



Centre for  
**Health Service Economics  
& Organisation**

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## **Homelessness and hospital discharge in Wirral: an investigation into the Hospital Discharge Project**

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NHS Brief No. 2

Produced in October 2011 for Homeless Link by:  
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# 1. Summary and key findings

This paper provides high-level analysis of hospital resource savings arising from the Hospital Discharge Project, which is an intervention to support homeless patients at Arrowe Park Hospital in Wirral. In doing so, it indicates the potential benefit of similar schemes.

## 1.1. About the Hospital Discharge Project

The Hospital Discharge Project responded to a concern that homeless patients were being discharged with little support, resulting in poor health outcomes, prolonged homelessness and increased costs to the NHS. The original goal was for a hospital link worker to train staff in appropriate discharge as well as provide some direct support for patients. Funding (jointly from NHS Wirral and the Supporting People team at Wirral Borough Council) was agreed for a one-year pilot starting in early May 2010.

The project's aim is to improve hospital discharge for homeless people or those at risk of homelessness by:

- Ensuring that homelessness is accounted for in discharge policy and procedure.
- Developing a discharge protocol between the hospital and the local authority.
- Raising awareness of homelessness amongst hospital staff.
- Developing links between the hospital and community support and treatment services.
- Supporting patients through the discharge process to appropriate accommodation.
- Contributing to the understanding of local need and access issues.

As the project has progressed, it has also encompassed elderly patients who could not easily return to their homes. The link worker's level of direct involvement is also higher than planned, having built up his own case load. A further year's funding has since been agreed.

## 1.2. What benefits might the Hospital Discharge Project be expected to achieve?

The intervention has several potential economic benefits regarding homeless patients and those at risk of homelessness, which are categorised as follows.

- A possible reduction in use of hospital resources, which is important because any savings can help offset the cost of the project, bringing it closer to cost neutrality. The project could be expected to reduce use of hospital resources in three ways:
  - (i) The likely impact on average length of stay is ambiguous. It may be the case that arranging appropriate discharge for some homeless patients requires them to remain in hospital for longer. Other patients may be discharged more quickly, as there is less incentive for 'bed blocking' if the patient is happier about their discharge from hospital. It is not clear which of these arguments will dominate.
  - (ii) The project should result in a reduced rate of emergency readmission (e.g. within 28 days). If patients are discharged at a clinically appropriate time and to suitable accommodation, they should better be able to recover from their illness, resulting in fewer readmissions to hospital.
  - (iii) The project may result in a shift to less complex/expensive health problems.
- A potential improvement in health and wider quality and length of life for homeless patients and those at risk of homelessness.
- A possible reduction in other societal costs of homelessness.

This paper is concerned only with the first point, i.e. changes in the amount of hospital resources used by homeless patients. However, such a reduction may also be associated

with the second two points – improved health outcomes for patients and lower costs to society through better management of health problems. Benefits regarding the link worker's help to elderly patients are separate and are not considered in the points above.

### **1.3. The approach used by this paper**

This paper uses Hospital Episode Statistics to identify No Fixed Abode episodes at Wirral University Teaching Hospital NHS Foundation Trust, of which Arrowe Park Hospital is a part. Data is extracted for both the 2009/10 financial year (which is before the intervention began) and the 2010/11 financial year (during which the intervention began in May 2010). The change in activity and cost between these two years may be attributable to the Hospital Discharge Project. England-wide No Fixed Abode episode, admission and bed day totals are also calculated for 2009/10 and 2010/11, to check whether any changes in Wirral could be driven by national trends. To maximise the likelihood that homeless patients are identified by the No Fixed Abode designation (rather than other patient groups who might withhold their address), the analysis is restricted to episodes for patients aged 16-64 that are not associated with pregnancy termination, obstetrics / neonatal care or poor quality data.

Because this paper has been produced to a tight deadline and there are limitations in available data, the analysis has important caveats which should be borne in mind when interpreting the results; the No Fixed Abode designation will not identify all homeless patients, nor will it identify those at risk of homelessness (because they have an address). There are several further analytical approaches that could possibly be used to refine the data, although perfectly identifying homeless patients in hospital data will remain a difficult task. The limitations and possible extensions are discussed at the end of this paper.

