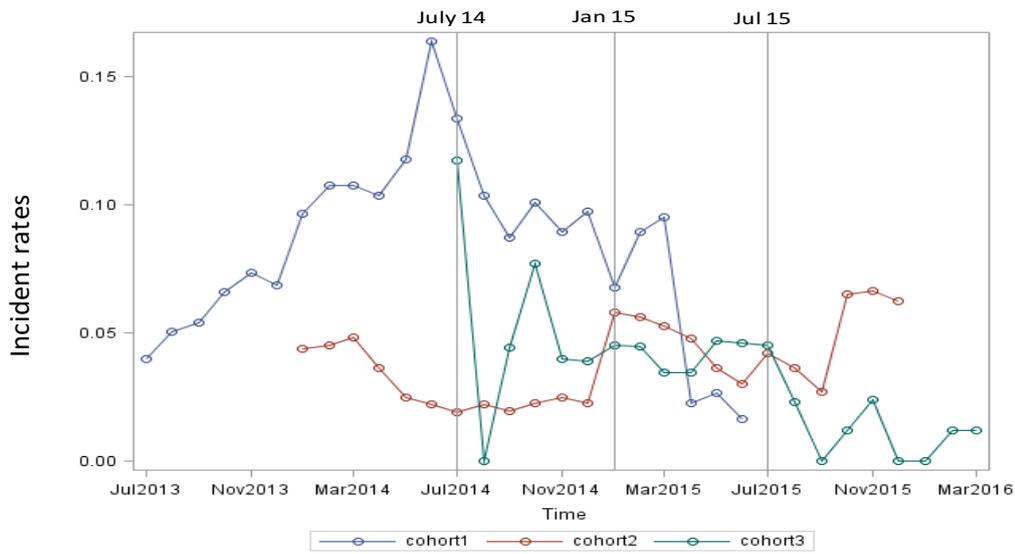


Figure B2.3 Run chart of total changes in incidents across all cohorts

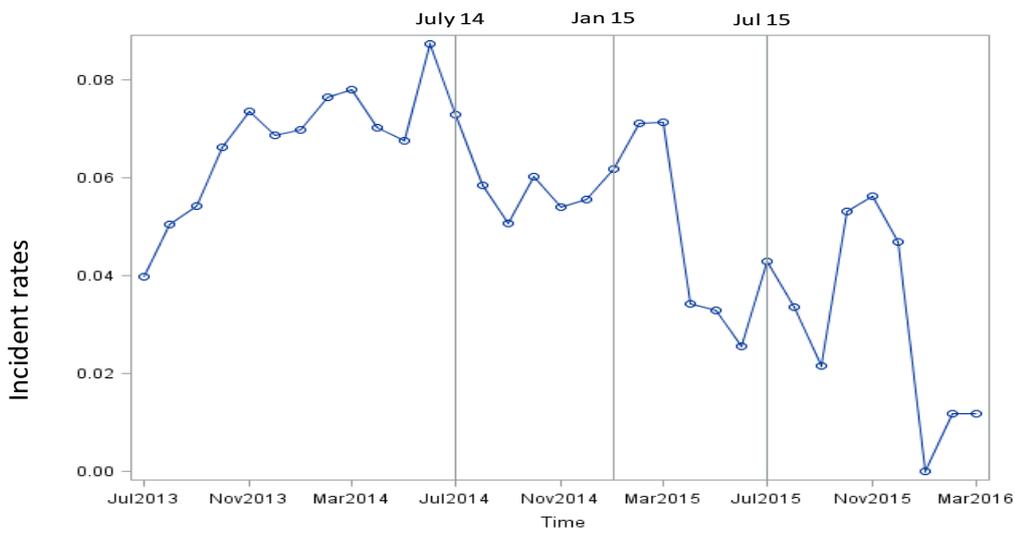


Figure B3: Rate of urinary tract infections in the PROSPER care homes

Figure B3.1 Incident rates by cohort before and after intervention

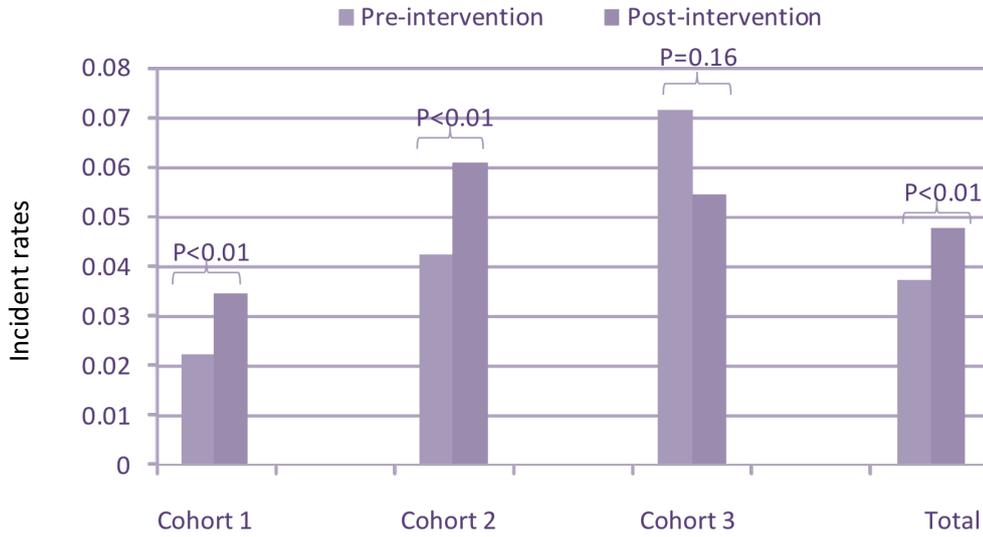


Figure B3.2 Run chart of changes in incidents by cohort over time

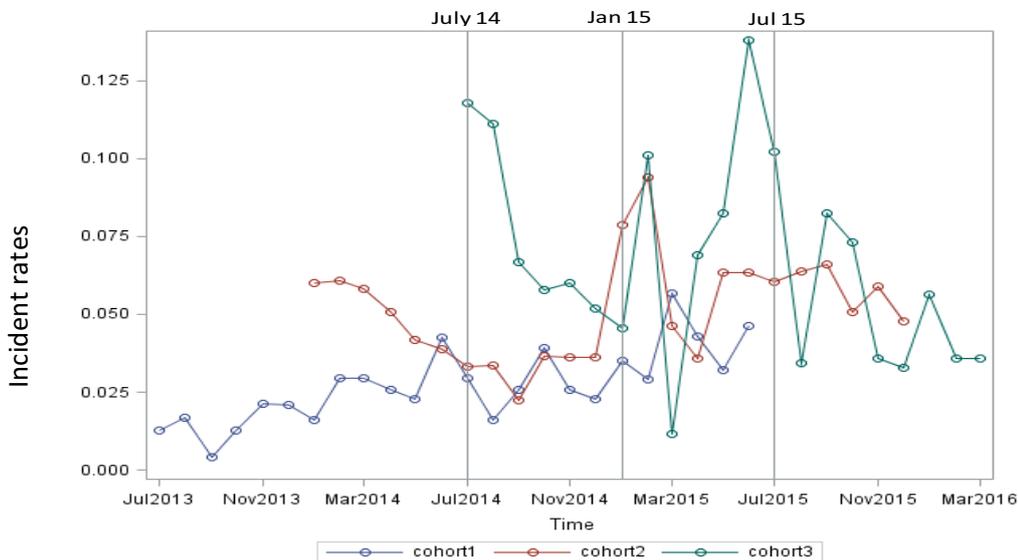


Figure B3.3 Run chart of total changes in incidents across all cohorts

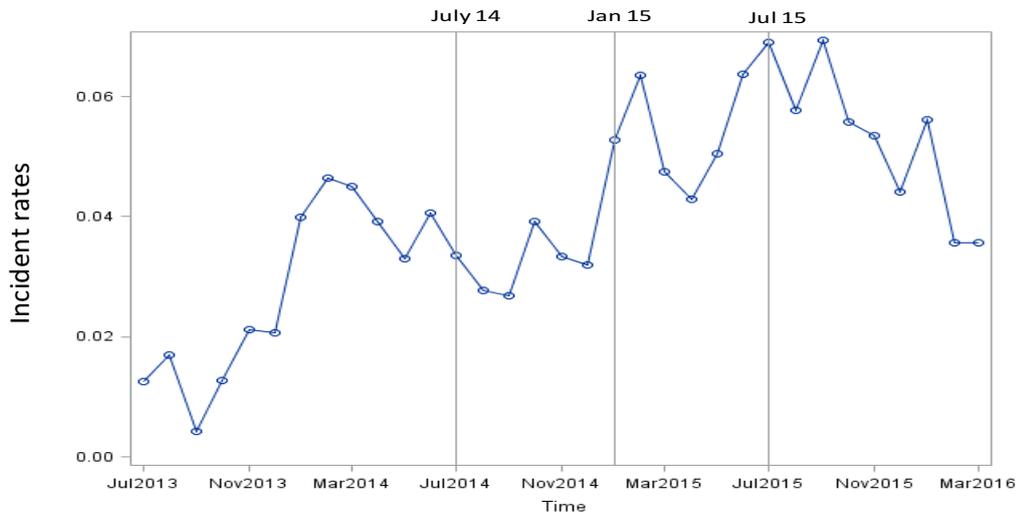


Figure B4: Rate of any hospital admissions in the PROSPER care homes

Figure B4.1 Incident rates by cohort before and after intervention

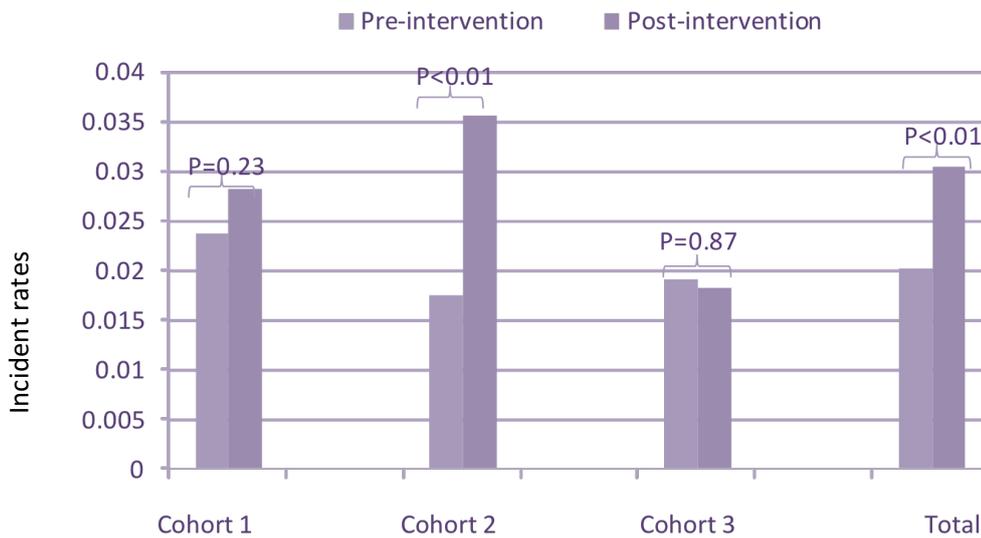


Figure B4.2 Run chart of changes in incidents by cohort over time

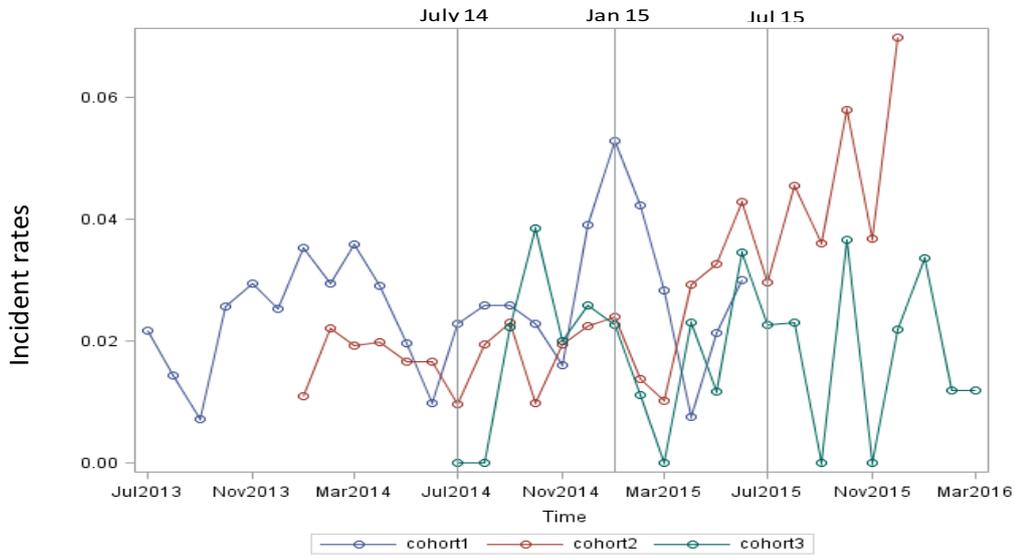


Figure B4.3 Run chart of total changes in incidents across all cohorts

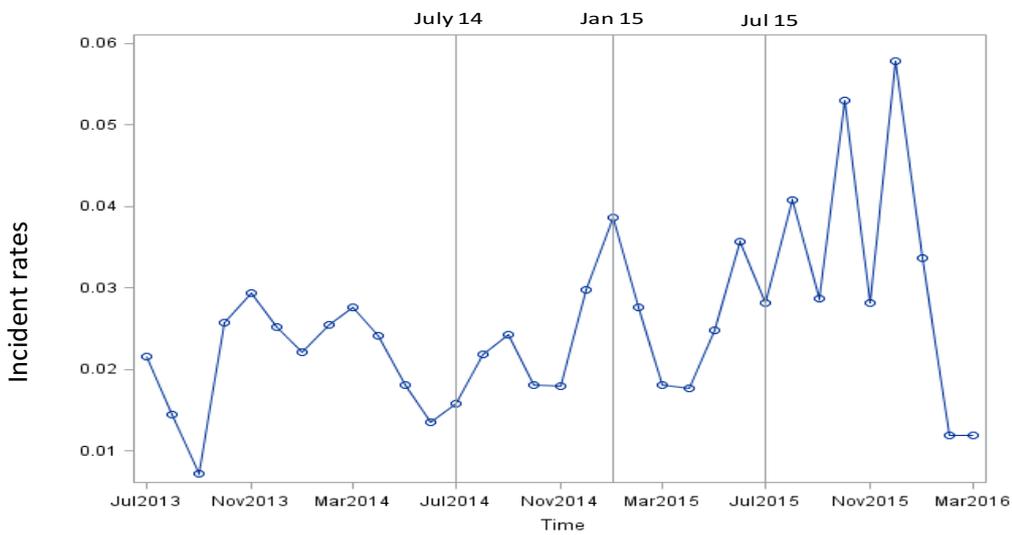


Figure B5 Rate of A&E attendances in PROSPER care homes

Figure B5.1 Incident rates by cohort before and after intervention

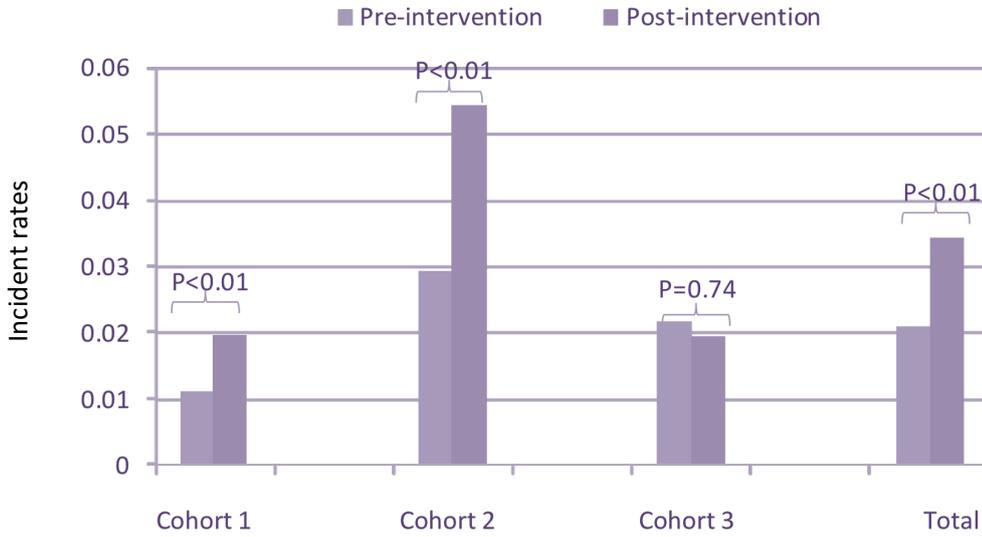


Figure B5.2 Run chart of changes in incidents by cohort over time

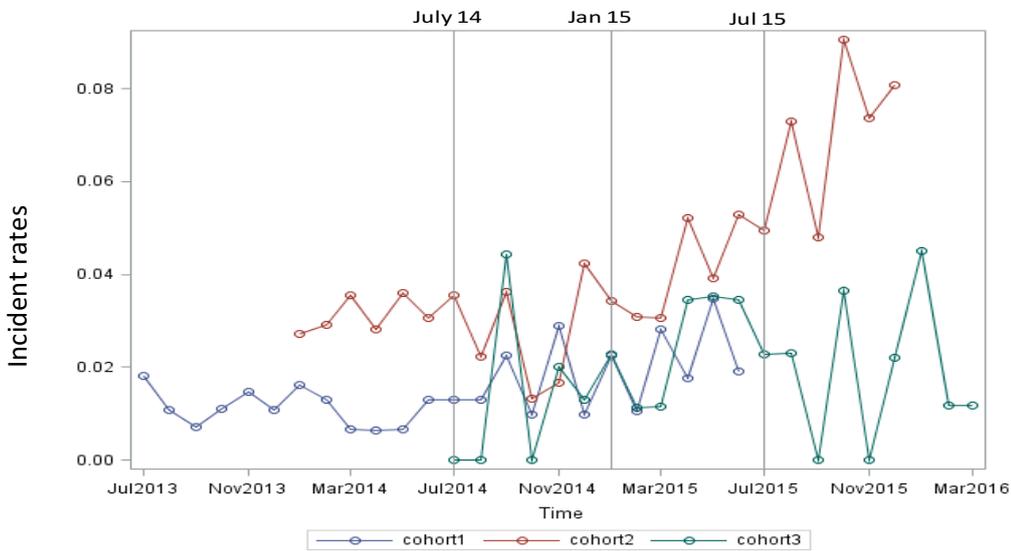


