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Cohort study evaluating the burden of wounds to the UK's National Health Service in 2017/2018: update from 2012/2013

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ABSTRACT

Objective To evaluate the prevalence of wounds managed by the UK's National Health Service (NHS) in 2017/2018 and associated health outcomes, resource use and costs.

Design Retrospective cohort analysis of the electronic records of patients from The Health Improvement Network (THIN) database.

Setting Primary and secondary care sectors in the UK.

Participants Randomly selected cohort of 3000 patients from the THIN database who had a wound in 2017/2018.

Primary and secondary outcome measures Patients' characteristics, wound-related health outcomes, healthcare resource use and total NHS cost of patient management.

Results There were an estimated 3.8 million patients with a wound managed by the NHS in 2017/2018, of which 70% healed in the study year; 89% and 49% of acute and chronic wounds healed, respectively. An estimated 59% of chronic wounds healed if there was no evidence of infection compared with 45% if there was a definite or suspected infection. Healing rate of acute wounds was unaffected by the presence of infection. Smoking status appeared to only affect the healing rate of chronic wounds. Annual levels of resource use attributable to wound management included 54.4 million district/community nurse visits, 53.6 million healthcare assistant visits and 28.1 million practice nurse visits. The annual NHS cost of wound management was £8.3 billion, of which £2.7 billion and £5.6 billion were associated with managing healed and unhealed wounds, respectively. Eighty-one per cent of the total annual NHS cost was incurred in the community.

Conclusion The annual prevalence of wounds increased by 71% between 2012/2013 and 2017/2018. There was a substantial increase in resource use over this period and patient management cost increased by 48% in real terms. There needs to be a structural change within the NHS in order to manage the increasing demand for wound care and improve patient outcomes.

Strengths and limitations of this study

- This is the first study to estimate how the health economic burden of wounds to the UK's National Health Service (NHS) has changed over the last 5 years.
- This study was undertaken using real-world evidence derived from the anonymised records of a randomised sample of 3000 patients in The Health Improvement Network database (a nationally representative database of clinical practice among >11 million patients registered with general practitioners in the UK).
- The estimates were derived following a systematic analysis of patients' characteristics, wound-related health outcomes and community-based and secondary care resource use pertaining to wound care contained in the patients' electronic records.
- The annual number of 3.8 million wounds in 2017/2018 may be an underestimate since some of the patients in our data set may have had multiple wounds, but this is not transparent in the patients' records and it is very difficult to retrospectively extricate resource use for different wounds from the records of a patient with multiple wounds of the same aetiology.
- The analysis does not consider the potential impact of those wounds that remained unhealed beyond the study period, nor the potential impact of managing patients with wounds being cared for in residential and nursing homes.

INTRODUCTION

Our 2012/2013 burden of wounds study estimated that the UK's National Health Service (NHS) managed 2.2 million patients with a wound at a cost of £5.3 billion.[1–3] An estimated 61% of all wounds in that burden of wounds study healed in the study year (79% of acute wounds and 43% of chronic wounds). Patients were predominantly managed in the community with 18.6 million practice nurse visits, 10.9 million community nurse visits, 7.7 million general practitioner (GP) visits and 3.4 million hospital outpatient visits. Five years ago, patients also received 97.1 million drug prescriptions and 262.2 million dressings. Additionally, only 16% of all cases with an ulcer of the lower limb had a Doppler ankle brachial pressure index (ABPI) recorded in their records.[1]

This study led to such concern among politicians that the UK Parliament (House

of Lords) debated developing a national strategy for improving the standards of wound care in the NHS.[4] As a consequence, NHS England and NHS Improvement established the National Wound Care Strategy Programme in the last quarter of 2018.[5] The aim of the programme is to scope the development of a national strategy for wound care in England that focuses on improving care relating to pressure ulcers, lower limb ulcers and surgical wounds.[5]

Between 2012 and 2017, there was an estimated 4% decline in the number of practice nurses and a 30% decline in the number of district nurses employed in front-line patient care.[6–9] During this period, we reported on unwarranted variation in wound care arising in part from inconsistencies in staff involvement and dressing choice and in many instances a lack of a coherent treatment plan.[10–16] Hence, it is reasonable to assume that not all patients with equal need have always had access to, or received, the same continuous levels of healthcare. However, patients should be afforded the best care available (within the context of limited resources) in order to obtain maximum health gains.[17]

The aim of this new study was to assess the extent of change in the burden of wounds over 5 years (ie, between 2012/2013 and 2017/2018) in terms of annual prevalence, health outcomes, healthcare resource use and NHS costs.

METHODS

Study design

This was a retrospective cohort analysis of the anonymised case records of patients with a wound randomly extracted from The Health Improvement Network (THIN) database. The perspective of the analysis was the UK's NHS.

The THIN database

The THIN database contains electronic records on >11 million anonymised patients entered by GPs from >560 practices across the UK. The patient composition within the THIN database has been shown to be representative of the UK population in terms of demographics and disease distribution[18] and the database theoretically contains patients' entire medical history. In particular, the database collects data on the dates that patients registered or left their practice as well as demographic data, such as date of birth and gender. Patients who reside at the same address or are members of the same family can be linked using a household identifier, provided they are registered with the same general practice.

All medical conditions and symptoms recorded electronically during a patient's consultation in the general practice are recorded in the THIN database, thereby building up long computerised medical histories using Read Codes.[19] GP prescribing is computerised and entered directly into the database. Prescriptions not issued electronically (eg, during home visits) are also entered; however, there is a possibility of under-recording of such items. Information is also recorded on referrals to secondary care, including the specialty. Secondary care information and other medically-related information received by the practice are entered into the database. This includes details on hospital admissions, discharge medication, diagnosis, outpatient consultations, investigations and treatment outcomes. Details from other healthcare interventions, such as information on lifestyle and preventative healthcare, as well as a range of variables such as height, weight, body mass index, blood pressure, smoking, alcohol status, immunisation and laboratory test results are also recorded. Hence, the information contained in the THIN database reflects actual clinical practice. (THIN is a registered trademark of Cegedim SA in the UK and other countries. Reference made to the THIN database is intended to be descriptive of the data asset licensed by IQVIA, who interrogated the database and performed the randomisation independently of the authors. The authors had no direct access to the THIN database.)

Study population

The study population comprised the anonymised case records of a randomly selected cohort of 3000 patients from the THIN database (provided to the authors by IQVIA) who had a wound between 1 March 2017 and 28 February 2018.

Patients were included in the data set if they:

- Were 18 years of age or over.
- Had one of 2086 wound-related Read codes (online supplemental table S1).
- Had continuous medical history in their case record from the first mention of a wound in the study year up to the time the data were extracted from the database, unless they died, in order to exclude patients who had moved or changed their general practice.