### **1.4. Key findings**

- Whilst the number of individual patients is virtually unchanged between 2009/10 and 2010/11, there are falls in the number of episodes (of 26%), admissions (18%) and bed days (26%). These translate into similarly-sized falls in the number of episodes, admissions and bed days per patient. As has been the case in previous research covering the whole of England (Department of Health, 2010; CHSEO, forthcoming), male patients and emergency care feature prominently amongst the No Fixed Abode episodes, as do substance misuse and mental health issues.
- England-wide No Fixed Abode episode, admission and bed day totals (calculated on the same basis as the rest of the paper) are almost unchanged between 2009/10 and 2010/11, so national trends are not driving the above results.
- There is a fall of one third in the number of episodes resulting in emergency readmission within less than 28 days between 2009/10 and 2010/11.
- Unexpectedly, there is a small rise in the percentage of self-discharges between 2009/10 and 2010/11.
- There is a reduction of approximately £26,500 (around one third; 2009/10 prices) in the total cost of No Fixed Abode episodes (as determined by the National Tariff and average Reference Costs, held fixed between the two years). This is sufficient to offset a significant part of the annual cost of the Hospital Discharge Project, and is also likely associated with improved health and quality of life for homeless patients.

The project also helps elderly patients, those at risk of homelessness and homeless people in temporary accommodation (e.g. hostels) who, because they have an address, may not have been recorded as having No Fixed Abode. Any associated benefits are additional to those estimated above.

## 2. Method and results

The following sections provide the full method and results used to estimate changes between 2009/10 and 2010/11 in No Fixed Abode activity and costs at Wirral University Teaching Hospital NHS Foundation Trust.

### 2.1. Identifying No Fixed Abode episodes in Hospital Episode Statistics

In this paper, homeless episodes are identified from the No Fixed Abode designation in the Government Office Region of Residence field of Hospital Episode Statistics. It should be noted that this designation is unlikely to capture all episodes that relate to homeless patients, as they may instead have been registered under their hostel postcode, or at some other address. Nonetheless, other papers (Department of Health, 2010; CHSEO, forthcoming) show that it offers a consistent starting place for analysis and its results fit well with other literature on homelessness.

It may also be the case that some No Fixed Abode episodes do not relate to homeless patients because of poor quality data or because the patient was unwilling to provide their address (e.g. in the case of pregnancy terminations or domestic violence). This paper therefore follows Department of Health (2010) by excluding No Fixed Abode records for particular Healthcare Resource Groups (HRGs) and for patients younger than 16 or older than 64<sup>1</sup>. The excluded Version 3.5 HRGs include pregnancy terminations (codes M09-M11), obstetrics & neonatal care (chapter N) and unidentified groups (chapter U). Whilst these will remove some non-homeless patients, patients that are coded as No Fixed Abode for other reasons (such as illicit drug use or domestic violence) will nonetheless remain in the sample.

The analysis is restricted to Wirral University Teaching Hospital NHS Foundation Trust, of which Arrowe Park Hospital is a part. The Trust also has some activity on other hospital sites (e.g. at Clatterbridge Hospital) that could possibly be captured in the analysis, although this is not considered to be a major issue. Further discussion of this and other data limitations and possible solutions is included at the end of this paper.

### 2.2. England-wide changes in summary totals for No Fixed Abode episodes

To provide initial context for the Wirral data, Table 1 shows England-wide data on No Fixed Abode activity between 2009/10 and 2010/11. Clearly there have been very limited England-wide changes between these two years. This is important, as it shows that any changes in Wirral cannot be driven by an overall national trend, and are therefore more likely to be linked to the intervention (although causality cannot be perfectly established).

*Table 1: England-wide No Fixed Abode summary totals in 2009/10 and 2010/11*

	2009/10. Wirral's pre-intervention year.	2010/11. Wirral's intervention year.
England total episodes	9,940	9,833
England total bed days	53,548	53,561
England total admission episodes	7,810	7,772

<sup>1</sup> The restriction to ages 16-64 fits with other recent evidence on the age of the London homeless population (CHAIN, 2011) and helps to further restrict the sample to genuine cases with No Fixed Abode.