Figure B5.3 Run chart of total changes in incidents across all cohorts

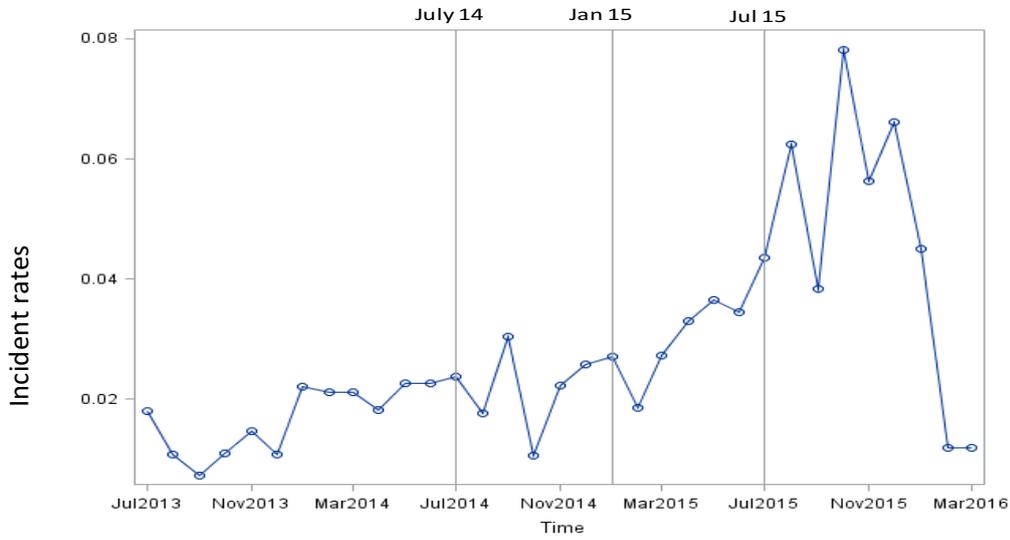


Figure B6: Rate of hospital admissions due to a fall in PROSPER care homes

Figure B6.1 Incident rates by cohort before and after intervention

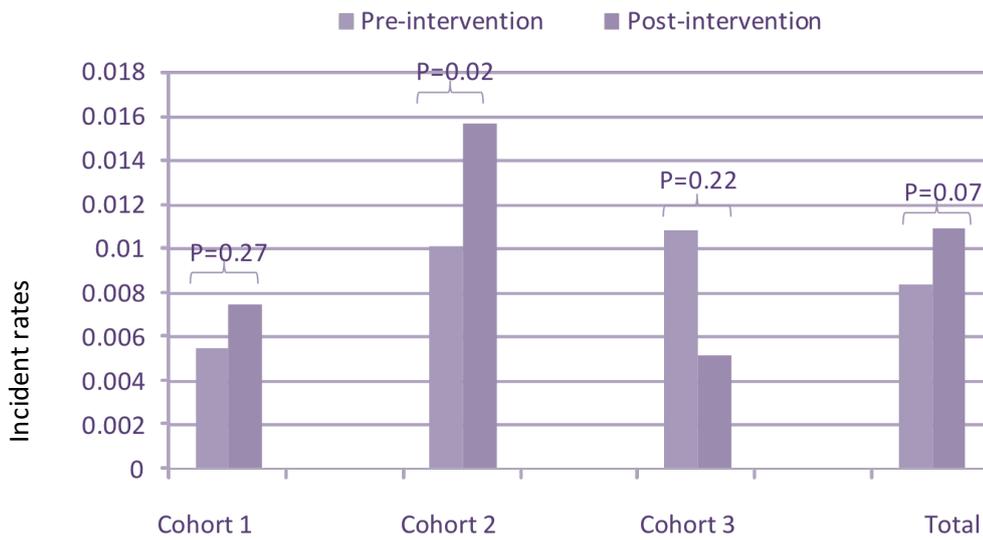


Figure B6.2 Run chart of changes in incidents by cohort over time

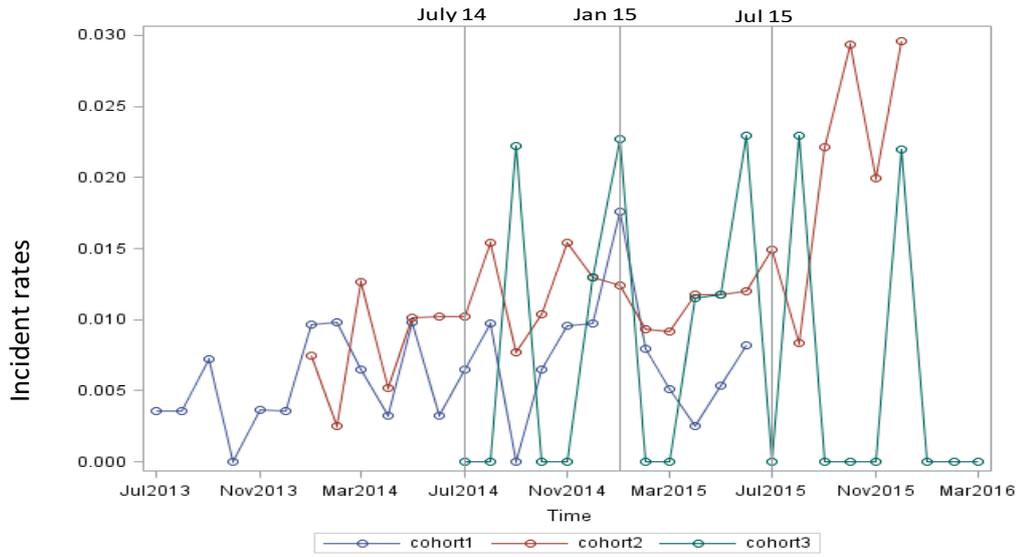
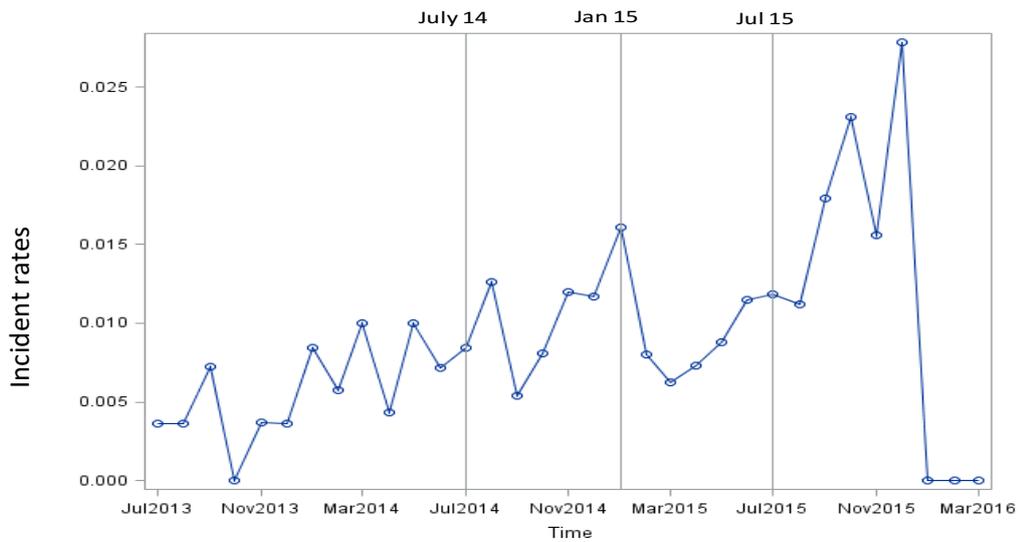


Figure B6.3 Run chart of total changes in incidents across all cohorts



Appendix 7. PROSPER and Unit costs

The cost of the PROSPER and the unit costs for hospital and resident outcomes are presented in Tables C.1 and C.2. In total, the costs of the PROSPER were £282,596.52.

In addition to the direct costs, we acknowledged the indirect costs which included the costs of 1) general management and support services such as finance and human resources; 2) informal care; and 3) unpaid carer's time and cost to the council of commissioning empty beds while the residents are in hospital. We also acknowledged the potential indirect savings including 1) number of call-outs for allied health professionals/pharmacists/social care; 2) reduction of total staff workload; and 3) reduction of medication prescriptions. We have not attempted to quantify any of these.

Table C.1: Original budgeted costs of the PROSPER project

Programme management, QI Methodology training, support and liaison with Health.	
• Project Lead x 1 FTE (Band 4 @ £22,500 + 23% on costs) x 2.5 years	£73,522.50
• QI Officer x 2.5 FTE (Band 4 @ £28,500 + 23% on costs)	£89,932.50
3-month support programme per home x 80-100 homes delivered through four cohorts at quarterly intervals over a 1-year period.	
• QI Assistant x 2 FTE (Band 3 @ £22,212 + 23% on costs)	£54,641.52
QI Methodology training half day session - approx. 5 homes per session, 10 - 20 people	
• Venue & supporting materials/toolkit @ £750 per session x 20 sessions	£15,000.00
Learning Events to maintain momentum	
• Community of Practice events x 3 (venue, catering & supporting materials) @ £3000.00 per event	£9,000.00
• Prosper champions' study days for care staff x 8, 2 per quadrant area (venue, catering & supporting materials) @£3000.00 per event	£24,000.00
Additional resources	
• Compact mirrors, doily's, ferrules, champion badges, bags, lanyards	£15,000.00
• Capita Recruitment costs 3 posts (internal secondments) @£500	£1,500.00
Total	£282,596.52

