The different impact of providing enhanced support in residential and nursing homes in Rushcliffe

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Summary

The NHS Long Term Plan commits to improve NHS support to all care homes, including rolling out the Enhanced Health in Care Homes (EHCH) model across all of England. This briefing summarises the findings of an analysis² that builds on the previous research on enhanced support in care homes in Rushcliffe, to examine whether the differences in the services and resident characteristics in nursing and residential care homes affect the ability of the enhanced support to improve residents' emergency hospital use.

This briefing was originally produced for the Principia team in Rushcliffe in February 2019, to provide evidence as they continue to improve the enhanced support service to care home residents in their area. As it can also inform the development of plans by NHS England and NHS Improvement and other local teams looking to implement the EHCH model as part of the NHS Long Term Plan, we have updated and made publicly available this briefing in September 2019.

In residential care homes, we found that Principia residents had on average 50% fewer admissions for conditions that were potentially manageable, treatable or preventable outside of a hospital setting, or that could be caused by poor care or neglect, ^{4,5} than the matched control group. We also found that Principia residential care home residents had 40% fewer emergency admissions and 43% fewer A&E attendances than the matched control group. There was no conclusive evidence of a difference in number of hospital bed days, outpatient appointments or proportion of deaths that occurred outside of hospital (as a proxy for dying in the preferred place).

In nursing homes, we found no conclusive evidence of a difference between Principia and the matched control group across any of the outcomes that we looked at.

We also looked at national rates of emergency hospital use for care home residents aged 65 or over in England. We found that these were higher for residential care homes than nursing homes. Residential care home residents had on average 0.77 emergency admissions per person per year, compared with 0.63 for nursing home residents, and 1.12 A&E attendances per person per year, compared with 0.85 in nursing homes.

The higher national rates in residential care homes, even though we would expect these residents to be less severely ill than nursing home residents, suggests that, in the absence of regular access to clinical knowledge, health problems are not detected and addressed as early as they could be, or that staff do not feel confident to make decisions regarding their residents' health, therefore relying more on A&E and emergency services.

Our findings indicate that improvement programmes such as the Principia enhanced support have more potential to reduce A&E attendances and emergency admissions among residents in residential than nursing homes. This evidence therefore suggests that Sustainability and Transformation Partnerships (STPs) and Integrated Care Systems (ICSs) developing plans for supporting residents in care homes in response to the Long Term Plan should consider prioritising residential care homes if the principal objective is to reduce emergency hospital use.

This does not mean that there is not scope for improvements in nursing homes too, especially as there are other aspects to quality of care than emergency admissions, such as quality of life. It may be that 'usual care' in nursing homes already encompasses some of the elements of the enhanced support, making further reductions in emergency admissions more challenging. Therefore, a more targeted approach, including regular reviews of residents' hospital admissions to help identify and track reasons for unnecessary A&E attendances and emergency admissions and residents of particular concern, will be required. To be able do this effectively, staff caring for residents need access to these data as an important step towards further improving care. Furthermore, although good working relationships between health care professionals and care home staff is an important factor for the successful implementation of improvement programmes in both types of care homes, more engagement and greater focus on establishing good working relationships may be required in nursing homes.

Purpose of this study

Older people living in care homes increasingly have complex care needs. An analysis by the Improvement Analytics Unit (IAU) estimates that 7.9% of all emergency admissions for people aged 65 or over are for care home residents. Caring for older care home residents is a key priority for the health and care system in England; in January 2019, the NHS published the Long Term Plan, which set out to improve NHS support to all care homes, rolling out the EHCH model across all of England in the next decade. The EHCH model includes enhanced primary support, including access to a consistent named GP and medicine reviews; multi-disciplinary team support, including coordinated health and social care; rehabilitation/reablement services to promote independence; end-of-life and dementia care; joined-up commissioning and collaboration between health and social care; workforce development; and improved data, IT and technology.

