



Benchmarking Network

Positive deviance in intermediate care services

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Positive deviance in intermediate care services

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1. Introduction

The positive deviance approach originated in the field of international public health and has been used more recently to improve quality and safety in healthcare organisations. The approach focuses on those health care services who demonstrate exceptional (or positively deviant) performance in a particular area, despite facing the same constraints as others. The methodology can be applied to organisations, teams or services. The initial trials of the methodology, undertaken by the Yorkshire Quality and Safety Research Group (YQSR), a collaboration between the Universities of Leeds, York and Bradford, have concentrated on patient safety within health care. “Positive deviants” are identified and hypotheses about how they succeed are generated. The hypotheses are then tested back with teams, services or organisations, and the findings disseminated through the community of service providers, in order that other teams can adopt the characteristics of the positive deviants. There is however, limited application within health care systems due to the need to have relevant data sets with high quality data. The YQSR have tested the methodology with older people wards in the Yorkshire area (wards experiencing higher levels of harm free care as per the NHS Safety Thermometer), and using 28-day emergency readmissions and existing national PROM datasets on hip and knee replacements.

The National Audit of Intermediate Care (NAIC) has run from 2012 to 2015 (as a subscription model), and again in 2017 and 2018 (funded by NHS England, the Welsh Government and the Northern Ireland Public Health Agency and Health and Social Care Board). The audit is unique in that it collects standardised clinical outcome measures as well as a Patient Reported Experience Measure (PREM). The PREM is a validated tool to garner service user/carer feedback on their experiences of intermediate care. The audit also contains a full organisational dataset collecting information on the service (activity, workforce, finance, service models, etc). The data covers intermediate care services from England, Wales and Northern Ireland. In view of the comprehensive nature of the dataset, initial discussions took place with the three universities to assess whether the NAIC dataset might be a suitable vehicle to test out the positive deviant methodology.

The standardised clinical outcome measure used for home based services is the Sunderland Community Re-ablement Scheme score (adapted from the Derby Outcome Measure) and, for bed based services, is the Modified Barthel Index (MBI). These standard clinical outcome measures assess of the functioning of patients with disabling conditions in relation to activities of daily living. These measures were adopted for intermediate care services as they are used to measure functional dependency across a number of domains which are closely aligned with the aims of intermediate care services. **Appendix 1** contains the Sunderland Community Re-ablement scheme and **Appendix 2** contains the Modified Barthel Index.

The PREM is completed by the service user, or their carer, once they have completed their episode of intermediate care and collects key domains of patient experience. The PREM summary score is an overall composite PREM score for an intermediate care service which can be compared to the nationally reported position. The PREM summary score is scored out of 12 for home based services and 14 for bed based services. **Appendix 3** contains the PREM used for home based services and **Appendix 4** contains the PREM used for bed based services.



1. Introduction (cont.)

The following definition of intermediate care services was developed by the National Audit of Intermediate Care Steering Group:

What is intermediate care?

Intermediate care services are provided to patients, usually older people, after leaving hospital or when they are at risk of being sent to hospital. The services offer a link between hospitals and where people normally live, and between different areas of the health and social care system – community services, hospitals, GPs and social care.



What are the aims of intermediate care?

There are three main aims of intermediate care and they are to:-

- Help people avoid going into hospital unnecessarily;
- Help people be as independent as possible after a stay in hospital; and
- Prevent people from having to move into a residential home until they really need to.

Where is intermediate care delivered?

Intermediate care services can be provided to people in different places, for example, in a community hospital, residential home or in people's own homes.

How is intermediate care delivered?

A variety of different professionals can deliver this type of specialised care, from nurses and therapists to social workers. The person or team providing the care plan will depend on the individual's needs at that time.

The following service category definitions were developed by the NAIC Steering Group and have been used within the audit since 2012:

Home based intermediate care services are community based services provided to service users in their own home/care home. Home based intermediate care services offer intermediate care assessment and interventions supporting admission avoidance, faster recovery from illness, timely discharge from hospital and maximising independent living.

Bed based intermediate care services are provided within an acute hospital, community hospital, residential care home, nursing home, standalone intermediate care facility, independent sector facility, Local Authority facility or other bed based setting. Their primary function is prevention of unnecessary acute hospital admissions and premature admissions to long term care and/or to receive patients from acute hospital settings for rehabilitation and to support timely discharge from hospital.



1. Introduction (cont.)

Intermediate care services are typically used by older people with the average age of service users in home based intermediate care services being 80 years of age, and in bed based services, 82 (NAIC 2018). Interventions for the majority of service users will last up to six weeks, although frequently, will be much shorter. Services are delivered by a multi-disciplinary team, most commonly health staff (medical staff, nursing staff, therapy staff, support workers).

An initial workshop was held (March 2016), hosted by the Universities of Leeds and York, where the positive deviance methodology was introduced to the NHSBN Support Team. At this workshop, preliminary discussions were held with the two teams from the Universities about the potential application of the methodology. The YQSR agreed to act as a “critical friend” to ensure that the NHSBN Support Team were applying the positive deviance principles within the parameters of the methodology.

It was hypothesised that positive deviants could be identified from those intermediate care services which demonstrated positively deviant performance in terms of both clinical outcome for the patient (as measured by a positive change in dependency levels) and in patient experience (as measured by the patient themselves, through the PREM). It was agreed that the initial focus for trialling the positive deviance methodology within intermediate care services would be those service delivered in the community by home based intermediate care services, given the previous focus on bed based care in the initial work undertaken by the YQSR.