### 2.3. Changes in summary totals for Wirral No Fixed Abode episodes

Table 2 summarises Hospital Episode Statistics inpatient data for No Fixed Abode patients at Wirral University Teaching Hospital NHS Foundation Trust for 2009/10 and 2010/11.

Table 2: Inpatient totals for Wirral No Fixed Abode episodes

	2009/10. Pre-intervention year.	2010/11 (with exclusion). Intervention year.	% change between previous 2 columns	2010/11 (no exclusion). Intervention year.
Episodes	117	87	-26%	88
Admission episodes	91	75	-18%	75
Bed days	188	140	-26%	334
Individual patients	46	44	-4%	45
Episodes per patient	2.54	1.98	-22%	1.96
Admissions per patient	1.98	1.70	-14%	1.67
Average length of stay per episode (days)	1.61	1.61	0%	3.80
Average length of stay per admission (days)	2.07	1.87	-10%	4.45
Annual length of stay per patient (days)	4.09	3.18	-22%	7.42
Male episodes	100	79	-21%	79
Female episodes	17	7	-59%	8
% of episodes that are reported by men	85.5%	91.9%		90.8%
Emergencies as % of all NFA episodes	Near 100%	>93%		>92%

Note: the cells showing emergencies as a percentage of all No Fixed Abode episodes are derived from small numbers. They are therefore not shown as precise numbers in order to protect patient confidentiality. 'Exclusion' refers to a 194-day stay for cerebral degenerations (discussed below).

Clearly, the number of episodes and admission episodes has fallen significantly, with the number of episodes falling by 26% and the number of admission episodes falling by 18%. Because the number of individual patients is very similar in each year, this implies a per-patient fall in the number of episodes and admissions of 22% and 14% respectively.

Whilst the number of bed days appears to have risen, this is driven by a single 194-day stay by a young adult patient for cerebral degenerations in 2010/11. If this can be regarded as a one-off event that is unrelated to the Hospital Discharge Project, the number of bed days was instead 140 in 2010/11, which is a 26% reduction compared to 2009/10. The 194-day stay is excluded from subsequent tables unless otherwise stated.

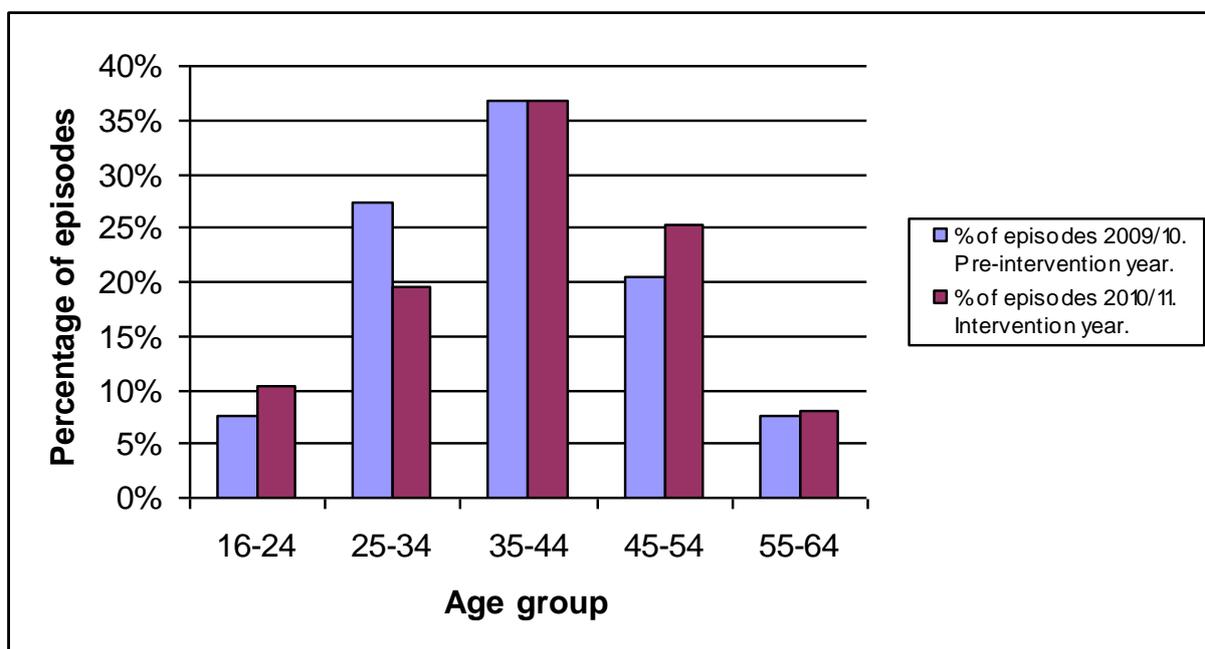
In the summary, it was argued that improved hospital discharge procedures would have an ambiguous effect on average length of stay, as some patients may need to stay in hospital for longer whilst appropriate accommodation is identified, whereas others may be less likely to 'bed block' if they have somewhere to go. Average length of stay per episode does not fall between 2009/10 and 2010/11, whereas average length of stay per admission falls by 10%, and the annual average length of stay per patient falls by 22%. This indicates fewer admissions and episodes per patient as well as a fall in the average length of a given stay in hospital. Both can result in a fall in cost.