A study quoted in the Long Term Plan¹ as an example of a successful implementation of the EHCH model, was the IAU evaluation of the enhanced support in care homes in Rushcliffe.³ The Principia enhanced support was introduced in Rushcliffe in April 2014 and although it predates the EHCH framework, the elements of the improvement programme are similar. The IAU evaluation, published in March 2017, estimated that older people moving to participating care homes had 29% fewer A&E attendances and 23% fewer emergency admissions than a matched control group consisting of similar individuals living in care homes of a similar type in other areas of England.

The purpose of this study was to provide the Principia team with information that can help them identify areas for further improvement in care homes. As NHS England and local teams look to implement the EHCH model in care homes set out in the Long Term Plan, this study also aims to provide insights to inform this implementation. This briefing summarises and discusses the findings of the study; these were discussed with members of the Principia team at an informal workshop in November 2018. Further details on the enhanced support, methods or results can be found in the published academic paper.²

Residential and nursing homes differ in the services they provide (with nursing homes having access to in-house nursing support) and in the characteristics of their residents. Nonetheless, there is, to our knowledge, no research into understanding how these differences may affect the outcomes of care home improvement programmes. Such information will be important to inform policy on how improvement programmes in care homes should be implemented. Therefore, we set out to do a subgroup analysis of the Principia enhanced support in residential and nursing homes separately, to examine whether these differences in context affect the ability of the enhanced support to improve residents' emergency hospital use.

One of the objectives of the EHCH model was to reduce emergency hospital use, as emergency admissions can be detrimental to older people's health and wellbeing, exposing them to stress and risk of infection, reducing a person's health and wellbeing after leaving hospital. Although emergency admissions are often necessary, many emergency admissions may be avoidable and could have been managed outside of a hospital setting. Emergency hospital care is also the most expensive element of the health service and in a cost-constrained system needs to be carefully managed. If some emergency admissions from care homes can be avoided, this might be good for both the individuals concerned and the NHS.

The Principia enhanced support intervention

The enhanced support was introduced in April 2014 in 14 residential and 10 nursing homes caring specifically for older residents. During the period of our study (August 2014 to August 2016), the enhanced support consisted of aligning each care home with a general practice; regular visits from a named GP; multidisciplinary team working and increased partnership working between GPs, community staff and care homes; proactive medicine reviews; dementia assessments and monitoring; improved support from community nurses including training and peer-to-peer support; independent advocacy and support from the third sector; and a programme of work to engage and support care home managers. These elements are similar to those of the EHCH model, a notable exception being data and IT. There were, however, some differences in the implementation between residential and nursing homes, relating to the work of community nurses:

- The training provided by community nurses was delivered to all health care assistants in residential and nursing homes but was optional for nurses in nursing homes.
- Community nurses typically attended nursing homes less frequently than residential homes.
- Community nurses accompanied GPs on the regular resident review rounds in residential care homes but not in nursing homes.
- Community nurses provided peer-to-peer nurse support in nursing homes.

What the study looked at

We looked at people aged 65 or over who moved into a care home between August 2014 and July 2016. They had to have been admitted to hospital in the two-year period before moving to a care home, so that there could be information on long-term conditions available from hospital records.

To examine whether the enhanced support led to changes in hospital use, we compared the outcomes of Principia residents with those of a 'matched control' group, a group of residents who were as similar as possible to the Principia residents but did not receive the enhanced support. Comparing results against a matched control group often gives more reliable results than, for example, before-and-after analyses.*

We compared outcomes separately for residential and nursing home residents. We also compared the results between the residential and nursing homes to determine whether the enhanced support had a different impact in the residential homes than in nursing homes.

We selected separate residential and nursing matched control groups from six comparison areas with similar demographics, standardised rates of emergency admissions and levels of socio-economic deprivation to Rushcliffe. The matched control residents within each type of care home (ie nursing or residential) were selected to have similar characteristics (eg age, gender, long-term conditions and number of emergency admissions in the year before moving to a care home) to the Principia residents. Furthermore, the care homes were chosen to have similar care home characteristics (eg number of beds) and to be in areas of similar levels of deprivation to the Principia care homes.