Table C.2: Unit costs for hospital and resident outcomes

Outcome	Hospital costs	Reference
Falls	Costs per person falling £1720-8600	(Craig <i>et al</i> , 2013) ²⁷
Pressure ulcers	£1214 (category 1) to £14108 (category IV).	(Dealey <i>et al</i> , 2012) ²⁸
Urinary Tract Infections (UTIs)	£2359 per patient.	http://www.hospitaldr.co.uk/blogs/features/unplanned-admissions-medical-technology
Any hospital admissions	Average cost per episode: Elective inpatient stays national average £3403 Non-elective inpatient stays (long stays) £2716 Non-elective Inpatient stays (short stays) £611	PSSRU Costs- 2014 (http://www.pssru.ac.uk/project-pages/unit-costs/2014/)
A&E attendances	The average cost of an A&E attendance is £114 The average cost of an outpatient attendance £108 The average cost of an excess bed day is £237	Reference Costs (Depart. Health) 2013 https://www.gov.uk/government/publications/nhs-reference-costs-2013-to-2014
Community costs		
Falls	£115-197	Tian Y <i>et al</i> . 2013 ²⁹ ,
Pressure ulcers	£43 to £57 Ulcer without complications	Costing statement: Pressure ulcers Implementing the NICE guideline on pressure ulcers (CG179) (NICE, 2014), https://www.nice.org.uk/guidance/cg179/resources/costing-statement-248688109
UTI s	£27.8-£29.0	Turner <i>et al</i> , 2010 ³⁰

²⁷ Craig J, Murray A, Mitchell S, Clark S, Saunders L, Burleigh L. The high cost to health and social care of managing falls in older adults living in the community in Scotland. *Scott Med J*. 2013 Nov;58(4):198-203. doi: 10.1177/0036933013507848.

²⁸ Dealey C, Posnett J, Walker A. The cost of pressure ulcers in the United Kingdom. *J Wound Care*. 2012 Jun;21(6):261-2, 264, 266.

²⁹ Tian Y, Thompson J, Buck D. Exploring the system-wide costs of falls in older people in Torbay, The Kings Fund 2013 <http://www.kingsfund.org.uk/publications/exploring-system-wide-costs-falls-older-people-torbay>

³⁰ Turner D, Little P, Raftery J, Turner S, Smith H, Rumsby K, Mullee M; UTIS group. Cost effectiveness of management strategies for urinary tract infections: results from randomised controlled trial. *BMJ*. 2010 Feb 5;340:c346. doi: 10.1136/bmj.c346.

Appendix 8. Impacts on resident outcomes

This appendix provides further details about impacts from PROSPER on resident outcomes.

Table D.1 shows the impact of PROSPER on falls by care home characteristics. There were no statistically significant differences for all of the care home characteristics, in part due to the small sample size.

Table D.1. Impact of PROSPER on falls by care home characteristics

	No impact Post-rate - pre rate ≥ 0	Impact Post rate -pre rate < 0
Number of care homes	10	8
Median number of residents (interquartile range)	39 (35-53)	36 (31-38)
Average proportion of female residents	76%	73%
Location		
Mid Essex	10%	0%
North East Essex	50%	75%
South Essex	30%	0%
South West Essex	0%	0%
West Essex	10%	25%
Ownership		
One private owner, e.g. family	10%	25%
Owned by small group, e.g. two or three homes	30%	25%
Owned by large corporation	60%	50%
How many homes owned in the UK by same owner		
1	0%	0%
2-5	40%	37.5%
6-10	0%	12.5%
11-20	10%	12.5%
21+	50%	37.5%
Type of care provided		
Residential care	80%	71.4%
Nursing care	10%	0%
Both residential and nursing care	109%	28.6%
Average proportion of residents over 80	78%	82%
Average proportion of residents with dementia	51%	60%
Average % residents fully funded by local authority	43%	52%
Average % of residents in home for over six-months	74%	77%
Each resident has their own GP	50%	50%
One GP practice that covers the whole home	20%	12.5%
A single GP practice for most residents but some residents have a different GP	30%	12.5%

Table D.2 shows the outcome rates at the three time points i.e. pre-six-months; intervention and post-six-months among 18 care homes with both pre- and post-intervention data. Again we did not observe any reductions in falls, pressure ulcers, UTIs, all hospital admissions, A&E attendances and hospital admissions due to a fall.

Table D.2. Rates of the six outcomes in the pre-six, intervention and post-six-months.

	Cohort 1				Cohort 2				Cohort 3					
	No of hom	total resi	event	rate	No of hom	total resi	event	rate	No of hom	total resi	event	rate		
Falls														
Jan-14	7	311	40	0.128617	Jul-14	8	391	92	0.235294	Dec-15	3	77	4	0.051948
Jul-14	7	306	58	0.189542	Jan-15	8	350	89	0.254286	Jun-15	3	87	14	0.16092
Dec-14	7	307	74	0.241042	Jun-15	8	362	108	0.298343	Nov-15	3	84	8	0.095238
Ulcers														
Jan-14	7	311	30	0.096463	Jul-14	7	362	7	0.019337	Dec-15	3	77	3	0.038961
Jul-14	7	306	41	0.133987	Jan-15	7	292	17	0.058219	Jun-15	3	87	4	0.045977
Dec-14	7	307	30	0.09772	Jun-15	7	332	10	0.03012	Nov-15	3	84	2	0.02381
UTIs														
Jan-14	7	311	5	0.016077	Jul-14	7	362	12	0.033149	Dec-15	3	77	4	0.051948
Jul-14	7	306	9	0.029412	Jan-15	7	292	23	0.078767	Jun-15	3	87	12	0.137931
Dec-14	7	307	7	0.022801	Jun-15	7	332	21	0.063253	Nov-15	3	84	3	0.035714
Adms														
Jan-14	7	311	11	0.03537	Jul-14	7	310	3	0.009677	Dec-15	3	77	2	0.025974
Jul-14	7	306	7	0.022876	Jan-15	7	292	7	0.023973	Jun-15	3	87	3	0.034483
Dec-14	7	307	12	0.039088	Jun-15	7	303	13	0.042904	Nov-15	3	84	0	0
A&Es														
Jan-14	7	277	3	0.01083	Jul-14	7	310	11	0.035484	Dec-15	3	77	1	0.012987
Jul-14	7	306	4	0.013072	Jan-15	7	292	10	0.034247	Jun-15	3	87	3	0.034483
Dec-14	7	307	3	0.009772	Jun-15	7	303	16	0.052805	Nov-15	3	84	0	0
Adm_fall														
Jan-14	7	277	1	0.00361	Jul-14	8	391	4	0.01023	Dec-15	3	77	1	0.012987
Jul-14	7	306	2	0.006536	Jan-15	8	322	4	0.012422	Jun-15	3	87	2	0.022989
Dec-14	7	307	3	0.009772	Jun-15	8	333	4	0.012012	Nov-15	3	84	0	0

Appendix 9. Feedback about PROSPER components

This appendix provides further details about components of PROSPER. It highlights aspects that were found to be more or less effective in facilitating change. Information was collected for this section using the following methods:

- review of 523 documents
- 127 hours worth of visits and observations
- 203 individual interviews with care home staff
- 12 discussion groups with care home teams
- 26 meetings, discussion groups and interviews with PROSPER team

Training and facilitation

Training in quality improvement approaches

Initially PROSPER quality improvement training was offered by an external team made up of improvement specialists from healthcare. Care homes reported that this training was difficult to understand, not practical enough and not tailored to the care homes' context. As a result, PROSPER adapted the training and from cohort two onwards it was run by the PROSPER implementation team.

An important change to the training was that it incorporated examples focused on care homes. The facilitators also used ideas tested by previous cohorts, so they could provide real examples about what other care homes tried and what the outcomes were. The terminology used is also linked to the care home context. For instance *PDSA* cycles are likened to risk assessments, whereby care homes consider an issue, think about how to manage it, review progress and decide on further action. Linking the concepts to things care homes are familiar with reportedly worked well.

Another change was that training materials were redeveloped to be more user-friendly. Initially blank driver diagram worksheets were presented and care homes were expected to create a driver diagram for their specific aim. However care homes found this difficult and time-consuming to do. The revised training provided sample driver diagrams, developed as a partnership between PROSPER and NHS community teams.

A *PDSA* worksheet template was developed to help care home staff see how to undertake rapid tests of change in practice. These concrete examples and worksheets were well received and were included in a resource toolkit which was made available online.

However many care homes in cohorts three and four said they did not use the driver diagrams or PDSA cycles. These care homes did focus on testing new ideas, but not using the formal structure and terminology of quality improvement methods. This may not be negative, but it suggests that the training and support moved away from being about quality improvement methods towards supporting improvement more generally. Although the implementation team noted that cohorts two, three and four received the same training, but just with more practical examples, feedback from 203 interviews with care homes and 12 discussion groups suggested that there was a shift, from cohort two onwards, away from emphasising improvement methodologies in a more formal sense. This means PROSPER may have become more about improving care in a general sense and less about introducing specific improvement methodologies.

In terms of the training, all cohorts suggested that staff from care homes could co-facilitate the introductory training in future. This was a strong message, put forward by about two-thirds of care homes.

“It would be better if they had people from homes running the training or running it side-by-side with them. Or maybe someone from the hospital, the Council and one of us. It might make it more relevant and easy to understand. I mean it was relevant, but if it was a manager or someone who worked in a home before, well they can give examples that make sense and use words like what we use.”

[Senior carer from small home, run by small group]

Training about reducing harms

In addition to training about quality improvement methods, PROSPER worked with the NHS to offer training about substantive topics such as infection control, diabetes, medicines and pressure ulcers. Some of this training was run as workshops where care home representatives came together in a central venue. At other times, NHS facilitators visited care homes and offered 10-30 minute training sessions, perhaps repeated so different carers could come off the floor to attend. These in-home sessions were well received.