Patients were excluded from the data set if they had a surgical wound that healed within 4 weeks of the surgical procedure (since any resource use incurred would be due to the surgical procedure and not the wound) or if they had a dermatological tumour. These inclusion/exclusion criteria are identical to those used in our earlier 2012/2013 study.[1]

Every patient in the THIN database who fulfilled the study's inclusion and exclusion criteria was assigned a random number by IQVIA. A representative sample was then generated by random selection of the random numbers of the whole cohort using a uniform distribution. As such, IQVIA advised that the random sample was representative of the whole population from which it was derived. The complete electronic records of the 3000 patients in the sample were then supplied to the authors, which enabled analysis of data both within and outside of the study period.

Patient and public involvement

Patients and members of the public were not directly involved in this study. The study population was limited to the anonymised records of patients in the THIN database.

Study variables and statistical analyses

Wound type was documented in the patients' records and the authors categorised them as being either acute (ie, abscess, burn, open wound, unhealed surgical wound, trauma) or chronic (ie, diabetic foot ulcer, arterial leg ulcer, mixed leg ulcer, venous leg ulcer, unspecified leg ulcer, pressure ulcer). The following information was systematically extracted from the patients' electronic records over the 12 months from 1 March 2017 to 28 February 2018 according to the protocol approved by the ethics committee.

- Patients' characteristics.
- Patients' comorbidities (defined as a non-acute condition that patients were suffering from in the year before the start of their wound and not necessarily the year before the start of the study period).
- Wound-related healthcare resource use (which included dressings, bandages, topical treatments, negative pressure wound therapy, district nurse and healthcare assistants visits (both of whom provide care within a patient's home), practice nurse visits (who provide care within the general practice), GP visits, hospital outpatient visits, laboratory tests, prescribed medication (ie, analgesics, non-steroidal anti-inflammatory drugs (NSAIDs) and systemic anti-infectives (principally antibiotics)).
- Clinical outcomes (ie, healing and putative infection).

If a patient received a bandage or dressing on a specific date, but a clinician visit was not documented in their record, it was assumed the patient had been seen outside of the general practice by a district/community nurse or healthcare assistant. No other assumptions were made regarding missing data and there were no other interpolations.

The use of individual healthcare resources was quantified for all the patients, individually. These quantities were then used to estimate the total utilisation of each healthcare resource attributable to wound management during the study period, stratified by wound type.

Clinical outcomes and wound-related healthcare resource use associated with the sample of 3000 patients were used to model the healing rates and the total annual amounts of healthcare resource use associated with wound care provided to adult patients who were ≥18 years of age by the NHS in 2017/18.

Differences between subgroups were tested for statistical significance using a χ^2 test. Logistic regression was used to investigate relationships between baseline variables and clinical outcomes. The p values <0.05 were considered statistically significant and have been reported. All p values ≥0.05 were not considered to be statistically significant and these numerical values have not been reported. All statistical analyses were performed using IBM SPSS Statistics (IBM UK, Portsmouth, Hampshire, UK).

Cost of patient management

The NHS cost of wound care for each patient was estimated by assigning unit costs at 2017/2018 prices[20–22] to the quantity of healthcare resources used by individual patients from the time a patient entered the data set (ie, from 1 March 2017 or the start time of their wound if it occurred later) up to the time their wound healed or the end of the study period, whichever came first. The total cost of utilisation of each healthcare resource for the sample of 3000 patients was then combined in order to estimate their total NHS cost of wound management over the study period. The NHS cost of wound management for this cohort was then used to model the total cost of wound care provided to adult patients who were ≥18 years of age by the NHS in 2017/2018. The cost of wound care was also estimated by stratifying patients according to their category of wound. Accordingly, the study only considers the cost of patient management attributable to wounds in primary and secondary care settings, and does not estimate patients' overall healthcare costs.

Sensitivity analyses

Bootstrapping was undertaken to estimate the margin of error surrounding the annual prevalence of wounds and costs. This involved generating subsets of the data of each wound type on the basis of random sampling and replacing the data once sampled. These subsets enabled an estimation of the 95% confidence interval (CI) of (1) the annual number of wounds managed by the NHS in 2017/2018 and (2) the NHS costs of wound management.

Deterministic sensitivity analyses were performed on all of the model's inputs to identify how the NHS cost of wound management would change by varying the different parameters in the model.

RESULTS

Prevalence of wounds in the UK

The base population of the THIN database in 2017/2018 was 2.4 million active adult patients who were ≥18 years of age. The database was interrogated, independently of the authors, to identify patients with at least one of the 2086 wound-related Read codes (only 966 of the 2086 codes had been used). The search identified 174 569 adult patients with a wound in 2017/2018 who matched the study protocol's inclusion and exclusion criteria. The UK's population comprised 52.1 million adults who were ≥18 years of age in mid-2017.[23] Using these variables, the outputs of the modelling were extrapolated to the whole adult population in the UK. Accordingly, the model estimated that there were 3.8 million adult patients with a wound in the UK in 2017/2018 who matched the study protocol's inclusion and exclusion criteria, equivalent to 7% of the adult population (table 1). Bootstrapping was undertaken using 100 subsets of the counts of each wound type. This indicated the lower and upper 95% CIs of the annual number of wounds managed by the NHS in 2017/2018 to be 3.67 million and 3.96 million. Hence, the margin of error surrounding the estimated annual prevalence of wounds is around 3%.

Table 1 Annual number of adult patients with a wound and prevalence of different wound types in the UK

	Annual number of patients with a wound in 2017/2018	Annual prevalence among the adult UK population in 2017/2018	Annual number of patients with a wound in 2012/2013[1]	Percentage change in the annual number of patients with a wound between 2012/2013 and 2017/2018
Abscess	293 000 (8%)	0.0056	160 000 (7%)	83%
Burn	222 000 (6%)	0.0043	87 000 (4%)	155%
Diabetic foot ulcer	326 000 (9%)	0.0063	169 000 (8%)	93%
Leg ulcer (arterial)	31 000 (1%)	0.0022	9 000 (<1%)	244%
Leg ulcer (mixed)	102 000 (3%)	0.0003	24 000 (1%)	325%
Leg ulcer (unspecified)	361 000 (9%)	0.0069	420 000 (19%)	−14%
Leg ulcer (venous)	560 000 (15%)	0.0108	278 000 (13%)	101%
Open wound	337 000 (9%)	0.0065	240 000 (11%)	40%
Pressure ulcer	202 000 (5%)	0.0039	153 000 (7%)	32%
Surgical wound	519 000 (14%)	0.0100	253 000 (11%)	105%
Trauma	249 000 (7%)	0.0048	158 000 (7%)	58%
Unspecified	600 000 (16%)	0.0115	271 000 (12%)	121%
Total	3 802 000 (100%)	0.0730	2 222 000 (100%)	71%

Percentage of total number in parentheses.