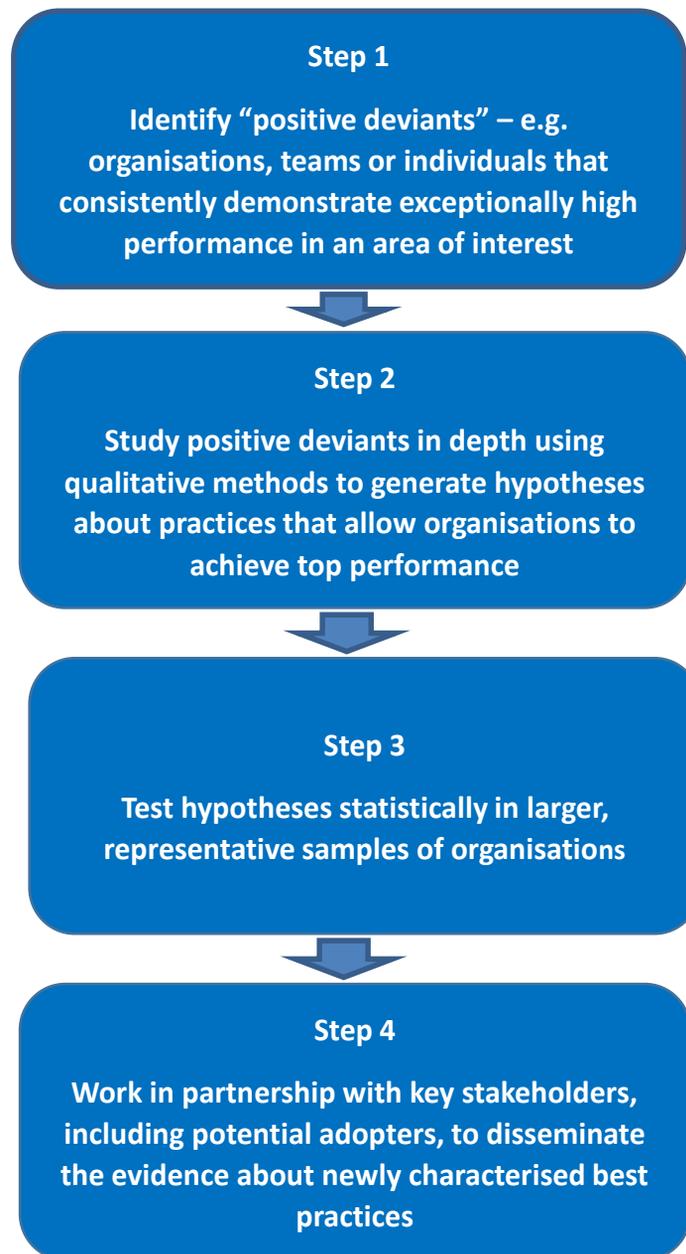
Network funding was made available to support a study to apply the positive deviance methodology to home based intermediate care services in 2016. The NHS Benchmarking Network Steering Group took the decision to fund a further study to apply the positive deviance approach to bed based intermediate care in 2018.



2. The positive deviance methodology

The positive deviance methodology has four key steps as outlined below:-

(Diagram modified from *Bradley, et al "Research in action: using positive deviance to improve quality of health care"* Implement Sci 2009; 4-25)



3. Project timescales

The timescales for the home based intermediate care study were as follows:

Step	Action	By when
1	Produce funnel plots for both measures for home based IC services within NAIC to identify positive deviants (using NAIC 2015 data)	May 2016
2	<ul style="list-style-type: none"> Set up workshops/interviews with positively deviant teams Generate hypotheses about the characteristics of home based positively deviant teams 	From September – November 2016 December 2016
3	Test out hypotheses generated for home based services on full NAIC 2018 dataset	September – December 2018
4	Dissemination of findings	May 2019

The timescales for the bed based intermediate care study were as follows:

Step	Action	By when
1	Produce funnel plot of Modified Barthel Index for bed based IC services within NAIC to identify positive deviants (using NAIC 2017 data)	March 2018
2	<ul style="list-style-type: none"> Set up workshops/interviews with positively deviant teams Generate hypotheses about the characteristics of bed based positively deviant teams 	June – September 2018 October 2018
3	Test out hypotheses generated for bed based services on full NAIC 2018 dataset	October – December 2018
4	Dissemination of findings	May 2019



4. Step 1 - Identifying the positive deviants

Measures utilised to identify positive deviants

The NHSBN team investigated those intermediate care services which:-

- appeared to effect the greatest improvement in patient dependency as measured by the change in the Sunderland Community Re-ablement Scheme score (see **Appendix 1**) or Modified Barthel Index (**Appendix 2**), and
- received positive service user experience of intermediate care services as measured by the Patient Reported Experience Measure (PREM) summary score (see **Appendix 3 and Appendix 4**).

For home based services the NAIC 2015 data set was used and, for bed based services, the NAIC 2017 data set was investigated.

Funnel plots

Funnel plots were produced to identify positive deviants within intermediate care services, using the methodology presented at the Positive Deviance workshop by YQSR. For each funnel plot, the sample size was plotted against the average percentage change in Sunderland Score (home based) and the MBI (bed based) for each service. It had been suggested by the team at the YQSR that two funnel charts should be plotted which would identify positive deviants in both areas, and that these should then be overlaid to assess which (if any) providers were positive deviants using both criteria.

Use of percentage change in outcome measure

The outcome measure collected is the Sunderland Community Re-ablement Scheme score for home based intermediate care services and the Modified Barthel Index (MBI) for bed based services. The indicator used to test the outcome measure was the service mean percentage change in Sunderland Score, or the service mean percentage change in the MBI index. Using the percentage change took into account the varying starting levels in dependency of the service users. However, using the percentage change meant that there was the possibility of individual patients having particularly high percentage increases in dependency, for example, if a patient has a very low Sunderland Score/MBI score on admission. In these cases, further investigation on outliers was undertaken on an individual basis.

Standard error

The standard error was calculated for each intermediate care service. Using this, control limits were calculated and are shown on the funnel plots on page 10. The dashed lines display the 95% control limit, so data outside this range has a 95% chance of being an outlier. Data outside the dotted lines has a 99.7% chance of being an outlier (with 99.7% of data typically lying with 3 standard errors of the mean). Funnel plots typically display two sets of control limits.

Standard error takes into account the sample size, with smaller sample sizes resulting in larger errors. While this reflects that more random variation can occur at small sample sizes, it means that it is not possible for those with a small sample size to be positively deviant using the above methodology, as they would require a percentage change in Sunderland Score/MBI score greater than 100%.



4. Step 1 - Identifying the positive deviants (cont.)

Use of PREM data

Use of PREM summary scores was investigated as a possible data indicator, as outlined earlier. The average sample size for a home based intermediate care service returning the PREM in NAIC 2015 was 17 from each service. The average sample size for a bed based intermediate care services in NAIC 2017 was 14 . However, because many organisations had low PREM return rates, it was concluded that the PREM data was not reliable or meaningful enough to use. It was therefore decided to utilise the percentage change in the Sunderland Community Re-ablement Scheme score/MBI score only to identify the positive deviant teams.