Lastly, as has been found in previous England-wide analysis, the vast majority of the Wirral No Fixed Abode episodes are emergencies relating to men. Further analysis of the emergency admissions (for both men and women) shows that the vast majority are admitted from the Accident & Emergency department, rather than from a GP referral or by other means. However, average lengths of stay are substantially beneath the national average for No Fixed Abode patients of 5.39 days per episode in 2009/10 (CHSEO, forthcoming).

## 2.4. Changes in the age distribution for Wirral No Fixed Abode episodes

Given that there appears to be a reduction in No Fixed Abode episodes, admissions and bed days in 2010/11, it is important to check that these are not driven by a change in the age distribution of patients between 2009/10 and 2010/11 (for example, by a shift towards younger patients). Figure 1 illustrates the age distributions for the two years. On average, the 2010/11 episodes relate to slightly older patients (with an average age of 39.46, versus 38.83 for 2009/10), so changes in the age distribution could not explain the identified reduction in the level of activity. Indeed, other things equal, the increased average age might suggest a small increase in activity in 2010/11, but instead the opposite is observed. Overall, both age distributions are similar to those observed for the London homeless population in CHAIN (2011).

Figure 1: Age distributions for Wirral No Fixed Abode episodes



## 2.5. Changes in the number of Wirral No Fixed Abode episodes resulting in readmission within 28 days

It was argued in the summary that a reduction in readmissions or emergency readmissions (within 28 days of discharge) might well follow from an improvement in hospital discharge procedures. Earlier results showed a fall in the number of admissions per patient; the following analysis identifies whether this is driven by a fall in emergency readmissions occurring shortly after discharge.

Episodes resulting in readmission or emergency readmission within 28 days are identified by applying a University of York readmission identification algorithm using the Intercooled STATA 8.0 statistical package. The analysis only counts episodes resulting in readmission at Wirral University Teaching Hospital NHS Foundation Trust. Table 3 presents the results.

Table 3: counts of Wirral No Fixed Abode episodes resulting in readmission and emergency readmission within 28 days

	2009/10. Pre-intervention year.	2010/11. Intervention year.
Episodes resulting in readmission within 28 days	34	22
Episodes resulting in emergency readmission within 28 days	34	21

Clearly there has been a fall in the number of emergency readmissions of around one third (13 emergency readmissions); this can almost entirely explain the reduction in the overall number of admissions from 91 in 2009/10 to 75 in 2010/11.

## 2.6. Changes in self-discharge amongst Wirral No Fixed Abode episodes

Analysis for the whole of England (CHSEO, forthcoming) shows that No Fixed Abode patients have a substantially higher rate of self-discharge than for a comparison population. One might expect that the Hospital Discharge Project has resulted in a reduction in such discharges. Table 4 therefore sets out the proportion of discharges where the patient self-discharged or was discharged by a relative or advocate.