We examined residents' emergency hospital use (A&E attendances, emergency admissions and emergency admissions for conditions that were potentially manageable, treatable or preventable outside of a hospital setting)^{4,5} but also some other measures (number of hospital bed days, outpatient attendances and proportion of deaths outside of hospital), over the period August 2014 to August 2016.

We used pseudonymised[‡] data categorising care home residents linked to pseudonymised patient-level hospital data, supplied by NHS England's and NHS Improvement's National Commissioning Data Repository under a data processing agreement with the Health Foundation.

Principia: supplementary evidence

^{*} Lloyd, T. Why before-and-after analyses can give misleading results. The Health Foundation; 2018 (https://www.health.org.uk/newsletter-feature/why-before-and-after-analyses-can-give-misleading-results).

We identified residents of residential and nursing homes using information from the Care Quality Commission (CQC). The CQC data does not distinguish between nursing homes and 'dual registered' care homes (that provide care both with and without nursing). Therefore, there will be some residents receiving only personal care from care home staff in the nursing home group.

Pseudonymised means that all direct IDs (eg name, address, date of birth, NHS number for patients) are removed from the data. Pseudonymisation reduces the risk that individual patients can be identified from the data.

Results

Comparison of the characteristics of people moving to residential and nursing homes

We found that Principia residential care home residents had on average fewer health conditions than Principia nursing residents (for example, there were fewer residents with cancer and chronic pulmonary disease in residential care homes than nursing homes). They also used less hospital services in the year before moving to the care home and fewer died during the study period (27% vs 41%). Principia residential care home residents had, however, similar levels of frailty to their nursing home counterparts: for example, the percentage of residents who had a significant fall or fracture in the two years before moving to a care home were similar between residential and nursing home residents. Principia residential care home residents were on average in the study for nine months, while the Principia nursing home average was six months. This is because residential care home residents were less likely to die during the study period.

In residential care homes, the matched control group was similar to Principia residents across most resident and care home characteristics, although the Principia residents had a pattern of slightly higher levels of health conditions and hospital use in the period before moving to the care home. In nursing homes, the Principia and matched control groups were somewhat less similar but there was no pattern to the differences. We adjusted for some of these remaining differences in the statistical methods we used when comparing the outcomes.

Comparisons of emergency hospital use

In residential care homes, Principia residents had on average 0.20 potentially avoidable emergency admissions per person per year, compared with 0.40 in the matched control group (Table 1). After adjusting for the remaining differences in characteristics between the groups, we estimated that Principia residential care home residents had on average 50% fewer potentially avoidable emergency admissions than the matched control group. The 95% confidence interval, which gives a sense of the uncertainty in the estimate, shows that the actual difference is likely to lie between 70% and 18% fewer potentially avoidable emergency admissions (Table 2).

Table 1. Crude rates of emergency hospital use (number of events per person per year)

	Residential care homes		Nursing homes	
	Principia	Matched controls	Principia	Matched controls
Potentially avoidable emergency admissions	0.20	0.40	0.24	0.20
Emergency admissions	0.59	0.93	0.68	0.53
A&E attendances	0.82	1.33	0.68	0.69

Table 2. Relative differences in emergency hospital use after adjusting for differences between Principia and matched control groups

	Residential care homes		Nursing homes		
	Relative difference Principia compared with matched control group	95% confidence interval	Relative difference Principia compared with matched control group	95% confidence interval	
Potentially avoidable admissions	50% lower	70% to 18% lower	17% higher	24% lower to 81% higher	
Emergency admissions	40% lower	58% to 14% lower	15% higher	15% lower to 56% higher	
A&E attendances	43% lower	60% to 19% lower	4% higher	22% lower to 38% higher	

Principia residential care home residents experienced on average 0.59 emergency admissions per person per year, compared with 0.93 in the matched control group. After adjustment, Principia residents experienced on average 40% fewer emergency admissions (95% confidence interval 58% to 14% fewer) than their matched control group.