Identifying organisations

Organisations who lay outside either the 95% or 99.7% control limits were identified as either 'positive deviants' or 'negative deviants'. Organisations who were just above the overall mean average figure were also identified, as a control group.

Many previous healthcare applications of the positive deviance approach have compared positive deviants to negative deviants (the poorest performers), however, the YQSR team suggested that for this purpose, a team identified as being slightly better performing than average be approached as a control group (although not identified as being positively deviant) to explore how positive deviants achieve exceptional performance rather than just good/high performance

Investigation of outliers

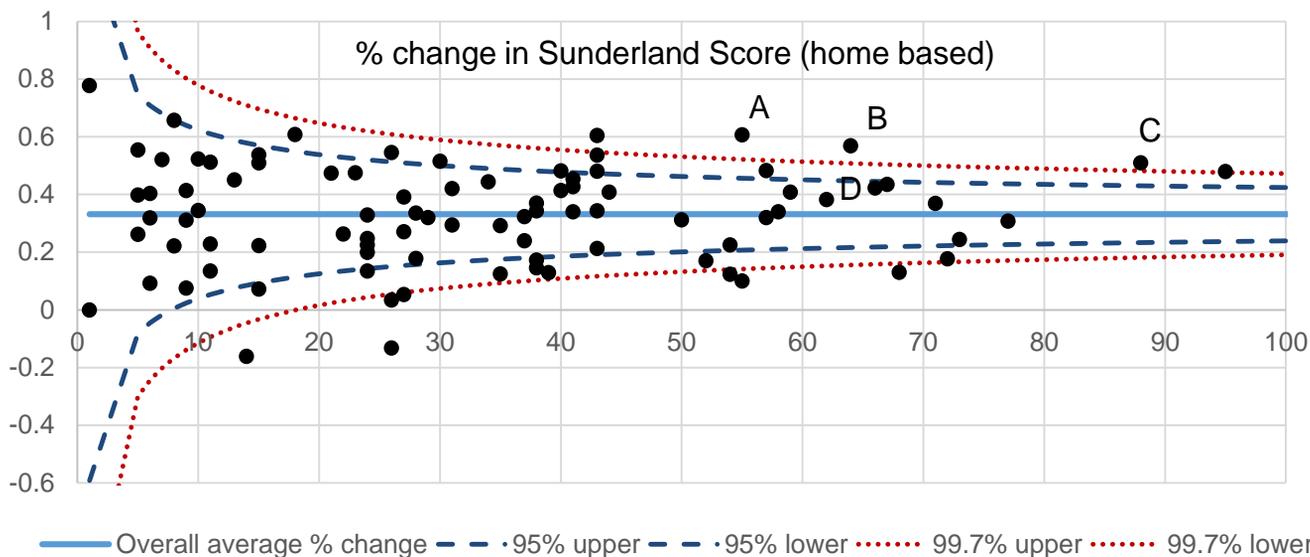
Further investigation was undertaken into organisations who appeared to be significant outliers and the reasons behind this, to ensure that any organisations identified as positively deviant were reasonable. Extreme values could be the result of using the percentage change as an indicator; individuals with particularly low initial or final score could have a particularly large or small percentage change. All outliers on the funnel plots have been investigated. In all cases, organisations identified as positively deviant remained positively deviant with the removal of their highest values.

Selecting positive deviant sites – home based

The funnel plot overleaf shows the analysis undertaken to identify which **home based** intermediate care services were identified as positively deviant. A control site with an above average percentage change in Sunderland Score was chosen. The control site had a similar sample size to the three chosen positively deviant sites. The letters on the funnel chart represent the four home based intermediate care services interviewed by the NHSBN support team; three positively deviant sites (A-C) and one control site (D).

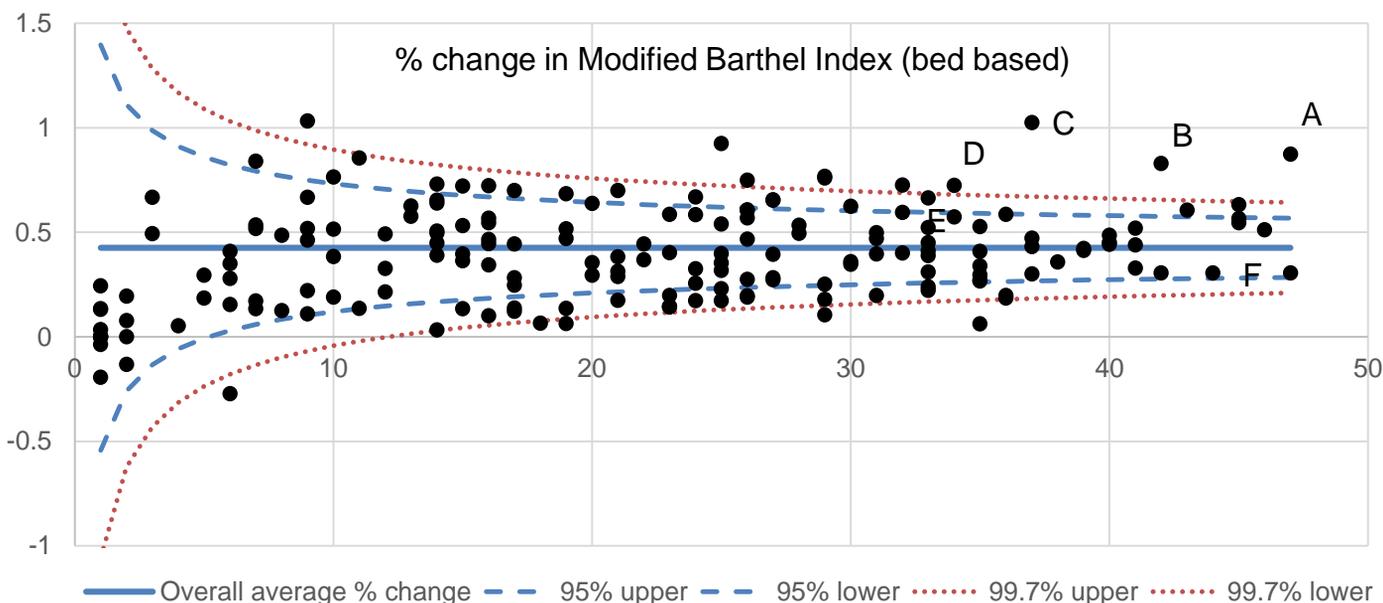


4. Step 1 - Identifying the positive deviants (cont.)



Selecting positive deviant sites – bed based

The funnel plot below shows the analysis undertaken to identify which **bed based** intermediate care services were identified as positively deviant. Four positive deviant bed based sites (A-D) were visited. Two control sites (E-F) with an above average percentage change in MBI were also visited



5. Step 2 - Qualitative analysis

It was agreed that the NHSBN Support Team approach the positive deviants identified in Step 1, and the control teams, and interview key members from the teams to generate hypotheses about positively deviant practice. The process involved travel to providers with identified positively deviant teams and the control group, and then in-depth interviews with teams. A workshop was held with each team which took up to 2 hours. All teams visited made the NHSBN Team welcome at the site visits. A standard ten to fifteen minute presentation was delivered prior to the workshop commencing, to explain the purpose of the visit, including the positive deviance methodology. Whilst teams didn't know whether they had been identified as positively deviant or a control site, they were keen to know once the study was completed.