Sixteen per cent of all wounds had no diagnosis and it was not possible to infer a wound type from the patients' records. Additionally, 9% of all wounds were a leg ulcer without any further characterisation (ie, venous, arterial or mixed). Hence, the records of 25% of all wounds lacked a recorded differential diagnoses. In total, there were 1 million ulcers of the lower limb, which equates to 2.0% of the adult population having a lower limb ulcer in the study year. Of these, the number of diagnosed venous leg ulcers (560 000) indicates that 1.1% of all adults ≥18 years of age had such an ulcer in the study year. In addition, there were an estimated 326 000 diabetic foot ulcers, which equates to 9% of all adult diabetic patients (ie, 3.46 million individuals[24]) having a foot ulcer in the study year. There were an estimated 202 000 recorded pressure ulcers in the study year, equivalent to 0.4% of the total adult population (table 1).

Patients' characteristics

A representative sample of 3000 patients was randomly selected from the cohort of 174 569 patients with a wound-related Read code by IQVIA. Patients' age in the randomly selected study population was a mean of 57.9 years and 67% were <65 years of age. A total of 56% of patients were female. Mean blood pressure was 130/77 mmHg and patients' body mass index was a mean 29.1 kg/m^2. An estimated 17% of patients were smokers, 30% were ex-smokers and 52% were non-smokers. A total of 73% of patients presented with a new wound in the study year (patients' records predated the onset of the study period, enabling both pre-existing and new wounds to be identified). Table 2 (online supplemental table S2) summarises patients' characteristics according to wound type.

The percentage of patients with different comorbidities in the year before the start of their wound (and not necessarily the year before the start of the study) stratified by wound type is summarised in table 3 (online supplemental table S3). A total of 95% of patients had at least one comorbidity in the year before the start of their wound. Moreover, patients had a mean of 4.1 comorbid conditions and 57% of all patients had diabetes. It is also noteworthy that 13% of patients with a pressure ulcer were recorded as suffering from malnutrition, whereas it was ≤5% of patients with other wound types.

Clinical outcomes

The THIN database does not define wound healing. Wound healing was a clinical observation documented in the patient's record by their managing clinician, but not necessarily confirmed by a specialist, and it is unknown if the clinicians who managed these patients used any consistent definition. Furthermore, if a wound was not recorded as being healed it was considered to be unhealed. This assumption was supported by continued clinician visits for wound care and the continued prescribing of wound care products. On this basis, table 4 (online supplemental table S4) summarises the recorded healing rates stratified by wound type and various sub-groups between 1 March 2017 and 28 February 2018. A total of 70% of all wounds (n=2.7 million) healed in the study year; 89% of acute wounds healed and 49% of chronic wounds. An estimated 30% of all wounds (n=1.1 million) remained unhealed. Patients' age did not appear to affect the overall healing rate. However, 59% of chronic wounds healed if there was no evidence of infection compared with 45% if there was a definite or suspected infection. The healing rate among acute wounds was unaffected by the presence of infection

Table 2 Patients' baseline characteristics

	Diabetic foot ulcer	Leg ulcer (venous)	Open wound	Pressure ulcer	Surgical wound	Unspecified	Other acute wounds*	Other chronic wounds†	All wounds
Mean age per patient (years)	62.3	70.9	53.4	76.1	55.4	55.9	48.4	55.9	57.9
Percentage male	51%	48%	40%	40%	42%	49%	40%	42%	44%
Percentage smoker	11%	7%	18%	7%	19%	22%	23%	18%	17%
Percentage ex-smoker	37%	44%	29%	40%	29%	28%	20%	24%	30%
Percentage non-smoker	52%	48%	51%	40%	52%	49%	55%	58%	52%
Percentage with unknown smoking status	0%	1%	2%	13%	0%	1%	2%	0%	1%
Mean body mass index per patient (kg/m^2)	30.9	31.5	29.6	24.5	28.3	28.9	28.6	28.6	29.1
Percentage with new wounds in the study period	61%	59%	87%	80%	77%	80%	81%	62%	73%
Percentage of all wounds with a recorded infection	78%	41%	94%	13%	35%	1%	24%	63%	40%

*Other acute wounds comprise abscesses, burns and traumatic wounds.
†Other chronic wounds comprise arterial, mixed and unspecified leg ulcers. Full details are available in online supplemental table S2.

(86% vs 91% among acute wounds with no evidence of infection). An estimated 38% of chronic wounds healed if patients were smokers compared with 55% and 58% if patients were non-smokers or ex-smokers, respectively. Smoking status did not appear to affect the healing rate of acute wounds (table 4, online supplemental table S4).

For the whole cohort of patients with a wound, binary logistic regression suggested that cardiovascular disease (OR 0.57 (95% CI 0.46 to 0.71); p<0.001), immunological disorders (OR 0.62 (95% CI 0.45 to 0.86); p=0.003) and renal disorders (OR 0.56 (95% CI 0.43 to 0.73); p<0.001) were independent risk factors for non-healing during the study period. Additionally, the presence of renal disease was an independent risk factor for non-healing of diabetic foot ulcers (OR 0.28 (95% CI 0.13 to 0.62); p=0.002), and diabetes was an independent risk factor for non-healing of venous leg ulcers (OR 0.10 (95% CI 0.01 to 0.96); p<0.02).

Healthcare resource use associated with patient management

Patients were predominantly managed in the community by GPs, practice nurses, district/community nurses and healthcare assistants. Table 5 (online supplemental table S5) summarises the percentage of patients who utilised different resources during the study year and table 6 shows the annualised resources associated with each wound type. All the hospital admissions attributable to venous and mixed leg ulcers appeared to be linked to a suspected infection. So too were 80% of admissions attributable to diabetic foot ulcers and 95% of admissions attributable to open wounds. All these hospitalised patients with a suspected infection were prescribed antibiotics. All the hospitalised open wounds and 50% of the diabetic foot ulcers healed in the study period, but none of the venous and mixed leg ulcers healed. Less than 50% of admissions attributable to the other wound types appeared to be linked to a suspected infection and 90% of them healed during the study period. Only one-third of admissions attributable to surgical wounds and trauma appeared to be linked to a suspected infection.

Patients' treatment varied according to wound type and wound duration. Patients were prescribed a mix of dressings up to the time their wound healed or the end of the study period, whichever came first. Overall, patients' dressings were changed every 3–4 days at a nursing visit. However, this varied according to wound type. On average:

- Those patients with a burn or a venous leg ulcer had one nursing visit/dressing change every 2–3 days.
- Those patients with a diabetic foot ulcer, arterial leg ulcer, mixed leg ulcer, pressure ulcer or surgical wound had one nursing visit/dressing change every 3–4 days.
- Those patients with an unspecified leg ulcer, open wound, trauma or unspecified wound had one nursing visit/dressing change every 4–5 days.
- Those patients with an abscess had one nursing visit/dressing change every 5–6 days.