Principia residential care home residents had on average 0.82~A&E attendances per person per year, compared with 1.33 in the matched control group. After adjustment, Principia residents experienced on average 43% fewer A&E attendances (95% confidence interval 60% to 19% fewer) than their matched control group.

In nursing homes, we found no conclusive evidence of a difference between Principia and the matched control group across any of the outcomes (Tables 1 and 2).

When we compared the results between the residential and nursing home subgroups, we found that the differences in results in emergency hospital use were statistically significant. In other words, we can be confident that the relative difference (compared with the matched control group) in emergency hospital use was greater in residential than nursing homes.

Comparisons of other hospital use

There was no conclusive evidence of a difference between the Principia and matched control groups in the number of hospital bed days, outpatient appointments or proportion of deaths that occurred outside of hospital (as a proxy for dying in the preferred place), in either residential or nursing homes.

National analysis of emergency hospital use

Our data set allowed us to look at the hospital use of care home residents across England.

We therefore looked at the subset of care home residents in England who were similar to those in this study. We included those residents who were aged 65 or over, had at least one hospital admission in the two years before moving to the care home, and moved to a care home caring for older people between January 2015 and January 2017. Looking nationally, these residential care home residents tended to have higher rates of emergency hospital use than nursing home residents, even though we would expect them to be less severely ill (Table 3). For example, residential care home residents were admitted to hospital as an emergency 1.04 times per person per year on average, compared with 0.87 for nursing home residents. The difference was greater for A&E visits, with residential care home residents experiencing 1.44 of these per person per year on average, compared with 1.10 for nursing homes. Rates of potentially avoidable admissions were more similar between the residential and nursing homes (0.39 vs 0.36).

Another analysis by the IAU⁷ looked at all care home residents aged 65 or over (that is, irrespective of when they moved in or their prior history of hospital use) in England in the year 2016/17. As this reflects the overall care home population, we present these figures here as well (Table 3). Again, residential care home residents have higher rates of emergency admission (0.77 vs 0.63 per person per year) and A&E attendances (1.12 vs 0.85 per person per year) than nursing home residents. These numbers are lower than in the national subset population; this makes sense, as the subset population is likely to be sicker (given they were all admitted to hospital in the previous two years) and also it is possible that residents are in a more unstable condition when they first move to a care home.*

Principia: supplementary evidence

^{*} See the matched control group trends in Figure 3 (page 13) of the original Principia evaluation: https://www.health.org.uk/sites/default/files/IAURushcliffe.pdf

Table 3. Crude rates of emergency hospital use for care home residents aged 65 or over across England (number of events per person per year)

	Residential care homes	Nursing homes
Residents aged 65 or over moving to care homes caring for older people during the period mid-January 2015 to mid-January 2017 in England, with a hospital admission in prior two years, are included	N=66,236	N=81,491
Potentially avoidable emergency admissions	0.39	0.36
Emergency admissions	1.04	0.87
A&E attendances	1.44	1.10
Residents aged 65 or over during the period mid-April 2016 to mid-April 2017 in England*	N=193,000	N=213,000
Potentially avoidable emergency admissions	0.30	0.27
Emergency admissions	0.77	0.63
A&E attendances	1.12	0.85

^{*}This is equivalent to on average 135,000 residential care home residents and 139,000 nursing home residents aged 65 or over living in care homes at any point in time.

Discussion

As STPs and ICSs develop plans to realise the ambitions of the Long Term Plan to improve NHS support to care homes and reduce unnecessary emergency admissions, more information is needed on how improvement programmes work in different contexts. This study examined the effect of the Principia enhanced support in residential and nursing homes and found that Principia residents in residential care homes had significantly lower rates of emergency hospital use that their matched controls.