Site visits for home based teams were carried out from September to November 2016. Site visits for bed based teams were carried out from June to September 2018.

One of the presentation slides contained areas that the NHSBN team wished to cover (see below), however it was noted that the list wasn't exhaustive and teams visited did cover other areas.

Qualitative analysis

We want to hear from you!

1. Tell us about your service
2. Qualitative analysis

...this list is not exhaustive!

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Home based key themes

There were five main themes which emerged from the discussions as being particularly common to those home based intermediate care teams which were identified as being positively deviant. These were as follows:-



5. Step 2 - Qualitative analysis (cont.)

The value of team working – was alluded to in a variety of guises by the positively deviant teams. Common themes discussed were:-

- That multi-disciplinary team working did make a difference to service users in respect of being able to offer a variety of therapeutic interventions.
- That the development of generic roles, and the transference of discipline specific skills to other disciplines, made a difference to the interventions which could be offered to service users, based around their individual need.

Feeling valued – teams reported that this was mainly in relation to:-

- Feeling valued by the organisation they worked in, and
- Feeling valued by the other team members.
- Feeling “listened to” and that the team’s feedback was treated seriously by the hierarchy within the organisations in which they sat (all teams interviewed operated under very different organisational forms, with both health and local government as employing organisations).
- Feeling valued by service users, often on the back of positive service user feedback. One team felt, however, that this was an area where the service could be more proactive, even though positive feedback had been received.
- Feeling that their service was valued by commissioners.

Feeling “protected” in a landscape where health and social care services were in a state of flux

– interestingly, all three positively deviant teams reported that their service had been “left alone” by the wider organisation/system within which they worked. This had manifested itself in a number of ways:-

- Being spared from having to contribute to internal cost improvement programmes/cost savings schemes, to the same extent as other services within their organisations.
- Two positively deviant teams reported having extremely good relationships with commissioners, which had enabled their services to be recommissioned, even within the context of wider service redesign.
- Services also reported on having good relationships with either their constituent community service or hospital discharge team. One team noted that whilst this had been the case for a number of years, it was felt that in the near future that this was likely to change, with their being incorporated into the local plans regarding the emerging Community/Neighbourhood Teams.
- The control team reported that they felt they had been subject to unnecessary internal change, through a succession of management changes, affecting staff morale, staff turnover, team development and ultimately, service user outcomes. Staff felt unsure of their own roles within the team, and the wider role of the team in the health and social care landscape.



5. Step 2 - Qualitative analysis (cont.)

A number of workforce indicators were reported as having a positive impact on the team. The indicators included:-

- Low staff turnover/high retention rates of staff, contributing to a cohesive workforce, working towards the same patient oriented goals.
- Having consistent management support, ensuring that staff feel listened to, and that their feedback is taken on board.
- Developing cross-professional/trans disciplinary roles, contributing to meeting individual patient needs.
- Having regular multi-disciplinary team meetings, which provided an opportunity to bring members of the team together to discuss both patients and team issues.
- Having excellent competency based programmes, which ensured that staff were being trained to expected competency levels to be able to deliver the full range of intermediate care interventions effectively.
- Having low vacancy rates, which meant that there was minimal turnover in the team, and that teams were working, in the main, to the agreed funded establishments.

Having clear structures in place. The type of issue that was mentioned in this area included the following:-

- Having a flexible workforce. Two of the positive deviant sites reported that staff were content to be pulled into other areas of the intermediate care services locally, to cover sick leave and maternity leave, as it was felt this would be reciprocated should it be required.
- Having a single point of entry into the service and having agreed referral routes, ensuring patients were seen as quickly as possible and assessed by appropriate personnel in the team.
- Having clear referral criteria, which contributed to most referrals being seen as “appropriate” for intermediate care.
- Being able to provide service users with individualised packages of care following assessment, which were goal centred. Two of the teams reported having structured instrument measures in place to measure service user outcomes, ensuring the teams were working from the same baseline and were able to measure and evidence the effectiveness of their interventions.



5. Step 2 - Qualitative analysis (cont.)

Bed based key themes

Hypotheses identified from the home based study were also evidenced by the feedback from the bed based positively deviant sites and so are not replicated below. Additional themes were noted by bed based services and are covered by the following aspects of service provision:-

Exploitation of alternative funding streams – many of the bed based services visited explained that they could exploit alternative funding streams, in addition to service budgets. The examples given ranged from easy access to charitable funds, to League of Friends to local schemes set up specifically to assist the hospital/service with equipment. One of the positively deviant sites reported that even when services were integrated, there was no loss of budget.

Good communication and links with other providers in the ecosystem such as the acute hospitals and community nursing teams; many of the bed based services reported excellent links with other services locally. Often bed based teams could refer directly to local home based teams, ensuring smoother transition of patients back to their place of care/home. The positively deviant teams all reported good links in place to feedback to their wider community teams or neighbourhood teams, via team lead meetings or through services being jointly managed. Some teams reported that vacancies and sickness were often filled by other staff in the system, with flexible use to ensure safe coverage of the beds. Other services reported good links with community matrons, community falls teams and District Nursing Teams, all important staff groups involved in the delivery of care to older people. In addition, the positively deviant sites reported that they had access to a shared patient record, allowing all teams involved in delivering patient care to share key information.