Table 4: Self-discharge amongst Wirral No Fixed Abode episodes

	2009/10. Pre-intervention year.	2010/11. Intervention year.
Proportion of discharges where the patient self-discharged or was discharged by a relative or advocate	13.7%	19.5%

*Note: the above percentages exclude episodes that end in death and episodes where the patient is still in hospital.*

Unexpectedly, the self-discharge fraction increased somewhat in 2010/11, although it should be noted that this only reflects an increase of two patients relative to the previous year (potentially a random change that is not associated with the project). Additionally, any increase in the share of self-discharged patients is not reflected in the numbers of emergency readmissions, which have reduced significantly and are a more outcome-focused indicator of appropriate discharge.

## 2.7. Changes in the breakdown of Wirral No Fixed Abode episodes by Healthcare Resource Group

The next section estimates the impact on costs to the NHS (as measured by the amount that the hospital would have been paid for its activity) resulting from the above reduction in the number of No Fixed Abode episodes, admissions and bed days. To do this, it is first necessary to look at the Healthcare Resource Groups (HRGs) that are assigned to the episodes.

HRGs are groups of hospital activity that are judged to use a similar level of resources. The Payment by Results system (which ultimately results in the Tariff through which hospitals are paid) estimates costs for these groups, rather than for their constituent parts, in order to reduce to a manageable level the number of different hospital activities that need to be costed. Table 5 lists the Healthcare Resource Groups (Version 4) that are most commonly

found in the No Fixed Abode sample. Mental health and substance misuse HRGs are most prominent, as in Department of Health (2010) and CHSEO (forthcoming) for the whole of England. There is also a high degree of similarity between the two years.

*Table 5: Top 10 HRGs by episode count for Wirral No Fixed Abode episodes*

2009/10. Pre-intervention year.			2010/11. Intervention year.		
Code	Description	% of episodes	Code	Description	% of episodes
WD22Z	All Patients older than 19 years and younger than 69 years with a Mental Health Primary Diagnosis	32.48%	WD22Z	All Patients older than 19 years and younger than 69 years with a Mental Health Primary Diagnosis	34.09%
WA11Y	Poisoning, toxic, environmental and unspecified effects without CC	9.40%	CZ21V	Minor Head, Neck and Ear Disorders 19 years and over with CC	6.82%
CZ21V	Minor Head, Neck and Ear Disorders 19 years and over with CC	5.13%	WA11X	Poisoning, toxic, environmental and unspecified effects with Intermediate CC	6.82%
WA11X	Poisoning, toxic, environmental and unspecified effects with Intermediate CC	5.13%	WA11Y	Poisoning, toxic, environmental and unspecified effects without CC	6.82%
AA26Z	Muscular, Balance, Cranial or Peripheral Nerve disorders; Epilepsy; Head Injury	4.27%	FZ31B	Disorders of the Oesophagus with Intermediate CC	*%
FZ38C	Gastrointestinal Bleed without CC	4.27%	AA26Z	Muscular, Balance, Cranial or Peripheral Nerve disorders; Epilepsy; Head Injury	*%
GB02A	Endoscopic/Radiology category 3 with Major CC	*%	DZ11B	Lobar, Atypical or Viral Pneumonia with CC	*%
EB08I	Syncope or Collapse without CC	*%	GC02B	Liver and Pancreatic Disorders category 6 with Intermediate CC	*%
FZ35C	General Abdominal Disorders without CC	*%	HD37B	Head Injury with CC	*%
WA11V	Poisoning, toxic, environmental and unspecified effects with Major CC	*%	DZ21J	Chronic Obstructive Pulmonary Disease or Bronchitis without NIV without Intubation with CC	*%

*Note: some cells containing small numbers have been replaced with asterisks to preserve patient confidentiality.*

## 2.8. Changes in the cost of Wirral No Fixed Abode episodes

This final results section considers the change in inpatient costs arising from the changes in episodes, admissions, bed days and the HRG mix between 2009/10 and 2010/11. This provides an indication of the savings resulting from the Hospital Discharge Project, as measured by how much the hospital would have been paid for its activity in each year.

The Tariff is an England-wide system setting out how much hospitals should be reimbursed for particular HRGs. These Tariff payments are set using data from NHS Reference Costs, which attempt to measure the cost of each HRG in a large number of different hospitals. In the following costings, the Tariff is used if possible, with average Reference Costs being used if not.