Main strengths and limitations of the study

This study examined the hospital use of Principia care home residents and found that Principia residential care home residents had lower rates of emergency hospital use than the residential matched control group. Emergency care outcomes are important metrics, as preventing avoidable A&E attendances and emergency admissions is beneficial to residents

and was one of the objectives of the EHCH. However, there are other metrics, such as resident quality of life or staff satisfaction, which are important but that we could not examine, as these data were not available.

While the Principia and matched control groups were similar across a range of observable characteristics, they might differ in ways that could not be observed, for example in terms of their social isolation, receptiveness to new approaches to managing their conditions or differences in care provision other than the enhanced support. We cannot rule out that any unmeasured differences could explain some or all of the difference we observed between Principia and matched control residents. However, the checks we were able to complete did not indicate any particular differences between the areas.²

Mechanisms and interpretation

Assuming that the difference in emergency hospital use between residential and nursing homes is due to a difference in impact of the enhanced support, there could be a number of potential contributing factors. The hypotheses below are compatible with what we can see in the data and were considered reasonable by the attendees of an informal workshop discussion, held in November 2018, consisting of members of the Principia team including GPs, care home managers, community nurses and CCG care home leads.

1. The intervention might have been applied differently in residential and nursing homes.

There were some differences in how the community nurse support and training operated, with training being delivered to all health care assistants in both nursing and residential care homes but optional for nurses in nursing homes, and community nurses typically attending nursing homes less frequently than residential homes and therefore having fewer opportunities to identify a need for training and to share information and good practice in nursing homes than in residential homes. According to the Principia workshop attendees, this meant that residential care home staff received more training than nursing home staff.

The additional training and more regular contact between residential care home staff and community nurses may have also improved the quality of the relationships and helped establish community nurses as a useful point of contact when care home staff are concerned about a resident's health. Principia workshop attendees noted that there was less engagement from certain nursing homes and less interactions between the nursing home nurses and the GPs and community nurses during the period covered by the study. Closer relationships have since been developing and the team stressed their belief in the importance of these relationships in the success of the enhanced support.

2. The enhanced support was more effective in residential care homes than in nursing homes even if applied in the same way.

Residential care homes do not have routine access to in-house nursing, as nursing homes do. It may be that, in the absence of regular access to clinical expertise, health problems are not detected and addressed as early as they could be or not managed as well, or that staff do not feel confident to make decisions regarding their residents' health, therefore relying more on emergency services. This is consistent with our national data, which shows residential care home residents have higher rates of A&E attendances and emergency

hospital admission than nursing home residents, even though we would expect them to be on average less severely ill. As such, the impact of regular GP and community nurse visits and training may be greater in residential care homes, increasing the staff's ability to proactively manage health risks and reducing their reliance on emergency services.

3. Residents of residential care homes might have been more amenable ('impactible') to the additional support than residents of nursing homes.

Residential care home residents, while frail, had in general fewer health conditions and were less likely to die during the study period than nursing home residents. Nursing home residents, in contrast, had higher rates of conditions such as cancer and chronic pulmonary disease and were more often nearing their end of life. Given nursing home residents' clinical history and the shorter average time spent in the home, there may be more limited scope to reduce their hospital use.

4. What qualifies as 'usual care' may differ between residential and nursing homes.

Principia workshop attendees observed that before the introduction of the enhanced support, GPs (although not aligned to care homes) were visiting nursing homes on a more regular basis than in residential care homes. Introducing one aligned general practice for each care home and, within it, a named GP who regularly visited the home, created a more structured, coherent approach in nursing homes, as well as expanding the service to residential care homes. It may be that other nursing homes outside of Rushcliffe may also be benefitting from more regular GP contact than in residential homes, ^{9,10,11} thereby limiting the difference between 'usual care' and the enhanced support in nursing homes. This may be particularly true in the matched control nursing homes, which had on average lower rates of emergency hospital use than nursing homes nationally (Tables 1 and 3). This could be affecting our ability to detect an impact in Principia care homes.