Less complicated commissioning structures – the control sites reported having multiple Clinical Commissioning Groups and/or Local Authorities commissioning their services, which made processes, such as discharge planning, challenging. Positively deviant sites reported simpler commissioning arrangements, and all reported having good relationships with their commissioners, resulting in them reporting that they felt generally listened to by their commissioners in terms of service delivery. Many reported they felt comfortable raising new ideas or changes to their commissioners, often facilitated by frequent contact. Interestingly, the control sites reported not having relationships with local commissioners.

Opportunities to feedback to management and ideas listened to and taken on board – staff in the positively deviant sites talked about feeling part of the hierarchy in their organisations, where managers routinely met with the staff, and staff felt that their feedback was acted upon proactively.



5. Step 2 - Qualitative analysis (cont.)

Proactive recruitment and putting in processes to try and retain staff. Upskilling of existing staff – the positively deviant sites reported that managers and teams were flexible in their approach to staffing the bed based services. Examples of local initiatives quoted included:-

- Use of in-house training specifically designed around delivery of intermediate care services
- Student placements
- Internal staff development and rotation
- Online training utilised in rural locations
- Flexible use of the workforce across different services. One site reported that since vertical integration with the local acute trust, their staffing gaps were also being filled by acute nursing staff to ensure safe patient care.

Involvement of family in care planning - whilst all 6 sites reported that care planning and goal setting was in place and routinely used, the positively deviant sites all commented on the importance of involving family in care planning and goal setting from the beginning of service provision. Goals were set on admission, goal setting involved the family, and were reviewed on a regular basis.

More internal training and awareness programmes for cognitive impairment - all sites visited reported that the patient caseload was becoming more complex with more patients having a recognised cognitive impairment. The positively deviant sites reported internal training and awareness programmes for caring for patients with a cognitive impairment. Some positively deviant sites reported that they could access more specialist support for those with severe dementia.

Carrying out home visits either prior to or shortly after discharge – the positively deviant sites reported practices whereby home visits to the patient's own home were routine, prior to the patient being discharged. Some of the positively deviant sites also reported that they had further visits post-discharge, particularly where equipment had been ordered for the home, so that Occupational Therapists could ensure it was being used correctly, and Physiotherapists could ensure exercise regimes were being correctly followed. A further example of post-discharge visits was where discharges were particularly complex.



6. Step 3 - Testing the hypotheses generated

Step 3 of the positive deviance methodology requires the hypotheses generated from the qualitative analysis to be tested statistically in the larger, representative sample of organisations. The hypotheses generated from the in depth home based and bed based study were then tested using the NAIC 2018 data set (which collected 2017/18 outturn positions).

The NHSBN Support Team reviewed the NAIC data set to select either a directly comparable metric, or a proxy metric, to test each of the hypotheses generated in step 2. There were some instances where no metric or proxy metric existed. Where the NAIC dataset did not contain a metric which could be directly tested, additional metrics were included in the NAIC 2018 dataset for future consideration in the analysis.

Home based intermediate care

The table below summarises the hypotheses generated for home based intermediate care and the metrics which were used to test these hypotheses.

Hypotheses	Metric
Home based intermediate care	
The value of multi disciplinary team working	<ul style="list-style-type: none"> • The development of generic roles • The transference of discipline specific skills to other disciplines • The number of disciplines seeing the patient
Feeling valued	<ul style="list-style-type: none"> • PREM summary score – the overall median summary score for the service
Feeling “protected”	<ul style="list-style-type: none"> • Decommissioning of intermediate care services • Extent of cost improvement schemes within intermediate care
Positive workforce indicators	<ul style="list-style-type: none"> • Low staff turnover/high staff retention rates • Low vacancy rates • Multi-disciplinary team meetings held regularly
Having clear structures in place	<ul style="list-style-type: none"> • Single point of entry into the service • Agreed referral routes/criteria • Provision of individualised packages of care which are goal centred • Care plans in place and reviewed • Flexible use of workforce



6. Step 3 - Testing the hypotheses generated (cont.)

Using regression analysis, these metrics were tested using the NAIC 2018 home based dataset. All measures used were at a service level, rather than at a patient level. The average change in Sunderland Score for the service was used to measure outcome. The two metrics showing a significant positive association with outcomes for patients were:-

- A review of the care plan by the multidisciplinary team (MDT); and
- The number of disciplines who saw the patient.

The other metrics tested within the NAIC 2018 data set did not demonstrate a significant relationship with outcomes.

Figure 1

Figure 1 represents the model where the percentage of service users who had a care plan in place and had this care plan reviewed regularly by the MDT is used to predict the outcome measure variable. Services that had a care plan in place and reviewed this care plan for a higher proportion of service users typically produced better outcomes. When modelled together, 15% of the variability in outcome measure can be explained by the review of the care plan variable.

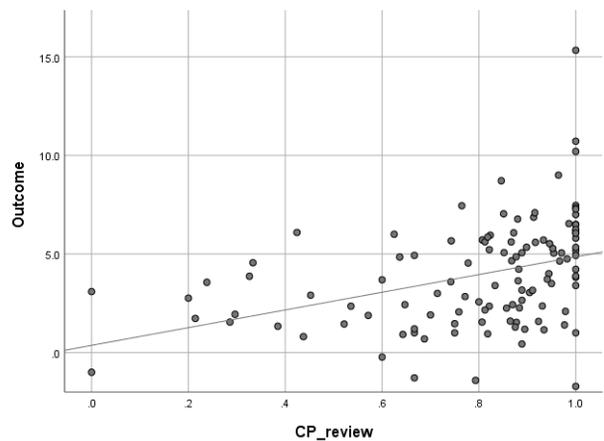
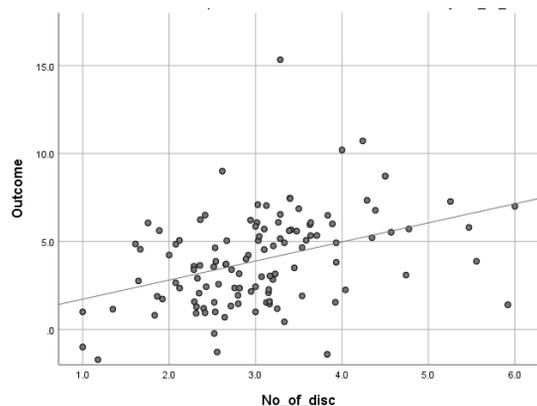


Figure 2

Figure 2 represents the model where the average number of different staff disciplines that a service user comes into contact with during their episode of intermediate care per service is tested against the outcome measure variable. When tested, services where service users come in to contact with a greater number of staff disciplines typically have better outcomes. When modelled together, 15% of the variability in outcome measure can be explained by the staff disciplines variable.