“Pressure sore training from PROSPER was good. They did it in 30 minutes shifts with training. Like every 30 minutes they ran training for 10 minutes or something. People came in from their days off. That type of training should be continued. It is really good coming to homes.”

[Manager from medium-sized home run by corporation]

“The short sharp training offered to carers has been good. Carers have spotted that district nurses aren’t doing what they should now because they’ve had that training.”

[Carer from small home, run by small organisation]

These additional study days and in-home training were not part of the original PROSPER programme design. They were well received but meant that PROSPER became about more than introducing quality improvement methodologies and tools to care homes. In fact in interviews conducted near the end of the programme, home managers and carers constantly referred to this additional free training as being the main component of PROSPER and the thing they valued most. In the final set of interviews not one home mentioned *PDSA* cycles. Offering training about diabetes, medicines and so on was valuable for care homes, but diluted the focus on quality improvement approaches.

The rationale for introducing training about substantive topics was that care homes needed ideas about what improvements to make, rather than solely how to introduce and monitor change. This relates to training about pressure ulcers, falls and urinary tract infections as these were the three primary focus areas of PROSPER. Hydration is a risk factor for all three topics, so this was a priority for training. Other topics such as diabetes were partly chosen due to availability and interest from the NHS; though care homes also said they found this useful, even if they did not request it.

This training received much more of a focus than other components that were originally planned to be prioritised, such as using a safety culture tool and showing care homes how to track changes in their incident rates over many months. A tool was used for this but it was not emphasised as a day-to-day improvement tool by the facilitation team. Thus the additional substantive training appears to have overshadowed the original intent of the programme – to test the feasibility of introducing quality improvement methods to care homes. This presumably reflects the different components of Deming’s classic ‘profound knowledge’ – specialist content knowledge about the technical elements of any system being improved needs to be present alongside general knowledge about how to improve.

There was also a perception from some care homes that the training was not being rolled out universally across Essex, with PROSPER care homes more likely to benefit than others. This is somewhat outside of the control of PROSPER, as the training is offered by NHS partners. There are five CCGs within the Essex County Council boundary and four community health providers who have all offered slightly different things to PROSPER, meaning there is a lack of consistency across areas. However this reinforces the importance of being careful about what is promised to care homes and the need to follow-up regularly with partners to ensure that care homes in all areas are able to benefit from additional training to avoid feelings of unfairness. Originally PROSPER planned to focus on two areas in Essex only. Expanding beyond this has benefits for dissemination, but also means that more effort needs to be put into managing inconsistencies in provision.

Home visits

The PROSPER implementation team provided on-going support visits for about six-months. Initially it was envisioned that visits would be monthly, but there was variation in this. Some care homes received significantly more visits than others. The range was zero to five visits within a six-month period. Most homes received two or three visits in the first six-months, with some care homes receiving follow-up after this and other care homes reporting little further contact.

Care homes that received four or more visits were happy with the level of contact. Homes visited less often called for more frequent follow-ups. Homes that had ended their ‘intensive’ first six

months also said they felt left on their own, with little communication about whether visits had stopped altogether.

“Yes, let me remember. She [officer] came two-months ago, no three. Yes, three-months. We can ring her if we want. I suppose there has not been that much contact. We have had two visits over the space of six-months. You [evaluator] come more often [laughs].”

[Manager from small home, run by a small group]

“They promised to come every month but they are only coming every three-months. It could be a bit more regular if you ask me. I don’t want to sound ungrateful but it does feel like we are just left to get on with it. I think it does impact on how fast we go because we are floundering a bit and without someone to keep it in your mind it is a bit hard.”

[Manager of a medium-sized home, run by a corporation]

In cohort four, two staff were hired solely for PROSPER and could visit homes regularly. Cohort four homes reported being satisfied with the level of contact from the PROSPER team, much more so than initial cohorts.

During evaluation team visits to care homes and interviews, home managers and staff gave positive feedback and widespread praise about the friendliness, enthusiasm and approachability of the PROSPER implementation team. Some care homes said that they initially began the programme and have continued with it due to the personable style of the improvement facilitators.

“The thing that has made me stick with it is I like [facilitator]. We are busy. We have a lot on. We are doing well already. She is good though. She keeps you on board and makes you want to take part.”

[Manager of a large home, run by a large corporation]

“I like [facilitator]. She is nice. She is not that helpful and I think she knows only as much as us, but she is very understanding and will have a chat with you and that. It’s the personal thing eh, it makes a difference. She comes out every two- or three-months.”

[Manager of a medium-sized home, run by a corporation]

There was variation in the type of support provided to care homes, with up to seven different facilitators in the team at any one time (including the project lead). Each care home was assigned one facilitator, and the facilitators had varying levels of knowledge, styles and time available. Some care homes felt that they had a facilitator who was knowledgeable whereas others thought there was scope for up skilling the facilitator.

“I got the sense that they are learning as they go along too. They are doing their own PDSA cycles [laughs]. That’s all fine and dandy, but if they want us to get with the programme in a short space of time and make all these changes, it would help if they could know more about how to use the Thermometer, how to do PDSA like with those diagrams. I don’t know, I just think if they, I mean we’re grateful for any help, don’t get me wrong, but I didn’t really feel helped. Ok wait, here is a better way of saying it. I felt supported because the people are nice. They are trying their best. But I didn’t feel helped as such because they do not seem to be experts. They do not seem to know what they want us to do. They do not know about how to

have less falls or pressure sores. We already know we have sores. We don't need help to find that out. We need help to know how to stop it. They don't know."

[Manager of a large home, run by a large corporation]

Towards the end of 2015, the PROSPER team introduced two band 3 supporters who took on a key facilitation role with the care homes. These team members did not have a lot of training or experience in quality improvement and were also working at a lower banding than other team members. However, these team members were very well regarded by the care homes. Care homes said they felt that these facilitators were friendly, helpful and 'on our level'.

Community of practice meetings

PROSPER ran community of practice events and study days for PROSPER champions to give homes an opportunity to come together to share ideas.

The first community of practice event was held in November 2014 for cohort one. The second event was held in May 2015 for care homes from both cohorts one and two. In late 2015, smaller community of practice events were run in the north, east and west of Essex. Care homes from all three cohorts operating at the time were invited.

The first community of practice event combined training with small group work. Whilst care homes appreciated the event, they suggested that more time could have been spent networking and allowing them to share their successes. The PROSPER team took this on board for future events, focusing more on sharing ideas between care homes.

Stakeholders from the local authority and NHS were present at the first two large community of practice events. A member of the implementation team facilitated the smaller community of practice events and there were no delegates apart from care home staff.

Whereas care home managers predominated at the first event, the second community of practice event had participation from carers, managers and deputies. In addition, there were regional managers representing large corporations, UCLP, a GP, NHS community team members and some members of the PROSPER implementation team. About 40 people took part.

Having carers at the event helped to showcase that the philosophy underpinning PROSPER was beginning to spread in some care homes. Carers said that one of the key outcomes of PROSPER was building a cadre of enthused and empowered carers.

"It is educating us carers about what to look for to avoid pressure ulcers and falls or to identify UTIs (urinary tract infections). The main thing that PROSPER is doing is empowering staff. We have had a fair bit of training and resources before but what makes this different is that it is about us. Before we (carers) would never really get to come to an event like this with all the managers and other people and be treated like we have something to say. When we tell about what we did, people listen and that makes us proud. Having more events like this would be good, especially aimed at helping carers understand even more."

[Carer from a medium sized home, run by a corporation]

“Before we felt a bit intimidated, you know, because I’m not a nurse or a senior (carer) or anything. I was worried I didn’t know enough. But since being a PROSPER champion my confidence has grown more. Carers aren’t just coming in to wash and clean now. We can do other things. We are helping to improve things. We are working as a team now... Coming to something like this (community of practice) just shows that we can take part. It is scary to be in a room like this with everyone, but then when other carers start talking you feel, yeah (punches towards ceiling), like we can make a difference. We got lots of cool ideas to take back and try out.”

[Carer from a medium sized home, run by a corporation]

At this event was a call for some specific activities targeting carers – both to spread the word about quality improvement methods, to provide practical skills in motivating others to change and to gain further information about substantive ways to reduce falls, urinary tract infections and pressure ulcers. The implementation team took this suggestion on board and set up ‘champions’ study days’ targeting carers. These events were very well regarded, with participants saying they felt motivated as a result. Carers routinely said they had implemented things they learnt at the champions’ study days.

“We came away buzzing from that [champions’ study day]. It was good because we heard what other care homes are doing and we felt good about what we’re doing too. There was lots of fun and laughter, but we were learning about serious things. It was all on our level. Not too high and mighty. It was real practical. Things to use every day. I told all the other girls when I got back and we are trying things like decorating [walking] frames.”

[Carer from a medium sized home, run by a corporation]

Smaller communities of practice ran in local areas were not always well attended, but were well received by those who did attend. These tended to be facilitated by the band 4 support workers and to focus on helping care homes share their ideas and successes in an informal environment. Whilst people appreciated some of the ideas shared, they seemed to prefer the larger events where there was more of a ‘buzz’.