Less than 1% of patients were prescribed the same dressing for the duration of their wound or study period. On average, patients were prescribed a mean of eight different dressing types over the study period, ranging from a mean of four different dressing types for patients with a burn to a mean of nine different dressing types for patients with an unclassified wound. In addition to dressings and bandages, varying percentages of patients were prescribed analgesics, NSAIDs and antibiotics as shown in table 5 (online supplemental table S5).

Table 3 Percentage of patients with a comorbidity in the year before the start of their wound

	Diabetic foot ulcer	Leg ulcer (venous)	Open wound	Pressure ulcer	Surgical wound	Unspecified	Other acute wounds*	Other chronic wounds†	All wounds
Cardiovascular	70%	78%	44%	53%	47%	51%	36%	54%	53%
Dermatological	60%	41%	51%	40%	51%	45%	51%	52%	49%
Endocrinological	99%	52%	69%	60%	63%	57%	54%	38%	60%
Diabetes	100%	37%	67%	60%	59%	52%	51%	34%	57%
Gastroenterological	42%	19%	34%	47%	37%	35%	31%	32%	33%
Genitourinary	28%	19%	25%	27%	28%	24%	23%	23%	24%
Immunological	13%	11%	10%	7%	9%	9%	8%	6%	9%
Malnutrition	2%	4%	1%	13%	1%	3%	1%	4%	3%
Musculoskeletal	62%	59%	49%	73%	57%	56%	48%	62%	56%
Neurological	24%	33%	18%	67%	22%	17%	18%	24%	24%
Oncological	25%	7%	14%	27%	18%	19%	15%	17%	16%
Ophthalmological	20%	4%	11%	33%	13%	10%	11%	15%	12%
Psychiatric	39%	15%	35%	33%	35%	35%	39%	47%	35%
Renal	30%	30%	12%	40%	14%	16%	7%	18%	18%
Respiratory	45%	33%	36%	33%	38%	37%	39%	43%	38%
Mean number of comorbidities per patient	5.7	4.0	4.1	5.6	4.3	4.2	3.8	4.4	4.1

Those with diabetes are a subset of those with an endocrinological comorbidity.
*Other acute wounds comprise abscesses, burns and traumatic wounds.
†Other chronic wounds comprise arterial, mixed and unspecified leg ulcers. Full details are available in online supplemental table S3.

Table 4 Healing rates in the study period

	Diabetic foot ulcer	Leg ulcer (venous)	Open wound	Pressure ulcer	Surgical wound	Unspecified	Other acute wounds*	Other chronic wounds†	All wounds
Wounds that healed in the study period	52%	37%	90%	60%	85%	85%	88%	49%	70%
New wounds that healed in the study period	60%	56%	90%	75%	86%	88%	86%	36%	76%
Existing wounds that healed in the study period	40%	9%	90%	0%	80%	73%	93%	77%	56%
Wounds that healed with no evidence of infection	57%	50%	93%	62%	87%	86%	91%	54%	77%
Wounds that healed with recorded evidence of infection	50%	18%	89%	50%	81%	38%	78%	46%	60%
Wounds that healed among smokers	33%	25%	88%	33%	82%	85%	89%	43%	64%
Wounds that healed among ex-smokers	53%	39%	88%	67%	83%	88%	87%	48%	70%
Wounds that healed among non-smokers	56%	38%	93%	75%	88%	84%	90%	52%	74%

*Other acute wounds comprise abscesses, burns and traumatic wounds.
†Other chronic wounds comprise arterial, mixed and unspecified leg ulcers. Full details are available in online supplemental table S4.

Assessment of peripheral perfusion is a recognised requirement for leg ulcer and diabetic foot management. However, only 15% of all those with a leg or foot ulcer had a Doppler ABPI recorded in their records, of which 75% were prescribed some form of compression. Of the 85% who did not have their ABPI recorded, 29% were prescribed compression bandages/hosiery (table 7). Over 90% of the patients with a recorded venous leg ulcer were prescribed compression bandages/hosiery, irrespective of whether they had their ABPI recorded; so too did >50% of patients with a recorded diabetic foot ulcer (table 7).

NHS cost of patient management

The total annual NHS cost of managing 3.8 million patients with a wound was estimated to be £8.3 billion (95% CI £7.9 to £8.5) billion (table 8). The use of 100 bootstrapped samples indicated a 5% margin of error around the costs (table 8). When the bootstrapping was repeated using 1000 subsets of cost data, the margin of error decreased to 1% (ie, 95% CI £8.2 to £8.4 billion). District/community nurse visits were the primary cost driver accounting for 29% of all costs and GP office visits were the secondary cost driver accounting for a further 18% of the total cost. Healthcare assistant visits accounted for 17% of the total cost, practice nurse visits for 7% and wound care products for a further 6% (table 8).

Resource use associated with managing the unhealed wounds was substantially greater than that of managing the healed wounds (table 9). Consequently, the annual cost of managing the 70% of wounds that healed was estimated to be £2.7 billion compared with £5.6 billion for the 30% of wounds that did not heal within the study year. In addition, within the study period, the cost per healed wound ranged from £358 to £4684 per patient and that of an unhealed wound ranged from £831 to £7886 per patient (table 10).

Eighty-one per cent of the total annual NHS cost was incurred in the community and the remainder in secondary care. However, the distribution of costs varied according to wound type, with 68% and 85% of the total annual NHS cost of managing acute and chronic wounds, respectively, being incurred in the community and the remainder in secondary care.

Sensitivity analyses

When the healing rate of each wound type was simultaneously varied by ±25%, the total annual NHS cost of wound management changed by ±16%. When the estimated annual number of each wound type was individually changed by ±25%, the total annual NHS cost of wound management changed by 10% or less. When the estimated amounts of resource use were individually varied by ±25%, the total annual NHS cost of managing 3.8 million wounds changed by 7% or less. When the unit costs of wound care products were simultaneously varied by ±25%, the total annual NHS cost of managing 3.8 million patients with a wound changed by <3%.