6. Step 3 - Testing the hypotheses generated (cont.)

Multivariable regression analysis was used to investigate whether multiple variables could be modelled together to explain the variation in outcomes.

When the different variables were combined, a positive significant relationship was identified between number of disciplines, review of the care plan and outcomes, illustrated in *figure 3*. When combined, these two independent variables explain 23% of the variation in change in outcome measure.

From this relationship, a model can be generated to help predict the outcome measure based on the number of disciplines who saw the patients and the percentage of the patients who had their care plan reviewed by the MDT.

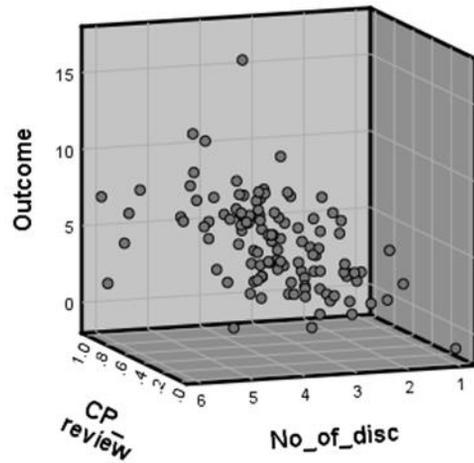
$$y_1 = -1.313 + 0.833x_1 + 3.407x_2$$

Where y_1 = change in clinical outcome measure

x_1 = average number of staff disciplines a patient has contact with

x_2 = percentage of service users where the care plan was reviewed

Figure 3



6. Step 3 - Testing the hypotheses generated (cont.)

Bed based intermediate care

The following hypotheses were tested using the NAIC 2018 dataset (where data was available) for bed based services, in addition to the measures also used in the home based analysis. The table lists the proxy measure that were used to test these hypotheses. For future consideration, an additional metric was included in the NAIC 2019 dataset regarding home visits, however only Northern Ireland participated in NAIC 2019, and hence the sample size will be much smaller.

Hypotheses	Metric
Bed based intermediate care services	
Exploitation of alternative funding streams	<ul style="list-style-type: none"> Finance – cost per service user
Good communication and links with other providers in the ecosystem	<ul style="list-style-type: none"> No metric
Simple commissioning structure	<ul style="list-style-type: none"> No metric
Opportunities to feedback to management	<ul style="list-style-type: none"> No metric
Proactive recruitment and putting in processes to try and retain staff	<ul style="list-style-type: none"> Development of trans-disciplinary roles for staff Use of the workforce flexibly Vacancy rates
Involvement of family in care planning	<ul style="list-style-type: none"> My family or carer was also involved in these decisions (about my care) as much as I wanted them to be – question taken from the PREM
More internal training and awareness programmes for cognitive impairment	<ul style="list-style-type: none"> Will the service take service users with cognitive impairment Screening for cognitive impairment
Carrying out home visits either prior to or shortly after discharge	Included in NAIC 2019 dataset



6. Step 3 - Testing the hypotheses generated (cont.)

For bed based services, when tested, four metrics demonstrated a significant positive relationship with outcomes:

- Number of disciplines who saw the patient
- PREM summary score (a consolidated score which sums all components of the PREM questions)
- Screening service users for cognitive impairment
- Review of the care plan by the multidisciplinary team (MDT)

Although these four measures show a significant relationship with outcome measures, less variability in outcomes is explained in comparison with the measures identified for home based services. This is possibly due to the smaller scale used for the home based standardised clinical outcome measure, with the Sunderland Score being measured out of 35 compared with the Modified Barthel Index being measured out of 100.

Although the number of PREM returns was not sufficient to identify positive deviants, the overall median PREM summary score for the service can be used to test hypotheses as it does not take into account the number of returns.

Using multivariable analysis, combining the PREM summary score metric and the number of disciplines who saw the patient demonstrates a significant relationship with outcomes. This model represents 9.5% of the variation in outcome measure and is illustrated in *figure 4*.

From this relationship, a model can be generated to help predict the outcome measure based on the number of disciplines who saw the patients and PREM summary score.

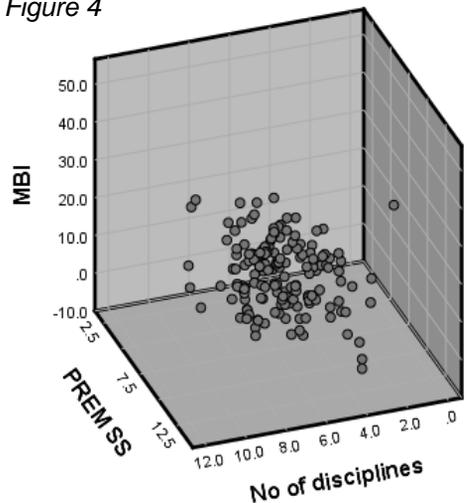
$$y_1 = 3.625 + 1.234x_1 + 0.578x_2$$

Where y_1 = change in clinical outcome measure

x_1 = average number of staff disciplines a patient has contact with

x_2 = PREM summary score

Figure 4



7. Step 4 : Dissemination and next steps

The results of the Positive Deviance in Intermediate Care Services study were presented at workshops as part of the Network's seven regional events held in May 2019. There was considerable interest in the methodology and in the findings, with participants commenting on the value of building on success rather than focusing on negative aspects of performance.

A number of organisations have contacted the Network to discuss the possibility of adopting the methodology in other applications e.g. NHS London with SDEC data set and NHS Improvement with the Learning Disabilities data set.

The Network will publish this report to members and on the public facing pages of the Network website. The report will also be sent to all the contacts held by the Network involved in the commissioning and delivery of intermediate care and community services, and the professional bodies and organisations involved in the NAIC Steering Group. The work will be shared with NHS England's Ageing Well team.

Several organisations have volunteered to be early adopters of the study findings. The Network will work with a small number of systems to:

- assess their baseline in respect of the identified criteria for high performing services;
- support the application of service improvement processes to address opportunities identified; and
- evaluate the impact of the changes made.

This work will be shared with the wider Network as case studies.



8. References

Lawton, R., Taylor, N., Clay-Williams, R., & Braithwaite, J. (2014). Positive deviance: a different approach to achieving patient safety. *BMJ quality & safety*, bmjqs-2014.