Key things that helped make PROSPER community of practice events and champions’ study days useful included:

- including a mix of taught content and opportunities for care homes to share their learning and ideas;
- having all Council improvement officers who are supporting care homes with PROSPER attending the events so care homes have an opportunity to see their assigned officer on occasions other than home visits;
- using introductory ice-breaker activities and fun practical activities to create engagement at the events;
- using extensive examples from care homes and simple terminology. Joint facilitation by the implementation team and care home staff was requested by homes to promote

more 'ownership' and participation and this was implemented in some of the smaller localised community of practice meetings;

- focusing on building a 'community of practice' rather than running standard educational events / workshops;
- inviting a wide range of care home staff, rather than only senior staff;
- providing hand-outs and resources for participants to take away with them; and
- providing enough notice of events.

Tools to support using data

In addition to providing various types of training and support, PROSPER also provided care homes with tools to support their use of data. A variety of tools were tested. These data tracking tools were the second most popular and valued aspect of PROSPER, after the substantive training.

NHS Safety Thermometer

The first tool that PROSPER tested to help care homes monitor trends in safety incident rates over time was the *NHS Safety Thermometer*. Appendix 3 contains a copy of a screen shot from this online tool. The developers of the tool had stated that it was being used in 402 care homes and required no further adaptation for this setting. This was one reason why it was included in the original work programme.

Care homes were asked to log into the tool each month to provide incident rates over a set time period, e.g. 72 hours per month. This tool was tested with cohort one and two, but was then phased out due to feedback from the care homes.

Whilst care homes could see the value of using an online tool to track progress, they were hindered by technical issues with setting up and using the system, concerns about whether the investment of time needed to input data was worth the output and queries about the validity of the information.

"I really don't like it. I mean I like it fine when you get on and it is simple enough to use but I think it is a waste of time. The whole process for setting up takes ages. You have to email then get an email back from the guy then another email with passwords and then eventually they set you up. It seems a long-winded thing. It sometimes is down or not working. It just seems a fiddly technical thing that is not worth it."

[Manager from a medium-sized home, run by a small group]

In particular, care homes reported that the output gained was not worth the investment of time to input information about each individual resident.

"We collect data [about incidents] anyway and have it for the whole home for the whole month or year. I don't see any added value in looking at just one-day or 72-hours or whatever it is and then counting episodes for that. The tools should be adjusted for the needs of care homes, not just using something off the shelf that does nothing for us. Maybe for a small home that doesn't usually collect data then it would be a good introductory tool, but we're at a different stage to that. It feels like we are going backwards and just making more work for the sake of it."

[Manager of a large home, run by a large corporation]

"It takes a lot of time... yes it is only once every fortnight but you have to enter in the residents every time. So you have to put in [number] individual details, then say if each one had a fall or sore or whatever. I don't even know what we get out of it. I suppose [Council] need it for their records or something."

[Administrative staff member from a medium-sized home, run by a corporation]

Another issue was that care homes did not necessarily feel that they received support in how to use the information.

“At the moment it seems like we are collecting all this data, but then not doing anything with it. I don’t know what they want us to do. I mean, I know we have to put in data every two weeks, but then what? It seems a bit pointless. No one has explained anything. It’s a bit frustrating to be honest.”

[Manager from a small home, run by a small group]

Some care homes queried the validity of the *NHS Safety Thermometer* methodology, in particular the approach of using samples rather than census data. In care homes there may be limited turnover of residents, a relatively small number of residents and of incidents. The *NHS Safety Thermometer* took a sample of a few days per month rather than a census of all incidents. Only one fall or pressure ulcer is entered per person. This means that may be difficult to demonstrate changes over time.

“I don’t think it is valid. Why do a sample? To me sampling is open to bias and selecting what you want the numbers to tell you. I don’t think we will get anything out of it by doing that. We are doing it but keeping a record for all days, not just one or two-days a month.”

[Manager of a small home, run by a small organisation]

“I don’t think it is going to tell us anything. We just put in the worst-case pressure ulcer, not all of them. We only look at 72 hours. I just don’t get what it is supposed to tell us. It is biased. It is not helping. It is just making more work.”

[Administrative staff member from a large home, run by a large corporation]

These comments perhaps helps to explain why although two-thirds of care homes from cohort one signed up to use the *NHS Safety Thermometer*, actual usage was inconsistent and sporadic. Less than one-quarter of the cohort one homes input data regularly and these homes generally did not use the charts generated by the Thermometer for improvement purposes. The same was true for cohort two so PROSPER decided not to use this tool from cohort three onwards. Cohort one and two homes were still encouraged to use the Thermometer if they wished, but not one of these care homes continued inputting their data after the ‘requirement’ to do so ended.

Care Homes have suggested that to be more useful the Thermometer could:

- measure days between events rather than events per month (since the number of events may be low);
- input the total incidents of events, rather than only a few days per month;
- input totals rather than the details of individual residents;
- if individual resident details are required, carry these over automatically each month to avoid having to retype all information; and
- disaggregate age groupings to allow to differentiate people in older age brackets

Safety Cross

In response to the issues with the *NHS Safety Thermometer*, PROSPER introduced the *Safety Cross*. This is a cross-shaped calendar listing days in the month. Staff colour in green to represent an incident free day and red to represent the date of an incident. Some care homes divide the day into shifts. Others mark off the time of incidents. Some care homes used the *Safety Cross* for one type of harm; others used three different *Safety Crosses* for falls, urinary tract infections and pressure ulcers.

The *Safety Cross* was introduced by the UCLP team to one care home who joined cohort one in September 2015 at the recommendation of CQC. This approach was used as an example at the first community of practice in November 2015, with a photograph of the *Safety Cross* on the wall, surrounded by a fall's checklist. From that point, the PROSPER implementation team made copies of the tool available for the care homes to use if they wished. Several care homes began using it from this point and PROSPER included it in the toolkit and training given to cohort two. The tool was not necessarily designed as an alternative to the *NHS Safety Thermometer*, as it does not provide longitudinal data.

The *Safety Cross* was extremely well received. After the substantive training, this was the second most highly valued PROSPER intervention. A limitation is that it does not allow tracking of progress for more than one-month at a time, but a significant benefit is that it is a visual prompt and involves a variety of staff rather than solely managers. Many care homes reported placing the *Safety Cross* on the wall in a prominent area, either in the staff room or public areas. When displayed in public areas, this has reportedly sparked discussions with relatives in some instances. In larger homes, different units or floors may compete with each other in a friendly manner to get the 'best results.'

About one-third of homes from the first three cohorts queried why the diagram was a cross shape. There was some initial discomfort about something that could be perceived to have religious connotations. The PROSPER implementation team reported that one care home turned the cross on its side so it was more like the green cross code for this reason. Others used a 'walking stick' version or other shape. During evaluation interviews and visits there were requests for PROSPER to change from supplying cross shapes to another shape instead.

A small number of care homes have said that being so visible may have negative impacts if people feel the need not to disclose incidents, but overall the *Safety Cross* was positively viewed.

Graphs mapping incident rates

To help track changes in resident outcomes over time, care homes were invited to provide the evaluation team with data about monthly rates of falls, pressure ulcers, urinary tract infections, emergency department attendances and hospital admissions. This was supposed to be part of the *NHS Safety Thermometer* intervention, but care homes were not using the tool in this way. The evaluation team therefore produced a data table, which care homes used to collate their incident rates. This was used by some care homes as an intervention tool, so they could track changes over time.

Due to issues with the *NHS Safety Thermometer*, the evaluation team developed a simple online version of the data table tool which automatically graphed home's results and compared with the average of all care homes taking part in PROSPER. The PROSPER implementation team rolled out this 'Monthly Mapping' tool from cohort three onwards. However the tool was designed as a tracking device rather than a full improvement tool.

All but one home from cohort one (94%), 89% of cohort two, 62% of cohort three, and 55% of cohort four used the tool. Cohort one and two were actively encouraged by the evaluation team to use the tool, including with in person and telephone support, whereas cohort three and four received email prompting only from the evaluation team.

Home managers generally valued receiving graphs of their incident rates, either directly from the evaluation team or online.

"Thank you for the graphs. It is very helpful to see the data in black and white, oh how I loathe winter! It's interesting to note the similar patterns across the county, don't you think? Which I believe is in part due to seasonal trends and viruses, etc., and an escalation of UTIs, lack of fluid, confusion and falls, in our case anyway. One can anticipate the trends almost to the day. All I need to do now is to reduce the odds!!! Your evidence is a powerful tool to take back to the team and an incentive to do better."

[Manager from medium-sized home, run by small organisation]

"Our CQC inspector has appreciated our board where we put your graphs, thank you for your help, graphs really show the progress in the home (all ups and downs). I am doing analysis of reasons of falls and all incidents/accidents in the home now to have a clear picture (for example a lady with a very limited memory and understanding - very advanced dementia - came back from hospital after three blood transfusions and being very weak and unsettled had two falls within two hours (she immediately went to one-to-one care for few days until she recovered) - but there was a clear reason of falls - I recorded it and record all reasons of all accidents/incidents to do some analysis every month... it might help as well... carry on with graphs and ideas.... it really helps us to improve our work and also helps to change thinking of staff - it is very transparent and make staff to stop and think "why", not only to work like robots.....:)."

[Manager from medium-sized home]

"When you see it all visually like this it paints an interesting picture. When I filled in the table it was mere numbers but this brings it to life. I have distributed around the home."

[Manager from medium-sized home run by large corporation]

An important component is that the graphs allowed care homes to compare themselves with the average incident rate of other care homes taking part in PROSPER.

"Having the monthly charts has helped us decide what to focus on and we see we need to reduce falls so we are focusing on that. We are doing better than other homes in some other areas so feel reassured about that. I like the comparative nature as we are a bit competitive and we want our home to be good. That really motivates you."