DISCUSSION

The 2012/2013 burden of wounds study[1 2] incorporated a predictive model[3] which forecast that the prevalence of wounds would increase by 11% per annum. Thus,

Table 5 Percentage of patients who utilised resources in the study year

	Diabetic foot ulcer	Leg ulcer (venous)	Open wound	Pressure ulcer	Surgical wound	Unspecified	Other acute wounds*	Other chronic wounds†	All wounds
District/community nurse visits	96%	85%	24%	60%	46%	44%	34%	85%	38%
Healthcare assistant visits	93%	81%	21%	40%	46%	44%	25%	87%	36%
Practice nurse visits	94%	96%	97%	93%	97%	98%	96%	85%	97%
GP office visits	97%	100%	90%	93%	82%	62%	89%	100%	84%
Dressings	100%	100%	100%	100%	100%	100%	100%	100%	100%
Compression bandaging/ hosiery	15%	93%	5%	0%	3%	6%	2%	40%	6%
Prescribed analgesics/ non-steroidal anti-inflammatories	57%	81%	12%	53%	24%	20%	17%	46%	21%
Prescribed antibiotics	92%	81%	81%	67%	43%	26%	56%	86%	50%
Hospital outpatient visits with a nurse	35%	37%	8%	0%	18%	31%	15%	20%	17%
Accident and emergency attendances	23%	30%	8%	7%	8%	4%	13%	11%	8%
Hospital admissions without surgery	4%	7%	7%	13%	8%	8%	7%	4%	7%
Hospital outpatient visits with a physician/surgeon	15%	7%	4%	20%	8%	1%	4%	9%	5%
GP home visits	2%	11%	1%	13%	2%	1%	2%	2%	2%
Diagnostic tests	3%	0%	1%	0%	2%	3%	1%	4%	2%
Ambulance services	3%	4%	0%	0%	1%	1%	0%	1%	1%
Hospital admissions with surgery	2%	0%	0%	0%	6%	0%	2%	0%	2%
Specialist nurse visits‡	3%	0%	0%	7%	1%	1%	0%	2%	1%
Podiatrist visits	3%	0%	1%	7%	1%	0%	1%	6%	1%
Day cases	0%	0%	0%	0%	1%	<1%	0%	0%	<1%

*Other acute wounds comprise abscesses, burns and traumatic wounds.
†Other chronic wounds comprise arterial, mixed and unspecified leg ulcers. Full details are available in online supplemental table S5.
‡Includes tissue viability nurses and diabetic nurse specialists.
GP, general practitioner.

the model predicted there would be 3.8 million patients with a wound in 2017/2018. The findings from the current analysis are consistent with the estimates from this predictive model, with the overall annual number of patients with a wound having increased by 71% over the 5 years to 3.8 million. However, the rate of increase varied according to wound type. The annual number of patients with a wound increased by ≥100% for many wound types, but some acute wounds increased by ≤83% and pressure ulcers by only 32%, perhaps due in part to the ongoing pressure ulcer prevention campaign.[25] The model also predicted that costs would increase in parallel with prevalence. However, when the £5.3 billion[1] was uprated to 2017/2018 prices (ie, £5.6 billion), it would appear that the annual cost of wound care has increased at an approximate rate of 8%–9% per annum. Hence, the overall annual NHS cost of wound care has increased by 48% in real terms over the 5 years.

The aim of this study was to assess the annual health economic burden of wounds by quantifying the amount of resource use and corresponding costs associated with wound management in 2017/2018. From the NHS' perspective, resource use and corresponding cost of managing a patient with multiple wounds does not end until all the wounds heal. Some of the patients in our data set may have had multiple wounds, but this was not specifically listed within the database and was not transparent in the patients' records. Furthermore, it would be very difficult to retrospectively extricate resource use for different wounds from the records of a patient with multiple wounds of the same aetiology. Notwithstanding this, it would be unusual for an individual to have two wounds of different aetiologies at the same time. However, it may be that in 2017/2018, some of the patients with an ulcer of the lower limb had a second ulcer, although it would be unlikely that patients with other wounds would

Table 6 Annual amount of National Health Service resource use attributable to managing 3.8 million patients with a wound (thousands)

	Abscess	Burn	Diabetic foot ulcer	Leg ulcer (arterial)	Leg ulcer (mixed)	Leg ulcer (unspecified)	Leg ulcer (venous)	Open wound	Pressure ulcer	Surgical wound	Trauma	Unspecified	All wounds
District/community nurse visits	1069.31	2124.01	10 443.18	895.38	4411.41	6093.17	17 459.02	797.34	5789.24	2791.44	234.97	2305.39	54 413.86
Healthcare assistant visits	1111.38	1283.91	10 641.73	1020.07	4671.18	6946.81	17 619.78	804.15	3839.82	3047.33	238.16	2423.08	53 647.40
Practice nurse visits	745.32	484.97	3428.04	187.59	1938.34	1278.84	14 461.10	545.16	1128.81	1217.10	290.62	2356.74	28 062.63
GP office visits	632.13	382.27	2436.59	115.97	1173.09	1102.64	9855.13	497.20	1196.00	983.00	292.53	1424.03	20 090.58
Dressings	7383.46	5580.89	51 475.28	4007.17	19 817.92	26 030.08	79 863.79	6759.11	9467.04	27 172.85	4028.25	22 913.59	264 499.43
Compression bandaging/hosiery	160.32	62.52	588.14	0.00	1691.43	258.85	27 259.29	239.70	0.00	260.19	0.00	407.91	30 928.35
Prescribed medication	827.59	235.79	2948.13	242.17	1473.18	1787.04	5498.12	641.18	1760.41	922.26	177.91	1359.55	17 873.33
Hospital outpatient visits with a nurse	171.46	171.49	583.19	20.47	709.31	190.11	3672.33	43.82	0.00	286.86	18.26	600.07	6467.37
Accident and emergency attendances	57.15	46.44	150.74	10.23	47.74	19.01	248.97	30.41	40.32	57.93	13.23	35.83	758.00
Hospital admissions without surgery	24.01	17.86	19.77	0.00	3.41	19.01	62.24	33.98	26.88	60.74	23.30	78.81	370.01
Hospital outpatient visits with a physician/surgeon	18.29	0.00	61.78	6.82	10.23	28.52	41.50	14.31	40.32	40.18	18.26	5.37	285.57
GP home visits	5.72	7.15	14.83	0.00	17.04	0.00	62.24	5.37	40.32	11.21	1.89	24.18	189.95
Diagnostic tests	1.14	3.57	17.30	0.00	30.69	47.53	0.00	3.58	0.00	14.02	2.83	23.29	143.95
Ambulance services	2.29	0.00	9.89	0.00	3.41	0.00	41.49	0.00	0.00	4.67	0.00	5.37	67.12
Hospital admissions with surgery	4.57	3.57	4.95	0.00	0.00	0.00	0.00	0.00	0.00	34.57	3.46	0.00	51.12
Specialist nurse visits*	0.00	0.00	17.30	0.00	10.23	0.00	0.00	0.00	13.44	0.93	0.00	3.74	45.64
Podiatrist visits	2.29	0.00	9.89	13.64	17.04	0.00	0.00	0.89	13.44	1.87	0.32	0.00	59.38
Day cases	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87	0.00	0.90	3.91

*Includes tissue viability nurses and diabetic nurse specialists.
GP, general practitioner.