Furthermore, the attendees observed that the nursing home residents in general had more well-defined and pre-terminal conditions and were therefore more likely to have predicted medical pathways and more established end-of-life planning, even in the absence of the enhanced support. This may also be the case in the matched control nursing homes. Staff may therefore feel more able to make decisions on whether not to admit nursing home residents to hospital.

Interpretation

For more certainty on what factors are driving the results, we would need a qualitative evaluation that could investigate the outlined factors, as well the interplay between them. For example, a qualitative evaluation could investigate the importance of good working relationships in implementing the enhanced support and how best to improve these within the different care home contexts.

In the absence of an in-depth qualitative evaluation, we suggest that, although all factors are likely to have contributed to the difference in results between residential and nursing homes to some extent, the two main reasons for the difference in results are likely to be around good working relationships and what 'usual care' looks like in residential and nursing homes.

Several studies have pointed towards the importance of care home and NHS staff working together as partners^{12,13} to co-design and implement agreed approaches to health care¹⁴ and of acknowledging care home staff's knowledge and skills.¹⁵ This may be particularly important in nursing homes, where staff include nurses with clinical expertise, who may feel more ownership of their residents' clinical needs. Improvement programmes in nursing homes may therefore require more engagement and emphasis on co-production in order to build good working relationships and co-develop the elements of the intervention.

Conclusions and policy implications

This study builds on the IAU evaluation of the Principia enhanced support in care homes between August 2014 and August 2016 published in March 2017. The findings were quoted in the Long Term Plan as an example of a successful implementation of the EHCH model. As NHS England and local teams look to implement the EHCH model in care homes, this study provides insights to inform those decisions.

Although Principia have continued to improve their services in care homes since the study period, these findings remain relevant to implementation of the enhanced support in Rushcliffe today as most of the components of the enhanced support during the study period are still in place. As the intervention continues to evolve, the learning from this study provides important insights that could drive further improvement.

We found that the significantly lower rates of A&E attendances and emergency admissions seen in the original study were driven by the results in residential care homes. We also found that there were fewer potentially avoidable admissions for Principia residential care home residents than in the residential matched control group. We could find no conclusive evidence of a difference across any of the outcomes that we looked at for nursing home residents.

Our analysis also showed that, nationally, residential care home residents tend to have higher rates of A&E attendances and emergency admissions than nursing home residents – even though we would expect these residents to be less severely ill than nursing home residents. This suggests that, in the absence of regular access to clinical knowledge, health problems are not detected and addressed as early as they could be or not managed as well, or that staff do not feel confident to make decisions regarding their residents' health, therefore relying more on A&E and emergency services.

Our findings indicate that residential and nursing home residents have different characteristics and use emergency hospital services differently, and that improvement programmes such as the Principia enhanced support have more potential to reduce emergency hospital use among residents in residential than nursing homes. This evidence therefore suggests that STPs and ICSs developing plans for supporting residents in care homes in response to the Long Term Plan should consider prioritising residential care homes if the principal objective is to reduce emergency hospital use.

This does not mean that there is not scope for improvements in nursing homes too, especially as there are other aspects to quality of care than emergency admissions, such as quality of life. It may be that 'usual care' in nursing homes already encompasses some

of the elements of the enhanced support, making further reductions in emergency admissions more challenging. Therefore, a more targeted approach, including regular reviews of residents' hospital admissions to help identify and track reasons for unnecessary A&E attendances and emergency admissions and residents of particular concern, will be required. ^{13,16,17} To be able do this effectively, staff caring for residents need access to these data as an important step towards further improving care. Furthermore, although good working relationships between health care professionals and care home staff is an important factor for the successful implementation of improvement programmes in both types of care homes, more engagement and greater focus on establishing good working relationships may be required in nursing homes.

To our knowledge, this study provides insights for the first time about the difference in impact in residential and nursing homes on the outcomes of a care home enhanced support programme. It provides valuable insights for Principia, and others implementing enhanced support programmes, and demonstrates the case for further studies that evaluate changes in residential and nursing homes separately to build confidence in the generalisability of the findings and an improved understanding of the mechanisms of change in each care home setting.

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