

## 8 Resource use and unit costs in the pilot trial (B1)

### 1. Dressing and re-dressings in hospital

A variety of wound dressings were used post-operatively. The cost of the initial dressing application and all subsequent re-dressings, for all reported wounds, was calculated by taking into account the cost of the dressing *per se* and the cost of a health care professional's time spent on applying the dressing.

The purchase costs of dressings were obtained from the BNF<sup>1</sup> (**Table** ). The time spent on applying the dressing (12 minutes) was based on the average time observed in a small 'time-and-motion' study, undertaken alongside Bluebelle to explore patterns of dressings use. The cost of a health care professional's time to perform dressing and re-dressings was taken from the Unit Costs of Health and Social Care report.<sup>2</sup> In the absence of specific information, the calculations assume that dressing applications in the hospital were carried out by Band 5 hospital nurses.

**Table 9.1: Unit costs of dressings**

Dressing	Unit cost	Quantity/size	Source
Glue as a dressing			
Dermabond ProPen skin adhesive	£19.46	0.5ml	BNF 2016 <sup>1</sup>
Histoacryl L skin adhesive	£6.72	0.5ml	BNF 2016 <sup>1</sup>
Liquiband tissue adhesive	£5.50	0.5ml	BNF 2016 <sup>1</sup>
Surgiseal	£7.87	0.5ml	BNF 2016 <sup>1</sup>
Indermil skin adhesive	£6.50	0.5ml	BNF 2016 <sup>1</sup>
Simple dressings			
C-View	£2.36	15cm x 20cm	BNF 2016 <sup>1</sup>
Hydrofilm	£0.97	15cm x 20cm	BNF 2016 <sup>1</sup>
OpSite Flexigrid dressing	£2.88	15cm x 20cm	BNF 2016 <sup>1</sup>
Tegaderm	£2.41	15cm x 20cm	BNF 2016 <sup>1</sup>
Mepore	£3.04	15cm x 20cm	BNF 2016 <sup>1</sup>
Cosmopor	£0.46	10cm x 20cm	BNF 2016 <sup>1</sup>
Aquacel Ribbon	£2.48	2cm x 45cm	BNF 2016 <sup>1</sup>
Sorbsan Silver Plus	£9.08	15cm x 20cm	BNF 2016 <sup>1</sup>
Sorbsan Ribbon	£2.04	40cm	BNF 2016 <sup>1</sup>
Inadine	£0.49	9.5cm x 9.5cm	BNF 2016 <sup>1</sup>
Melolin	£0.54	20cm x 10cm	BNF 2016 <sup>1</sup>
Allevyn Ag Gentle	£11.61	15cm x 15cm	BNF 2016 <sup>1</sup>
Allevyn Ag Gentle Border	£8.26	12.5cm x 12.5cm	BNF 2016 <sup>1</sup>
Softpore	£0.35	10cm x 20cm	BNF 2016 <sup>1</sup>
DuoDERM Extra Thin	£2.88	15cm x 15cm	BNF 2016 <sup>1</sup>
Mepilex Border	£6.07	17cm x 20cm	BNF 2016 <sup>1</sup>
Gauze	£0.00	15cm x 20cm	BNF 2016 <sup>1</sup>
Other dressings			
Option wound manager bag	£80.42	N/A	BNF 2016 <sup>1</sup>
Renasys-G negative pressure wound therapy	£30.00	N/A	BNF 2016 <sup>1</sup>
Hospital staff			

Dressing	Unit cost	Quantity/size	Source
Hospital nurse (Band 5, 12 minute patient contact)	£17.20	N/A	Curtis and Burns 2016 <sup>2</sup>

### 1. Care due to complications arising post-operatively in hospital

A limited number of cases of serious adverse events (SAEs) which arose while a patient was still in hospital and triggered additional use of resources was reported. The unit cost of re-operation due to wound complications, while the patient is in hospital (£309.00) was taken from the NHS Reference Cost Schedules.<sup>3</sup> This represents the cost of a single intervention due to infections or other complications of procedures.

### 2. Re-dressings after initial discharge

The cost of dressing changes after hospital discharge was calculated on the basis of data provided in the participant dressing log. The log captured information on the date that a dressing was applied, the name of the dressing, how the dressing was supplied (i.e. self-bought, supplied by district nurse or GP) and the cost of dressing, if this was purchased by the participant.