Table 7 Use of Doppler in patients with an ulcer of the lower limb to measure ankle brachial pressure index

Ulcer type	Percentage who had a recorded Doppler	Percentage who did not have a recorded Doppler	Percentage of these who were prescribed a compression bandage/hosiery
Venous leg ulcer	59%		88%
		41%	99%
Arterial leg ulcer	22%		0%
		78%	0%
Mixed leg ulcer	27%		100%
		73%	100%
Unspecified leg ulcer	0%		0%
		100%	26%
Diabetic foot ulcer	8%		50%
		92%	12%
All lower limb ulcers	15%		75%
		85%	29%

have multiple wounds. If 10% of patients with an ulcer of the lower limb had a second ulcer, the total number of wounds would increase by 5% from 3.8 million to 4.0 million. The implication of this is that the NHS may have managed more than 3.8 million wounds in 2017/2018. Nevertheless, the estimated amount of resource use and corresponding costs as presented would remain unchanged since all the resources and wound care products used in managing each patient were documented in their record (despite the lack of granularity surrounding the number of wounds they may have had).

Another study limitation was the exclusion of a wound if it recurred after having healed during the study period. If 10% of the diabetic foot ulcers, venous leg ulcers and pressure ulcers and 5% of the other leg ulcers recurred after healing in the study period, it would imply that 3.8 million patients had 3.97 million wounds in 2017/2018. If these wounds recurred, on average, at the 6 months mid-point, the annual NHS cost of wound care could be potentially 2% higher than estimated at £8.5 billion.

In the 2012/2013 data set, 65% of all the patients with a wound were 65 years of age or older.[1 2] However, in the 2017/2018 data set, only 33% of patients were 65 years of age or older. This was a significant difference (p<0.001), suggesting that wounds are no longer predominantly the preserve of the elderly. In 2012/2013, 39% of all patients were non-smokers. However, by 2017/2018, this percentage had increased significantly to 52% (p<0.001). In parallel with these changes in the patient demographics, there was a change in the distribution of comorbidities. In particular, in 2012/2013, 73% and 37% of patients had cardiovascular and musculoskeletal disorders, but in 2017/2018 an estimated 53% (p<0.001) and 56% (p<0.02) had cardiovascular and musculoskeletal disorders, respectively. Most striking, however, was that 29% of the 2012/2013 cohort had diabetes compared with 57% in 2017/18 (p<0.05). Additionally, the variation in the mean number of comorbidities associated with different wound types in this study parallels the variation in Charlson Comorbidity Index associated with different wound types observed in a patient population in Asia.[26]

Over the 5-year period, the healing rate of acute wounds increased by a mean of 13% and that of chronic wounds by a mean of 14%. However, within this estimate, the healing rate of diabetic foot ulcers and pressure ulcers increased by 27% and 43%, respectively, but the healing rate of venous and mixed leg ulcers decreased by 21% and 29%, respectively. The percentage of patients accessing different resources increased over the 5 years and so too did the absolute amount of resource use. For example, between 2012/2013 and 2017/2018, there was >10 000% increase in the number of healthcare assistant visits (from 0.5 million to 53.6 million), a 399% increase in the number of district/community nurse visits (from 10.9 million to 54.4 million), 164% increase in the number of GP visits (from 7.7 million to 20.3 million), 100% increase in the number of hospital outpatient visits (from 3.4 million to 6.8 million) and 51% increase in the number of practice nurse visits (from 18.6 million to 28.1 million). In addition, there was a 2% decrease in the number of specialist nurse visits and a 104% increase in the amount of wound care products used. The changes in the annual cost of these resources mirror the changes in utilisation of these resources. Accordingly, the NHS cost of wound care in 2017/2018 was an estimated £8.3 billion, which is approaching the combined annual NHS cost of managing osteo and rheumatoid arthritis, which was reported to be £10.2 billion in 2017.[27]

The shift towards greater utilisation of community-based resources is reflected in the distribution of care between secondary care and the community. In 2012/2013, 48% of the costs of managing acute wounds and 78% of the costs of managing chronic wounds were incurred in the community and the remainder in secondary care.[1 2] In 2017/2018, 68% and 85% of the costs of managing acute and chronic wounds, respectively, were incurred in the community and the remainder in secondary care.

This present study has also highlighted that resource use associated with managing the 30% of wounds that did not heal in the study year was substantially greater than that of managing the 70% of wounds that did heal within the study year (eg, 325% more hospital outpatient visits, 178% more practice nurse visits, 171% more GP visits, 118% more accident and emergency attendances, 97% more district/community nurse visits and 85% more healthcare assistant visits). Consequently, the annual cost of managing wounds that healed within the study year was estimated to be £2.7 billion compared with £5.6 billion for the 30% of wounds that did not heal within the study year. In addition, the mean cost of an unhealed wound (£3700) was approximately 2.5 times more than that of a wound that healed during the study period (£1500). Sensitivity

Table 8 Annual cost of National Health Service (NHS) resource use attributable to managing 3.8 million patients with a wound (£ million at 2017/2018 prices).