[Manager of medium-sized home run by small organisation]

"I was particularly pleased to see that we are under the PROSPER average for pressure sores and falls. Interesting. I need to catch up with last month's data input but it definitely shows us where to focus and what to work on. It makes me more interested in looking at the data. Thank you for being so helpful and giving us a good resource. This is probably the most useful thing we have got out of PROSPER."

[Manager of medium-sized home run by corporation]

"I was fascinated to see how my home compares with the others. It is clear where we have more to do and where we are doing ok. It's quite encouraging."

[Manager from small home owned by small group]

The evaluation team has made the Monthly Mapping tool continuously available to all care homes that wish to continue using it after PROSPER ends. Based on the success of the tool, Essex County Council are also developing their own version.

Safety culture tool – MaPSaF / Culture is Key

The *Manchester Patient Safety Framework (MaPSaF)* was originally designed for use in healthcare, as a prompt for team discussions. The tool asks teams to discuss where the team and organisation lies on a range of factors relating to safety culture, and to reach consensus through discussion (see Appendix 3 for an example). PROSPER held a development session with care homes prior to launching the programme. The aim was to refine the wording of the *MaPSaF* tool, to make it more acceptable and appropriate for the care home context.

The original PROSPER proposal stated that *MaPSaF* would be used when care homes first join the programme to help identify strengths and weaknesses in each home and to guide the development of tests of change. This did not occur.

PROSPER did some degree of testing of *MaPSaF* with care homes but this was not prioritised as an intervention. Initial tests showed that the tool in its usual format was not suitable for the care home context. Although care homes said they could see the value of the concept, the language of the tool and the implementation process may not lend itself well to care homes. Care homes felt that they could not set aside three hours for a full team discussion, because staff are required on the floor to provide care. The implementation team said that shorter discussions about selected dimensions of the tool could be used, but the care homes still found this problematic.

“I found it hard to get people to do it. At first they wanted us to have a meeting and discuss it, can you believe it? We don’t have time. It would take three or four hours. Did they expect us to pay the whole team to sit around and talk about a survey? They said we could discuss one of the topics at each meeting, kind of once a month or something. We’re not doing it. We just filled in the forms and sent them back. We haven’t heard anything back.”

[Manager from a medium-sized home, run by a large corporation]

“I think this is another NHS thing. I’m not sure it is relevant to us really. You are supposed to have a meeting all the time to discuss it and agree. I don’t think that is really going to happen. It’s just fitting it in. We would all have to stay late or come in on the weekend.”

[Senior carer from a large home, run by a large corporation]

In the first cohort, the implementation team asked care homes to use the tool as a type of survey for staff and then to discuss aspects at team meetings. This was because the implementation team recognised that it was unrealistic to expect care homes to set aside one or more hours to undertake a full *MaPSaF* discussion. They thought it may be useful for staff to look at the dimensions of the tool themselves, send anonymously completed forms to PROSPER for collation and then use the results to guide future discussions in team meetings. This was done after discussion with the tool developers.

However, the form used was the evaluation sheet from the *MaPSaF* tool (which is usually given out at the beginning of group discussions). The implementation team did not adapt the language or format of the tool to be used as a survey, which would have been useful if there was a desire to test this approach. Whilst the tool developers were consulted, they are not experts in the care home context or in gaining feedback using a survey-type approach. This was not discussed with the evaluation team, who do have expertise in survey design. Perhaps as a result of the lack of adaptation for this method of collation, staff found the process and the language difficult.

Although ten care homes submitted batches of ‘surveys’ for analysis, results of the compilation took some time to reach care homes, and there was little understanding of what to do with the results when they arrived.

“Yes we have to fill in a form. Later we might talk on the topics. It is a bit like a test. It is pretty hard. I don’t know why. We just do what we are told and make it try to sound good.”

[Carer from a large home, run by a large corporation]

“I don’t know what it’s for. They said it is to help us. [Manager] talked about it in the staff meeting but we just all ticked what we thought sounded good. I haven’t heard anything back from it.”

[Carer from a small home, run by a small group]

For the second cohort, PROSPER arranged a workshop to train managers in how to facilitate the tool. The workshop was well received, though participants said they would prefer for it to be run after introductory training about other improvement approaches. However, whilst managers had good intentions about using the tool, no home used it themselves.

In two instances PROSPER facilitators ran meetings or drop-in sessions in care homes using the *MaPSaF* tool. This is the way *MaPSaF* was designed to be used. The care homes that received facilitation using the tool were very positive about this, saying that it helped them see things from a different perspective. This suggests that if a revised *MaPSaF* tool was implemented as planned with the care homes, it may have been useful. However the PROSPER team in effect set the tool aside and did not use it with cohort three, though they restarted using it in limited testing mode in cohort four. This was largely due to capacity within the team, but the team did choose to prioritise other activities that were not originally part of the proposed intervention over testing one of the original intervention tools.

Late on in the project the implementation team re-introduced *MaPSaF* with a limited number of care homes in cohort four, changing the wording and style of *MAPSAF*, renaming this the *Culture is Key* tool. A carer who had used the survey as part of cohort one became part of the PROSPER implementation team and helped to further simplify the language. The tool was simplified onto one page, with language designed to resonate with care home staff. PROSPER aims to test the tool with up to ten care homes in cohort four and this process is on-going at the time of submitting this report

Resources

Online resources

PROSPER set up an online forum (Knowledge Hub) for participating care homes. The aim was to share tools and success stories. However only 10% of participating care homes registered for the site (nine care homes). The implementation team did not upload resources that the care homes were not already emailed. No care homes tended to post resources or comments.

No care home reported actively using the site for discussion, sharing or networking. No specific barriers to use were noted, though care home managers stated that they have limited time and did not see any additional information added to the site other than what they already had. In order to make the platform more of a live forum, new resources, slides, summaries of community of practice events and links to other websites may have needed to be added more regularly so care homes have a reason to join and contribute.

A twitter account was set up for PROSPER, but no home reflected on its usefulness.

One participating care home set up a Facebook page to highlight some of their successes through PROSPER. Residents reacted well to this, asking for their photos to be placed online. As a result of this success, the PROSPER team are now planning to set up a Facebook page for the programme as a whole. This is one example of how the PROSPER team continued to gain ideas from care homes, so the sharing of ideas was two-way.

Toolkit of worksheets

A toolkit of worksheets and information sheets was compiled about reducing falls, pressure ulcers and urinary tract infections. Some care homes stated that they used the checklists and information sheets, and some displayed the materials within the care home. The fall's prevention checklist was particularly popular.

However other care homes commented that the wording of the toolkit is sometimes difficult to understand and hard to disseminate to carers. Care homes requested a revision of the toolkit so that it matches with the educational level and preferred terminology of the target audience.

Monthly newsletter

From January 2015, PROSPER began distributing a short colourful monthly newsletter. Initially this was one page, but care homes asked for more so the newsletter became two to three pages. Care homes said they valued seeing photographs and success stories from other care homes. However they wanted more practical details about what they were doing and how they have dealt with barriers, so they could adapt the ideas for their own care homes. A number of care homes reported seeing an idea in the newsletter and adapting it for their own home.

Appendix 10. Communication plan

This Appendix reproduces the PROSPER communications strategy developed during the second year of the programme and signed off by the project team in October 2015. The delivery of the different activities described in the strategy is outlined in the relevant chapters of the report.

PROSPER communications plan – October 2015

1. Context

This strategy document outlines the approach to communications taken for the PROSPER programme.

PROSPER seeks to develop the skills that are central to delivering improved safety for residents. Its key aim is to improve safety and reduce harm for care home residents across Essex.

Under the overall aim, specific objectives are to:

- Work together with staff, residents and their relatives to find ways of introducing new quality improvement training opportunities which will enable staff to address safety concerns;
- Reduce the percentage of residents that present at A&E;
- Increase the proportion of residents who are 'harm free' (as defined by the *NHS Safety Thermometer*);
- Reduce the prevalence of falls, pressure ulcers and urinary tract infections across care homes;
- Increase staff understanding of, capacity and capability to create a safe environment for residents;
- Improve collaboration and learning between health and social care; and
- Establish an evidence base for the intervention.

This two-year pilot project has been developed in partnership with Essex County Council, UCLPartners and Essex residential care and nursing homes.

PROSPER is funded by The Health Foundation, an independent charity working to improve the quality of healthcare in the UK, and is the first social care initiative to be funded by the charity.

So far in the project, much work has gone into communicating with local stakeholders – specifically care homes – to encourage as many homes as possible to take part in the programme. Communications will continue in this vein for recruitment to the final cohort, but will be bolstered by communications with broader stakeholders to try to secure the future of the intervention.

Programme vision: The PROSPER programme becomes business as usual for care homes in Essex and across England.