<http://qualitysafety.bmj.com/content/early/2014/07/21/bmjqs-2014-003115.long>

Baxter, R., Taylor, N., Kellar, I., & Lawton, R. (2015). What methods are used to apply positive deviance within healthcare organisations? A systematic review. *BMJ quality & safety*, bmjqs-2015.

<http://qualitysafety.bmj.com/content/early/2015/11/20/bmjqs-2015-004386.full>

Baxter, Ruth, Natalie Taylor, Ian Kellar, and Rebecca Lawton. "Learning from positively deviant wards to improve patient safety: an observational study protocol." *BMJ open* 5, no. 12 (2015): e009650.

<http://bmjopen.bmj.com/content/5/12/e009650.full>

Bradley, et al "Research in action: using positive deviance to improve quality of health care" *Implement Sci* 2009; 4-25)

<https://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-4-25>

Shah, S. (1998). Modified Barthel Index or Barthel Index (Expanded). In S. Salek. (Ed). *Compendium of quality of life instruments Part II*. Chichester: Wiley and Sons.

NHS Derby City, Adapted from the Sunderland Community Re-ablement Scheme: Using the Derby Outcome Measure, 2009

Acknowledgements

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Appendix 1

Sunderland Community Re-ablement Scheme

Domain	Category	On admission
Cognition	Severe disorientation/uncomprehending	4 <input type="checkbox"/>
	Marked problem of memory, disorientation of time, place or person	3 <input type="checkbox"/>
	Mild but definite problem of memory or understanding	2 <input type="checkbox"/>
	Occasionally forgetful but orientated to time, place and person	1 <input type="checkbox"/>
	Alert and orientated	0 <input type="checkbox"/>
Personal care	Dependent on one or more people with all aspects of care	4 <input type="checkbox"/>
	Requires some help with certain aspects of care	3 <input type="checkbox"/>
	Requires supervision or motivation	2 <input type="checkbox"/>
	Requires assistance with minor aspects of care (e.g. socks)	1 <input type="checkbox"/>
	Independent	0 <input type="checkbox"/>
Transfers	Immobile/needs hoisting	3 <input type="checkbox"/>
	Requires standing equipment and assistance to transfer	2 <input type="checkbox"/>
	Requires assistance/supervision to transfer with/without equipment	1 <input type="checkbox"/>
	Transfers independently with or without equipment	0 <input type="checkbox"/>
Mobility	Unable to mobilise	6 <input type="checkbox"/>
	Walks with physical assistance	5 <input type="checkbox"/>
	Walks with supervision	4 <input type="checkbox"/>
	Independently mobile with wheelchair	3 <input type="checkbox"/>
	Independently mobile with frame	2 <input type="checkbox"/>
	Independently mobile with crutches or sticks	1 <input type="checkbox"/>
	Walks independently unaided	0 <input type="checkbox"/>
Stairs	Unable to use stairs	2 <input type="checkbox"/>
	Able to use with supervision	1 <input type="checkbox"/>
	Independent/not applicable	0 <input type="checkbox"/>
Outdoor mobility	Unable to mobilise outdoors	3 <input type="checkbox"/>
	Independently mobile within garden/drive	2 <input type="checkbox"/>
	Mobile in the community with supervision/assistance	1 <input type="checkbox"/>
	Independently mobile in the community	0 <input type="checkbox"/>
Food preparation	Dependent with all meals and drinks	3 <input type="checkbox"/>
	Needs help with all meals, able to make hot drinks	2 <input type="checkbox"/>
	Able to make snacks (e.g. cereals and sandwiches)	1 <input type="checkbox"/>
	Independent (able to make hot meals)	0 <input type="checkbox"/>
Continance	All help required (incontinent of urine and faeces)	4 <input type="checkbox"/>
	Requiring assistance/supervision with continence product	3 <input type="checkbox"/>
	Incontinent of urine and/or faeces but self-sufficient	2 <input type="checkbox"/>
	Occasional incontinence	1 <input type="checkbox"/>
	Continent	0 <input type="checkbox"/>
Medication	Needs full assistance with medication	3 <input type="checkbox"/>
	Needs help to take medication out of packets	2 <input type="checkbox"/>
	Needs reminding to take medication	1 <input type="checkbox"/>
	Takes medication with or without aids	0 <input type="checkbox"/>
Professional intervention	Maximum involvement (3 or more visits per day)	3 <input type="checkbox"/>
	Daily visits (less than 3)	2 <input type="checkbox"/>
	Regular visits (not daily)	1 <input type="checkbox"/>
	Self-sufficient	0 <input type="checkbox"/>
Score range	0 - 35 with 0 indicating fully independent	TOTAL <input type="text"/> <input type="text"/>

Adapted from the Sunderland Community Re-ablement Scheme; Using Derby Outcome Measure copyright 2009 NHS Derby City



Appendix 2

Modified Barthel Index

Item	Unable to perform task	Substantial help required	Moderate help provided	Minimal help required	Fully independent
11. Personal hygiene	0	1	3	4	5
12. Bathing self	0	1	3	4	5
13. Feeding	0	2	5	8	10
14. Toilet	0	2	5	8	10
15. Stair climbing	0	2	5	8	10
16. Dressing	0	2	5	8	10
17. Bowel control	0	2	5	8	10
18. Bladder control	0	2	5	8	10
19. Ambulation	0	3	8	12	15
20. or Wheelchair*	0	1	3	4	5
21. Chair/bed transfer	0	3	8	12	15

*Score only if patient is unable to ambulate and is trained in wheelchair management. Scores are added together to indicate a dependency level

MBI Total Scores	Dependency Level
0 - 24	Total
25 - 49	Severe
50 - 74	Moderate
75 - 90	Mild
91 - 105	Minimal



Appendix 3

Patient Reported Experience Measure – home based

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along the
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0410029983

THIS FINAL SECTION TO BE COMPLETED BY THE SERVICE USER ON DISCHARGE

Please detach and hand this page to the Service User or Carer together with the pre-paid envelope.

Service User feedback on Home Based Intermediate Care Services and re-ablement services

We would like to know what you thought about the care you received from the service. Your answers will help us know what we are doing well and what we need to do better, so that we can provide the best possible services. Please be as honest as you can with your answers; all answers will be treated confidentially.