	Abscess	Burn	Diabetic foot ulcer	Leg ulcer (arterial)	Leg ulcer (mixed)	Leg ulcer (unspecified)	Leg ulcer (venous)	Open wound	Pressure ulcer	Surgical wound	Trauma	Unspecified	Total	
District/community nurse visits	£48.12	£95.58	£469.94	£40.29	£198.51	£274.19	£785.66	£35.88	£260.52	£125.61	£10.57	£103.74	£2448.61	(29%)
GP office visits	£46.78	£28.29	£180.31	£8.58	£86.81	£81.60	£729.28	£36.79	£88.50	£72.74	£21.65	£105.38	£1486.71	(18%)
Healthcare assistant visits	£28.90	£33.38	£276.69	£26.52	£121.45	£180.62	£458.11	£20.91	£99.84	£79.23	£6.19	£63.00	£1394.84	(17%)
Hospital admissions without surgery	£30.25	£22.51	£24.91	£0.00	£11.06	£61.67	£201.92	£42.82	£33.86	£76.53	£29.36	£99.31	£634.20	(8%)
Hospital outpatient visits with a nurse	£16.65	£16.66	£56.65	£1.99	£68.90	£18.47	£356.69	£4.26	£0.00	£27.86	£1.77	£58.28	£628.18	(8%)
Practice nurse visits	£15.65	£10.18	£71.99	£3.94	£40.71	£26.86	£303.68	£11.45	£23.71	£25.56	£6.10	£49.49	£589.32	(7%)
Wound care products	£10.81	£12.65	£92.48	£5.80	£38.14	£39.24	£225.10	£10.68	£19.05	£33.57	£5.50	£38.36	£531.38	(6%)
Prescribed medication	£12.90	£3.68	£45.55	£3.74	£22.67	£27.76	£84.36	£10.00	£27.09	£14.30	£2.79	£20.90	£275.74	(3%)
Hospital admissions with surgery	£9.67	£13.38	£20.69	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£73.12	£7.33	£0.00	£124.19	(1%)
Accident and emergency attendances	£9.16	£7.44	£24.15	£1.64	£7.65	£3.05	£39.89	£4.87	£6.46	£9.28	£2.12	£5.74	£121.45	(1%)
Hospital outpatient visits with a physician/surgeon	£2.44	£0.00	£8.23	£0.91	£1.36	£3.80	£5.53	£1.91	£5.37	£5.35	£2.43	£0.72	£38.05	(<1%)
GP home visits	£0.69	£0.87	£1.80	£0.00	£2.07	£0.00	£7.56	£0.65	£4.90	£1.36	£0.23	£2.94	£23.07	(<1%)
Ambulance services	£0.35	£0.00	£1.49	£0.00	£0.52	£0.00	£6.27	£0.00	£0.00	£0.71	£0.00	£0.81	£10.15	(<1%)
Podiatrist visits	£0.31	£0.00	£1.34	£1.85	£2.31	£0.00	£0.00	£0.12	£1.82	£0.25	£0.04	£0.00	£8.04	(<1%)
Day cases	£0.84	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£1.37	£0.00	£0.66	£2.87	(<1%)
Specialist nurse visits*	£0.00	£0.00	£1.11	£0.00	£0.66	£0.00	£0.00	£0.00	£0.86	£0.06	£0.00	£0.24	£2.93	(<1%)
Diagnostic tests	£0.00	£0.01	£0.03	£0.00	£0.06	£0.09	£0.00	£0.01	£0.00	£0.03	£0.01	£0.04	£0.28	(<1%)
Total cost	£233.52	£244.63	£1277.36	£95.26	£602.88	£717.35	£3204.05	£180.35	£571.98	£546.93	£96.09	£549.61	£8320.01	(100%)
95% confidence intervals around the total cost†	£233.17 to £241.31	£233.97 to £253.68	£1250.56 to £1292.10	£86.78 to £97.85	£563.53 to £594.45	£704.66 to £740.45	£2973.68; to £3261.84	£175.64 to £182.46	£501.67 to £577.57	£540.69 to £555.76	£93.10 to £97.87	£539.47 to £571.17	£7,896.93 to £8466.51	

Percentage of total cost in parentheses.
*Includes tissue viability nurses and diabetic nurse specialists.
†Based on 100 bootstrapped samples.
GP, general practitioner.

Table 9 Annual amount and corresponding cost (at 2017/2018 prices) of National Health Service (NHS) resource use attributable to managing 3.8 million patients with a wound, stratified by healing

	Annual number (thousand)			Annual cost (£ million)		
	Healed	Unhealed	Percentage difference in resource use (%)	Healed	Unhealed	Percentage difference in resource cost (%)
Number of patients with a wound	2677.00	1125.00				
Ambulance services	4.51	62.61	1288%	£0.68	£9.47	1293%
Hospital outpatient visits	1286.85	5466.09	325%	£130.85	£535.38	309%
Practice nurse visits	7430.80	20631.83	178%	£156.05	£433.27	178%
GP visits	5460.16	14820.37	171%	£407.22	£1102.56	171%
Podiatrist visits	16.11	43.27	169%	£2.18	£5.86	169%
Prescribed medication	5593.33	12280.00	120%	£86.72	£189.02	118%
Accident and emergency attendances	238.34	519.66	118%	£38.19	£83.26	118%
District/community nurse visits	18342.87	36070.99	97%	£825.59	£1623.02	97%
Wound care products (dressings/ bandages/hosiery/creams/ointments/ tapes, etc)				£181.06	£350.32	93%
Healthcare assistant visits	18816.65	34830.75	85%	£489.23	£905.61	85%
Specialist nurse visits*	21.12	24.52	16%	£1.35	£1.58	17%
Hospital admissions and day cases	286.73	138.31	–52%	£427.89	£333.37	–22%
Diagnostic tests	86.89	57.06	–34%	£0.19	£0.09	–53%
Total				£2747.20	£5572.81	103%

*Includes tissue viability nurses and diabetic nurse specialists.
GP, general practitioner.

analysis showed the healing rate to have a large effect on the cost of wound care and regression analysis indicated that the presence of cardiovascular disease or immunological disorders or renal disorders were all independent risk factors for non-healing during the study period. In the 2012/2013 study both nutritional deficiency and diabetes were independent risk factors for non-healing during the study period.[1] In this study, only a mean of

Table 10 Total annual National Health Service (NHS) cost (at 2017/2018 prices) of wound care attributable to managing 3.8 million patients with a wound and cost per patient, stratified by healing

	Total NHS cost for all patients (£ million)		Mean annual NHS cost per patient	
	Healed wounds	Unhealed wounds	Healed wounds	Unhealed wound
Abscess	152.12	81.40	£604.88	£1977.94
Burn	140.23	104.40	£754.81	£2922.16
Diabetic foot ulcer	490.11	787.25	£2874.36	£5056.71
Leg ulcer (arterial)	53.70	41.56	£2623.83	£4061.31
Leg ulcer (mixed)	143.77	459.11	£4684.15	£6411.01
Leg ulcer (unspecified)	379.58	337.77	£1901.79	£2089.98
Leg ulcer (venous)	422.56	2781.49	£2036.67	£7886.05
Open wound	127.51	52.84	£421.83	£1515.03
Pressure ulcer	90.44	481.54	£747.75	£5972.28
Surgical wound	389.92	157.01	£884.11	£2024.49
Trauma	83.78	12.31	£358.09	£831.63
Unspecified	273.48	276.13	£533.82	£3146.03

3% of patients had malnutrition, possibly reflecting the significantly lower age of the study population. However, 13% of patients with a pressure ulcer had malnutrition and their BMI was a mean of 24.5 kg/m^2 which was lower than that of patients with other wound types. Diabetes was not found to exert an independent effect on healing possibly because 59% of the patients with diabetes also had cardiovascular disease, 19% had renal disease, and 11% had immunological disorders. In addition, 61% of the patients with diabetes had musculoskeletal disorders and 38% had a mental health condition (principally depression and anxiety). The age of the patients with diabetes was a mean of 59.2 years per patient and 44% were male.