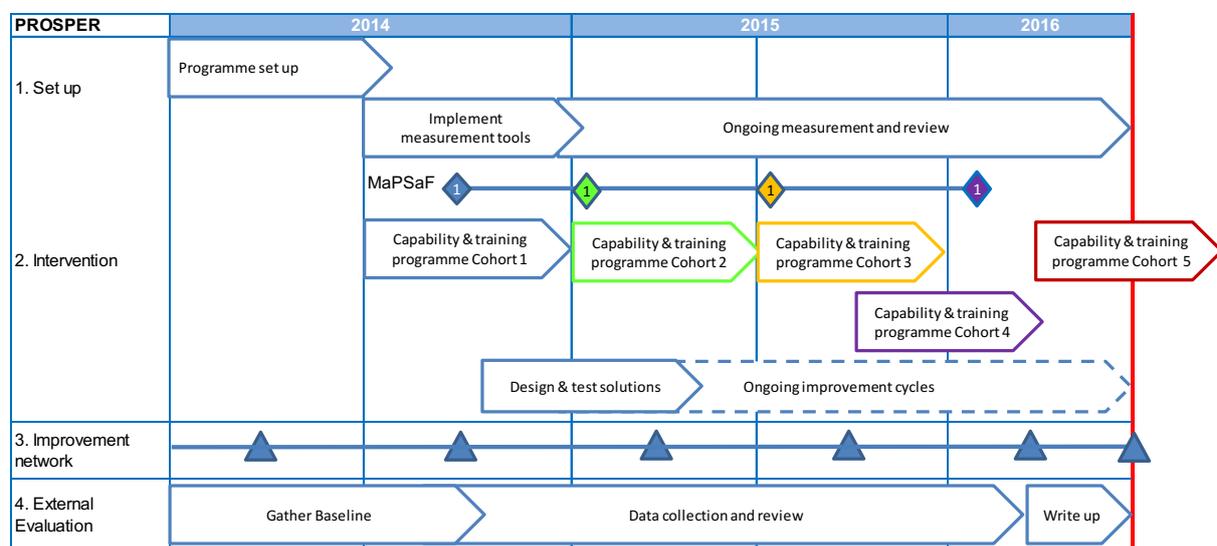
Immediate challenge:

- Rolling out the programme to the final cohort of care homes in Essex before the end of the programme.
- Obtaining funding to continue the programme in Essex beyond the completion of the pilot in the summer of 2016
- Achieving behaviour change in staff, care home owners to improve outcomes for care home residents

Long-term challenge:

- Achieving behaviour change in commissioners to prioritise PROSPER
- Diffusing improvements resulting from the pilot across England

2. Programme timeline



Milestones/Comm’s opportunities

November 2015

- **Cohort 4 commencement**

January 2016

- **Health Foundation 3rd progress report due (15th Jan)**
- **Pan Essex Dementia Friendly Network launch (20th Jan)**

February 2016

- **Prosper champions’ study days to take place**
- **Dignity in Care Day (1st Feb)**

March 2016

- **Prosper community of practice events**

- NHS England Think Kidney AKI in care homes project working with Prosper homes – attending community of practice
- NHS England Nutrition Hydration Week (14th – 20th March)

April 2016

- **Commencement of Cohort 5**
- International Forum on Quality and Safety, Gothenberg – poster display

May 2016

- Dementia Awareness week (18th-24th May)

June 2016

- **The Prosperers – award ceremony**
- **Health Foundation final report and evaluation due**
- **End of award**
- National care home open day (17th June)

3. Stakeholders

Easier to reach groups (or established relationships)

- Residents and relatives
- Care home staff in pilot
- Care home owners in pilot
- Local government commissioners in Essex
- NHS commissioners in Essex
- Health Foundation
- Patient groups and local Health Watch
- Community Health Providers in Essex

Harder to reach groups (or relationships not established)

- Care home staff (outside of pilot)
- Care home owners (outside of pilot)
- Local government commissioners (outside of pilot)
- NHS commissioners (outside of pilot)
- CQC
- Department of Health and local government
- Research community (HSRUK, CLAHRCs, AHSNs & focused academic networks)

A different approach to communications will need to be taken with stakeholders depending on whether they have already been engaged with the project. For example, staff that have taken part in the pilot may be more interested in seeing their progress and contribution to the success of the pilot in order for the positive behaviour change to continue. Staff not already engaged in the project, would be interested in what the benefit to them is as well as the benefit to patients.

4. Key messages

The following key messages are suitable for the project as a whole, but will need to be adapted for key audiences. The proof points below each key message are used to bolster communications by providing evidence for the message.

- 1. The PROSPER programme is encouraging a positive change of culture in care homes in Essex through a focus on education, measurement and open conversation**
 - As of March 2016, about two-thirds of homes reported an emerging change in safety culture
 - Care homes are robustly measuring outcomes for residents, and trends in these outcomes are being closely monitored
 - Care homes are reporting a shift towards defining safety as preventing harm for residents rather than avoiding incidents due to inspections and safeguarding concerns.

- 2. PROSPER is enabling care homes to focus on proactive prevention of incidents to improve resident outcomes**
 - Care homes are reporting greater focus on proactive prevention and monitoring of safety incidents with a strong engagement with using comparative data

- 3. PROSPER is empowering staff in Essex care homes through education and improved knowledge of health issues**
 - Homes receive training in quality improvement methods, a resource toolkit, tools to help monitor change in safety culture and resident outcomes, opportunities to meet and share learning with other homes and support visits from council improvement facilitators
 - Carers have reported feeling that they have a key role to play in improvement, rather than a more narrowly defined role washing or cleaning.
 - Staff are encouraged to trial and test new approaches and measure the results, along a *PDSA* cycle
 - There is early evidence of a possible change in the dynamic between some home managers and their staff, with some staff feeling more empowered to lead change and innovate than has been the case in the past.

- 4. The PROSPER model can be replicated and adapted in any area of the country**
 - The model of engagement with care homes has been adopted by *Think Kidney* in the development of their AKI resources for care homes. 12 Prosper homes are part of the test pilot. Prosper project team is part of the working group developing the resources.

5. Outline of communications approach

Principles:

- Play to USPs of the study: improvement in care homes highly topical, solutions lie in ideas and actions of front line staff, high level of interest in how health and social care can work and learn together, commitment to evaluation
- Use project partners as agents for disseminating learning - we need to identify champions
- Influence using established networks wherever possible
- Use multiple methods persistently to get messages across

6. Communications aims and objectives

Aim: Raise awareness of the PROSPER programme to:

- Encourage uptake in care homes in Essex,
- Spread and diffuse the learning from the pilot to support the case for national roll out.

Addressing the immediate challenge (outlined on page 5):

Target audience	What we want them to think about	Method
Residents and relatives	- Their loved ones are receiving the best care with the help of the PROSPER model	- Newsletters - Social media - Traditional media
Care home staff	- How they add value as employees - What they can do to improve outcomes for residents - How they can proactively instigate change - The importance of learning new skills	- On-site conversations, stories about success and challenges elsewhere - Newsletters (printed) - Seminars, workshops - Social media
Care home owners	- Systematic improvement methods add value and achieve results - Small changes make differences - Staff are an important untapped resource for improvement - CQC values improvement programmes - Data and process audits help inform continuous improvements - The importance of continuing the programme's approach	- Newsletters - Personal conversations at local level and with national corporations - Commissioning/provider events

Target audience	What we want them to think about	Method

Addressing the long-term challenge (outlined on page 5):

Target audience	What we want them to think about	Method
NHS commissioners	<ul style="list-style-type: none"> - GP practices and ambulance services need support to work with care homes - Reduction in 999 call outs and inappropriate hospital admissions may be possible and is an important aim - There is much that health could learn from improvement in the care home sector 	<ul style="list-style-type: none"> - Personal conversations - CCG newsletter - Via agenda item on Health and Wellbeing Boards - Through AHSN networks
CQC	<ul style="list-style-type: none"> - Engagement with systematic improvement should be valued as part of the regulatory regime - Regulation can encourage spread of improvement learning 	<ul style="list-style-type: none"> - Homes promoting what they have achieved during CQC inspections - Regional forum meetings - Locality information sharing meetings
Department of Health and local government	<ul style="list-style-type: none"> - Improvement methods can be transferred between sectors but need adapting - Building capacity and capability for improvement requires time and investment - Learning from our engagement with care homes 	<ul style="list-style-type: none"> - National, local conferences - National websites - Open letter to Alistair Burt / Jeremy Hunt
Research community through; HSRUK, CLAHRCs, AHSNs, Patient Safety	<ul style="list-style-type: none"> - Importance of evaluating new QI/safety approaches in new sectors, learning from transferring methods between sectors 	<ul style="list-style-type: none"> - Peer reviewed publications - Publications in professional journals - Conference and seminar presentations

Collaborative& Focused Academic Networks	- Benefits of embedding evaluation into QI programme, using participatory methods	- Blogs - Through AHSN and CLAHRC networks - Spreading best practice stakeholder event
Media (local, national, trade)	- PROSPER is a positive project to improve outcomes for people in care homes	- Press releases to local media on improvements and activities in specific homes e.g. “no frame is the same” - Share learning in HSJ resources article

In addition to the above activities, the following tools would aid the promotion of the PROSPER programme

- Creation of an information toolkit, to be used by the project team to facilitate communications with range of audiences, such as AHSNs and Patient Safety Collaboratives. Toolkit to include:
 - Executive summary of the project
 - Case studies of good improvement
 - Presentation slide deck showing outcomes and lessons learned
- Creation of an infographic/animation to explain the project simply for potential commissioners, care homes, staff and public. To be published on partner websites and used at events and presentations
- Development of care home staff as spokespeople for the programme. Gaining insights from staff will add authority to conversations with potential commissioners and care homes. Staff could speak at events or videos could be recorded of their experiences

Events and awards to consider:

Conferences and awards can be a very easy way to raise the profile of a programme (as has been experienced already for PROSPER). It is likely that UCLPartners will have some form of exhibition presence at these conferences, but speaker and workshop opportunities should be investigated.

- NHS Confed – 15-16 June 2016
www.nhsconfed.org/conference/join-us-in-2016
- Health + Care (Commissioning Show) – 29-30 June 2016
www.healthpluscare.co.uk/
- Patient Safety Congress and Awards – 6-7 July 2016
www.patientsafetycongress.co.uk/