Because of inflation between the two years and other changes in the Tariff and Reference Costs (some HRGs will increase in cost and others will decrease in cost), the following calculations use prices from the 2009/10 Tariff and Reference Costs for both the 2009/10 and 2010/11 costings. This ensures that identified changes in cost are due to changes in activity rather than changes in prices.

For both 2009/10 and 2010/11, the costing method is as follows:

- The costing is at the episode level, taking one episode at a time and applying a cost to it.
- If the episode is elective:
  - (i) The elective Tariff is applied if possible for its HRG. Otherwise, the appropriate national average figure is taken from NHS Reference Costs for its HRG.

- (ii) If the episode is longer than the elective trim point set out in the Tariff, excess bed day costs are applied using the Tariff (if the Tariff was used in the previous bullet), or using Reference Costs (if Reference Costs were used in the previous bullet).
- If the episode is non-elective:
  - (i) The non-elective short stay Tariff is applied if the length of stay is 0 or 1 days, or the non-elective long stay Tariff is applied if the length of stay is greater than 1 day. If it is not possible to apply the Tariff in this way, Reference Costs are used instead, with the non-elective short stay Reference Cost applied if the length of stay is 0 or 1 days, or the non-elective long stay Reference Cost applied if the length of stay is more than 1 day.
  - (ii) If the episode is longer than the non-elective trim point set out in the Tariff, excess bed day costs are applied using the Tariff (if the Tariff was used in the previous bullet), or using Reference Costs (if Reference Costs were used in the previous bullet).
- The Tariff is defined per spell in hospital (which can cover several episodes), whereas Reference Costs are defined per episode. To take account of this, all Tariff costs in the bullets above (except excess bed day costs) are divided by the average number of Wirral No Fixed Abode episodes per Wirral No Fixed Abode admission in that financial year.
- Because specific Tariff and Reference Cost estimates are not available for mental health, this area is instead costed using an average cost per mental health inpatient bed day, derived from Reference Costs.
- The calculations do not take account of other Tariff adjustments that are not described above (although the most important adjustments – for short and long stays – are taken account of).

The calculation is produced using HRG Version 4, which is the version that was used during 2009/10 (for the first time) and 2010/11. Mental health bed days are identified using HRGs WD11Z, WD22Z and WD33Z. The results are presented in Table 6.

*Table 6: Costing results (HRG Version 4; same 2009/10 prices used for both years)*

	2009/10. Pre-intervention year.	2010/11 (with exclusion). Intervention year.	% change between previous 2 columns	2010/11 (without exclusion). Intervention year.
Main HRG cost	£73,227	£47,913	-35%	£80,212
Mental health cost	£14,301	£13,030	-9%	£13,030
Total cost	£87,528	£60,943	-30%	£93,242
No. of episodes	117	87	-26%	88
No. of admissions	91	75	-18%	75
No. of patients	46	44	-4%	45
Cost per episode	£748	£700	-6%	£1,060
Cost per admission	£962	£813	-16%	£1,243
Cost per patient per year	£1,903	£1,385	-27%	£2,072

*Note: 'Exclusion' refers to the 194-day stay for cerebral degenerations.*

The table shows estimated savings of £26,500 in 2009/10 prices, representing a 30% fall in the total cost and a 27% fall in the cost per patient per year. Such savings are important because they are large enough to offset a significant fraction of the cost of the project. Furthermore, any savings resulting from the project's work with elderly patients or homeless patients who are not recorded as No Fixed Abode (including those at risk of homelessness), would be additional to those presented above as these areas are not covered by this paper.

As noted previously, the above figures use the 2009/10 Tariff and Reference Costs for both years in order to exclude changes in prices from the analysis. The following calculations allow for changes in prices between the two years to test the impact on the results. The 2009/10 and 2010/11 Tariffs are used in their respective costings; Reference Costs for 2009/10 are used in both years as 2010/11 Reference Costs are not yet available, although inflation factors<sup>2</sup> are applied in 2010/11. The results are presented in Table 7.