This survey is being carried out as part of the National Audit of Intermediate Care, for more information go to <http://www.nhsbenchmarking.nhs.uk/projects/partnership-projects/National-Audit-of-Intermediate-Care/year-four.php>

Place a cross in appropriate boxes , (unless indicated otherwise).

- | | |
|--|--|
| <p>Q1 The length of time I had to wait for my care from the community team to start was reasonable</p> <p><input type="checkbox"/> Yes
<input type="checkbox"/> No</p> <p>Q2 The staff that cared for me at home had been given all the necessary information about my condition or illness from the person who referred me</p> <p><input type="checkbox"/> Yes
<input type="checkbox"/> No
<input type="checkbox"/> Don't know</p> <p>Q3 I was aware of what we were aiming to achieve e.g. to be mobile at home, to be independent at home, to be able to go out shopping, to understand my health better</p> <p><input type="checkbox"/> Yes
<input type="checkbox"/> No</p> <p>Q4 I was involved in setting these aims</p> <p><input type="checkbox"/> Yes - always
<input type="checkbox"/> Yes - sometimes
<input type="checkbox"/> No</p> | <p>Q5 I was as involved in discussions and decisions about my care, support and treatment as I wanted to be</p> <p><input type="checkbox"/> Yes - definitely
<input type="checkbox"/> Yes - to some extent
<input type="checkbox"/> No</p> <p>Q6 The staff let me know how to contact them if I needed to</p> <p><input type="checkbox"/> Yes - always
<input type="checkbox"/> Yes - sometimes
<input type="checkbox"/> No</p> <p>Q7 The appointment/visit times by staff were convenient for me</p> <p><input type="checkbox"/> Yes - always
<input type="checkbox"/> Yes - sometimes
<input type="checkbox"/> No</p> <p>Q8 When I had important questions to ask the staff they were answered well enough</p> <p><input type="checkbox"/> Yes - always
<input type="checkbox"/> Yes - sometimes
<input type="checkbox"/> No
<input type="checkbox"/> I had no need to ask</p> |
|--|--|



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Please turn over...



Appendix 3

Patient Reported Experience Measure – home based

5177029988

Q9 I had confidence and trust in the staff treating or supporting me

- Yes - always
- Yes - sometimes
- No

Q10 I felt involved in decisions about when my care from the community team was going to stop

- Yes - definitely
- Yes - to some extent
- No
- I did not need to be asked

Q11 I was given enough notice about when my care from the community team was going to stop

- Yes - definitely
- Yes - to some extent
- No

Q12 Staff gave my family or someone close to me all the information they needed to help care for me

- Yes - definitely
- Yes - to some extent
- No
- I did not want or need them to

Q13 Staff discussed with me whether I needed any further health or social care services after this service stopped (e.g. services from a GP, physiotherapist or community nurse, or assistance from social services or the voluntary sector)

- Yes
- No - but I would have liked them to
- No - it was not applicable

Q14 Overall, I felt I was treated with respect and dignity while I was receiving my care from this service

- Yes - always
- Yes - sometimes
- No

Q15 Since having care from this service, my ability to maintain social contact has improved

- Yes - definitely
- Yes - to some extent
- No
- I am not concerned about this

Q16 Do you feel that there is something that could have made your experience of the service better?

- Yes
- No

If yes, please could you detail here...

MANY THANKS FOR YOUR HELP AND TIME COMPLETING THIS INFORMATION

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NAIC Services
Wembley HA0 4PE

PAGE 8



Appendix 4

Patient Reported Experience Measure – bed based

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THIS FINAL SECTION TO BE COMPLETED BY THE SERVICE USER ON DISCHARGE

Please detach and hand this page to the Service User or Carer together with the pre-paid envelope.

Service User feedback on Bed Based Intermediate Care Services

We would like to know what you thought about the care you received from the service. Your answers will help us know what we are doing well and what we need to do better, so that we can provide the best possible services. Please be as honest as you can with your answers; all answers will be treated confidentially.

This survey is being carried out as part of the National Audit of Intermediate Care, for more information go to http://www.nhsbenchmarking.nhs.uk/projects/partnership-projects/National-Audit-of-Intermediate-Care/NAIC_2017.php

Place a cross in appropriate boxes , (unless indicated otherwise).

Q1 The staff that cared for me had been given all the necessary information about my illness or condition from the person who referred me

- Yes
- No
- Don't know

Q2 I was given enough information about my condition or treatment

- Not enough
- The right amount
- Too much

Q3 I was aware of what we were aiming to achieve e.g. to be mobile at home, to be independent at home, to be able to go out shopping, to understand my health better

- Yes
- No

Q4 I was involved in setting these aims

- Yes - always
- Yes - sometimes
- No

Q5 I was as involved in discussions and decisions about my care, support and treatment as I wanted to be

- Yes - definitely
- Yes - to some extent
- No

Q6 My family or carer was also involved in these decisions as much as I wanted them to be

- Yes - definitely
- Yes - to some extent
- No
- There were no family or carer available to be involved
- I didn't want my family or carer to be involved

Q7 When I had important questions to ask the staff they were answered well enough

- Yes - always
- Yes - sometimes
- No
- I had no need to ask

Q8 I had confidence and trust in the staff treating or supporting me

- Yes - always
- Yes - sometimes
- No

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Please turn over...



Appendix 4

Patient Reported Experience Measure – bed based

6068025243

Q9 I always knew who was co-ordinating my care

- Yes
- No - I co-ordinate my own care and support
- Don't know / not sure

Q10 I was involved in decisions about when I would go home

- Yes - definitely
- Yes - to some extent
- No
- I did not need to be involved

Q11 Staff took account of my family or home situation when planning going home

- Yes - completely
- Yes - to some extent
- No
- It was not necessary
- Don't know

Q12 Staff gave my family or someone close to me all the information they needed to help care for me

- Yes - definitely
- Yes - to some extent
- No
- I did not want or need them to

Q13 Overall, I felt I was treated with respect and dignity while I was receiving my care from this service

- Yes - always
- Yes - sometimes
- No

Q14 Since having care from this service, my ability to maintain social contact has improved

- Yes - definitely
- Yes - to some extent
- No
- I am not concerned about this

Q15 I have been sufficiently informed about the other services that are available to someone in my circumstances, including support organisations

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Q16 Do you feel that there is something that could have made your experience of the service better?

- Yes
- No

If yes, please could you detail here...

MANY THANKS FOR YOUR HELP AND TIME COMPLETING THIS INFORMATION

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