Post-discharge re-dressings may have taken place in various locations and at various times, including during the scheduled follow-up visit at a GP surgery (by either a GP or a nurse), at the patient's home (by a GP, a district nurse or the patient with or without the help of a family member) or in hospital, during an A&E visit, an outpatient appointment or overnight admission. Depending on who performed the dressing change, the cost of the time required to re-dress the wound may be incurred by the NHS, the patient, or the patient's carers.

Given the lack of specific information, assumptions about the person who performed the dressing change were based on patients' answers to the question 'How was the dressing supplied' (self-bought, district nurse, GP). This was also checked against data on primary care visits, collected in a different form. If, for example, the patient had seen a nurse at the GP surgery and indicated that the wound dressing was supplied by a nurse, it was assumed that the change was performed by the nurse during that visit. If dressing changes had not taken place, no entries appeared in the dressing log.

The cost of dressing changes was calculated separately from the viewpoints of the NHS and the patient (**Table**). NHS costs included the cost of dressing (when the dressing was provided by the NHS) and time spent by health care professional to perform the change. As

with re-dressings taking place in the hospital, it was assumed that a dressing change takes 12 minutes. Unit costs for the cost of dressings and health professionals' time were taken from the BNF<sup>1</sup> and Curtis and Burns,<sup>2</sup> respectively.

**Table 9.2: Unit cost of dressings and re-dressings after hospital discharge**

Dressing change	Unit Cost	Source
By GP, at practice	£36.00	Curtis and Burns 2016 <sup>2</sup>
By GP, at patient's home	£66.00	Curtis and Burns 2016 <sup>2</sup>
By nurse, at practice	£7.20	Curtis and Burns 2016 <sup>2</sup>
By nurse, at patient's home	£13.20	Curtis and Burns 2016 <sup>2</sup>
By patient (assuming 15 minutes of patient's time)	£3.50	Curtis and Burns 2016 <sup>2</sup>

Patient cost involved the purchase cost of the dressing (when this was bought privately) and the value of the time taken by the patient/family to perform the dressing change. The value of a patient's time spent on performing the change was estimated on the basis of the average hourly wage in the UK taken from the Office for National Statistics.<sup>4</sup>

### 3. Hospital and primary care appointments after initial discharge

Data on hospital visits after the initial discharge were available from a CRF recording the use of medical services related to the wound(s) at the 4-8 week follow-up. The form collected information on the number of visits, type of visit (outpatient appointments, A&E appointments and overnight admissions), the number of nights a patient stayed in hospital (if admitted) and travel to hospital (ambulance, hospital transport, taxi, other).

Summary information on the number and type of hospital visits and means of transportation to the hospital were collected. Data on the nature of complications arising after discharge were recorded in a separate form. The use of health care resources triggered by these complications was captured by data on hospital and primary care appointments after initial discharge.

Unit costs for inpatient (overnight) admissions, outpatient appointments and A&E appointments were taken from the NHS Reference Cost Schedules<sup>3</sup> (**Table**). The cost of ambulance transportation was taken from the PSSRU report. In cases where the means of

transportation was 'other', it was assumed that this was a private car. In the absence of data on the distance travelled, we assumed a 10-mile round trip to the hospital. The cost of this trip was calculated according to HM Revenue and Customs' advisory mileage rates for private vehicles.<sup>5</sup>

The per-patient cost of primary and community care provided in relation to wound problems (i.e. appointments with GPs and nurses at GP surgeries, NHS walk-in centres, out of hours GP centres and patient's homes), were calculated according to data collected in the patient-completed log and unit costs taken from Curtis and Burns <sup>2</sup> (**Table**).