Table 7: Costing results (HRG Version 4; prices differ between the two years)

	2009/10. Pre-intervention year.	2010/11 (with exclusion). Intervention year.	% change between previous 2 columns	2010/11 (without exclusion). Intervention year.
Main HRG cost	£73,227	£43,341	-41%	£80,197
Mental health cost	£14,301	£13,249	-7%	£13,249
Total cost	£87,528	£56,590	-35%	£93,446
No. of episodes	117	87	-26%	88
No. of admissions	91	75	-18%	75
No. of patients	46	44	-4%	45
Cost per episode	£748	£650	-13%	£1,062
Cost per admission	£962	£755	-22%	£1,246
Cost per patient per year	£1,903	£1,286	-32%	£2,077

Note: 'Exclusion' refers to the 194-day stay for cerebral degenerations.

The results show that costs per episode, admission and per patient have all fallen in 2010/11, with the cost per patient per year falling by over 30%. The overall saving is estimated to be just over £30,000, which is larger than the fixed-price calculation in Table 6; in this respect, the previous results are conservative.

### 3. Limitations and possible further analysis

There are a number of limitations that should be borne in mind when interpreting the above results. These are discussed below, alongside possible refinements that could be made in future research.

- It is acknowledged that the No Fixed Abode designation will not capture all homeless patients (or those at risk of homelessness) that received benefit from the intervention, as some will instead have been registered at their hostel address or elsewhere. The analysis may not therefore fully reflect the extent of any change in the use of hospital resources. Furthermore, if the likelihood of a given patient at Arrowe Park Hospital being registered as No Fixed Abode (rather than at a hostel address) changed between 2009/10 and 2010/11, this will affect the identified changes in bed days, admissions, episodes and so on (in addition to any changes resulting from the intervention). To resolve these issues, patients could also be identified from their address or postcode, although this would require hospital data or additional security clearance for Hospital Episode Statistics.
- The No Fixed Abode designation may identify some patients who were not part of the intervention or were not homeless, as some non-homeless patients (e.g. those involving terminations, domestic violence and so on) may be classified as No Fixed Abode if they are reluctant to provide their address. The analysis contains measures to control for this although they will not be completely effective.

<sup>2</sup> Inflation factors are taken from the Hospital and Community Health Services price index from Personal Social Services Research Unit (2010). Inflation between 2009/10 and 2010/11 has been assumed to equal inflation between 2008/9 and 2009/10, as estimates are not yet available.

- Whilst the Hospital Episode Statistics data for the 2009/10 financial year is finalised, the data for the 2010/11 financial year is provisional. It may be the case that data for a small number of episodes has not yet been recorded in Hospital Episode Statistics for this data year, making 2010/11 costs and activity seem lower than in future updates to the statistics. The 2010/11 data will be finalised in late 2011.
- The Hospital Discharge Project is run within Arrowe Park Hospital, which is part of Wirral University Teaching Hospital NHS Foundation Trust (FT). However, it is not possible to filter out patients from Clatterbridge Hospital (where the Trust also operates) from the analysis, although patients from the Clatterbridge Centre for Oncology NHS FT and the Springview mental health wards operated by Cheshire and Wirral Partnership NHS FT (which at least partially operate on the Clatterbridge site) are excluded. However, this is unlikely to be an issue, as the vast majority of identified patients in this analysis are emergency cases; activity at Clatterbridge Hospital by Wirral University Teaching Hospital NHS FT is instead focused on elective care.
- The analysis does not certainly establish causality, although a comparison is made with England-wide statistics, showing that national trends cannot explain the changes in Wirral. It may be the case that the results are partly driven by other initiatives or changes in the hospital between the two years. The forthcoming evaluation of the London Pathway (a randomised controlled trial at Barts & The London NHS FT and Brighton & Sussex University Hospitals NHS FT) will be far better able to establish causality, but results will not be published until late 2013 at the earliest because the trial has not yet begun.
- Additional detail could be added to the costing calculations, although they do already take account of long and short stay Tariff adjustments.
- As noted in the summary, the intervention is also aimed towards those at risk of homelessness and towards elderly patients who cannot easily return to their homes. Whilst this activity is outside of the scope of this paper, it may bring benefits that are additional to those quantified.

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