**Table 9.3: Unit costs for hospital and primary care appointments after initial discharge**

Cost category	Unit cost	Source
Inpatient admission	£917.00	NHS Reference Cost Schedules 2015/16 <sup>3</sup>
Outpatient appointment	£130.06	NHS Reference Cost Schedules 2015/16 <sup>3</sup>
A&E appointment	£139.00	NHS Reference Cost Schedules 2015/16 <sup>3</sup>
Excess overnight stay (per night, beyond the first 5 nights)	£309.00	NHS Reference Cost Schedules 2015/16 <sup>3</sup>
GP appointment, at practice	£36.00	Curtis and Burns 2016 <sup>2</sup>
Ambulance transportation	£240.00	Curtis and Burns 2016 <sup>2</sup>
Private vehicle transportation	£0.16	HM Revenue & Customs <sup>5</sup>
GP appointment, at patient's home	£66.00	Curtis and Burns 2016 <sup>2</sup>
Nurse appointment, at practice	£7.20	Curtis and Burns 2016 <sup>2</sup>
Nurse appointment, at patient's home	£13.20	Curtis and Burns 2016 <sup>2</sup>
Out-of-hours GP centre visit	£7.20	Unit cost information not available. Cost assumed to be equal to a nurse appointment at a general practice (above).
NHS walk-in-centre visit	£7.20	Unit cost information not available. Cost assumed to be equal to a nurse appointment at a general practice (above).

#### 4. Initiation of new medications

Due to the condition of their wound(s), some participants were prescribed new medications, including oral, intravenous (IV) steroids, intramuscular (IM) steroids or antibiotics.

Information on whether a participant had started any new medications, the type of medications and the number of courses was collected in a CRF. IV and IM steroids were assumed to be administered during outpatient visits. Further details on new antibiotics were recorded in the CRFs. The unit costs of antibiotics and sources of the costs are shown in

**Table .**

**Table 9.4: Unit cost of antibiotics**

Antibiotic	Packet	NHS indicative price	Source
Amoxicillin	250mg, 21 capsule	£1.09	BNF 2016 <sup>1</sup>
Augmentin	250mg, 21 capsule	£1.86	BNF 2016 <sup>1</sup>
Co-amoxiclav	250mg, 21 capsule	£1.86	BNF 2016 <sup>1</sup>
Cefalexin	250mg, 28 tablets	£1.79	BNF 2016 <sup>1</sup>
Ciprofloxacin	250mg, 10 tablets	£0.75	BNF 2016 <sup>1</sup>
Clarithromycin	250mg, 14 tablets	£1.36	BNF 2016 <sup>1</sup>
Co-trimoxazole	400mg, 28 tablets	£2.51	BNF 2016 <sup>1</sup>
Daptomycin	350mg, 1 vial	£62.00	BNF 2016 <sup>1</sup>
Doxycycline	50mg, 28 tablets	£1.29	BNF 2016 <sup>1</sup>
Erythromycin	500mg, 28 tablets	£10.78	BNF 2016 <sup>1</sup>
Levofloxacin	250mg, 10 tablets	£7.42	BNF 2016 <sup>1</sup>
Metronidazole	200mg, 21 tablets	£2.65	BNF 2016 <sup>1</sup>
Piperacillin and Tazobactam	Piperacillin 2g, Tazobactam 250mg powder	£7.91	BNF 2016 <sup>1</sup>
Teicoplanin	200mg, 1 vial	£3.93	BNF 2016 <sup>1</sup>
Trimethoprim	200mg, 14 tablets	£1.15	BNF 2016 <sup>1</sup>
Gentamicin	80mg/2ml solution, 10 vials	£6.88	BNF 2016 <sup>1</sup>
Rifampicin	150mg, 100 capsules	£44.80	BNF 2016 <sup>1</sup>
Meropenem	500mg, 10 vials	£80.75	BNF 2016 <sup>1</sup>
Fidaxomicin	200mg, 20 tablets	£1,350.00	BNF 2016 <sup>1</sup>
Linezolid	600mg, 10 tablets	£360.06	BNF 2016 <sup>1</sup>
Fluconazole	50mg, 7 capsules	£0.91	BNF 2016 <sup>1</sup>
Pantoprazole	20mg, 28 tablets	£0.95	BNF 2016 <sup>1</sup>
Flucloxacillin	500mg, 28 tablets	£1.31	BNF 2016 <sup>1</sup>
Steroid cream	15gr	£1.13	BNF 2016 <sup>1</sup>
Vancomycin	125mg, 28 capsules	£132.47	BNF 2016 <sup>1</sup>

## References

1. Joint Formulary Committee. British National Formulary 70. London: BMJ Group and Pharmaceutical Press; 2016.
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3. Department of Health. National Schedules of Reference Costs: the main schedule. 2016.
4. Office for National Statistics. Annual Survey of Hours and Earnings: 2016 provisional results. 2016.
5. HM Revenue and Customs. Advisory Fuel Rates 1 June 2012 to 28 February 2017. 2016.