This and many other studies[10–12 28 29] have shown that wound management is predominantly a nurse-led discipline. Nevertheless, there still seems to be minimal clinical involvement of tissue viability nurses and other specialist nurses in direct patient management. In addition, dressing and bandage types were continually switched at successive wound dressing changes for the majority of patients, suggesting confusion and conflict within the treatment plan. It was not possible to determine which professional groups were the decision makers in relation to changes in dressing type and what the goal of treatment changes were as this information was not specifically recorded in the patients' records. Moreover, an estimated 25% of all wounds being managed within the NHS in 2017/2018 lacked a recorded differential diagnosis in the patient's record. Furthermore, only 15% of patients with an ulcer on the lower limb had a vascular assessment with Doppler ABPI recorded in their records, contrary to national guidance.[30 31] Nevertheless, we observed a 14% decrease in the proportion of patients with unspecified leg ulcers since 2015 which may be due to an increase in measuring ABPI even if it was not documented in the patients' records. It remains unclear and disappointing to find that records still lacked documentation of this essential investigation. Moreover, 5 years later, patients' records still appear to lack any evidence of consistent reporting of wound management processes. This may be indicative of the difficulties experienced by non-specialist healthcare professionals in the community with establishing a working diagnosis.

It seems unclear how the NHS can best respond to the ever-increasing demand for wound care. The NHS Long Term Plan[32] has described how the NHS will move to a new service model in which patients will have properly joined-up care at the right time in the optimal care setting. This will involve having online 'digital' GP consultations, and redesigned hospital support in order to free-up about one-third of outpatient appointments.[32] Additionally, GP practices will be funded to create integrated teams of GPs, community health and social care staff.[32] These expanded community health teams will provide fast support to people in their own homes.[32] Ultimately, the NHS will aim to create Integrated Care Systems everywhere by April 2021, which bring together local organisations to deliver a 'triple integration' of primary and specialist care, physical and mental health services and health with social care.[32] Additionally, commissioners will be tasked to share decisions with providers on population health, service redesign and long term plan implementation.[32] Such a change in the system may facilitate getting the optimum care to patients at the right time in the right setting in order to improve the patient experience and health outcomes, thereby freeing-up healthcare resources and reducing costs. However, will this method of care delivery improve wound care and associated patient outcomes? The introduction of truly seamless care with integrated electronic patient records would improve overall patient management. However, patients with wounds need face-to-face interaction with clinicians on a regular basis to monitor progress and have their dressings changed. The authors are therefore of the opinion that this model would require the NHS to establish dedicated wound care clinics in the community at which patients receive consistent and integrated care from clinicians with qualified experience in wound care, with the clinics linking directly to electronic patient records which are integrated across all healthcare sectors. These clinics could provide both direct care and holistic assessments of patients allowing coordinated management of any comorbidities which may impact on wound healing

The advantages and disadvantages of using the THIN database for this study have been previously discussed.[1] In summary, the advantage of using the THIN database is that the patient pathways and associated resource use are based on real-world evidence derived from clinical practice. However, the possibility of resource use associated with managing a comorbidity being conflated with that of wound management cannot be excluded. While the study results are compelling, the analyses were based on clinicians' entries into their patients' records and inevitably subject to a certain amount of imprecision and lack of detail. Moreover, the computerised information in the THIN database is collected by GPs for clinical care purposes and not for research. Prescriptions issued by GPs and practice nurses are recorded in the database, but it does not specify whether the prescriptions were dispensed or detail patient compliance with the product. Despite these limitations, it is the authors' opinion that the THIN database affords one of the best sources of real-world evidence for clinical practice in the UK, since it is representative of the whole UK population[18 33] and there are only minor differences between this and other real-world evidence databases in the UK.[33] Moreover, the changes between 2012/2013 and 2017/2018 are clinically relevant, since the sample size in this study was 3000 patients versus 1000 patients in the earlier study. Furthermore, a review of Medline in August 2020 identified 283 articles in peer-reviewed journals in which the THIN database had been used to characterise clinical practice in a wide range of therapeutic areas in the UK, of which 28 had been published in *BMJ Open* since 2014. Notwithstanding this, it is not possible to ascertain from the data

set whether some of the changes between 2012/2013 and 2017/2018 are due to increased complexity of wound aetiology and a decrease in competency of the clinical staff caring for these patients. There is no recognised complexity index/score for wounds so any measure of this would be subjective. Additionally, the low involvement of senior staff in patient management may indicate competency as a possible issue, but this cannot be quantified.

The analysis does not consider the potential impact of those wounds that remained unhealed beyond the study period. The THIN database may have under-recorded use of some healthcare resources outside the GP's surgery if not documented in the GP records, and the impact of this was addressed in sensitivity analyses. In particular, not all community records may have been linked to the GP records. The analysis excluded hospital-based prescribing, but this should have minimal impact on the results as most prescribing is undertaken by GPs and nurses in the community. Also excluded is the potential impact of managing patients with wounds being cared for in residential and nursing homes.

The analysis only considered the annual cost of NHS resource use for the 'average adult patient', and no attempt was made to stratify resource use and costs according to gender, comorbidities, wound size, wound severity and other disease-related factors. Also excluded were the costs incurred by patients and indirect societal costs as a result of patients taking time off work. In 2012/2013, only 35% of patients with a wound were of working age. However, in 2017/2018 nearly 70% of the cohort was less than 65 years of age and 6% of patients in this age group were admitted into hospital. In April 2018, the gross median salary for full-time employees was £569 per week.[34] Hence, the indirect societal cost in lost gross domstic product (GDP) arising from hospitalisation (assuming 96% of these patients were in full-time employment[35]) amounted to £87 million. This is likely to be an underestimate, since a proportion of patients are likely to be absent from work due to their wound, but residing in their home. Nevertheless, this is a relatively negligible indirect cost considering that nocturia (which predominantly affects the elderly population) accounts for over £4 billion in lost GDP.[36]

Notwithstanding the study's limitations, real-world evidence highlights the substantial burden that wounds continue to impose on the NHS in an average year. Clinical and economic benefits to both patients and the NHS could accrue from strategies that focus on (1) accurate diagnosis, (2) preventing infection and (3) improving wound-healing rates. However, these benefits are unlikely to be realised unless there is a structural change within the NHS in order to manage the increasing demand for wound care.

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Contributors JFG designed the study, obtained the THIN data set, managed the analyses, performed some analyses, checked all the other analyses, and wrote the manuscript. GWF conducted much of the analyses. PV scrutinised the analyses, suggested further analyses and helped interpret some of the findings. All the authors were involved in revising the manuscript and gave final approval. JFG is the guarantor of this work and, as such, had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

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Data availability statement Data are available upon reasonable request. All data relevant to the study are included in the article or uploaded as supplemental information. The THIN data set cannot be shared as this restriction was a condition of the ethics approval obtained from the Research Ethics Committee (Reference number 18THIN093). Questions concerning the data underlying the results can be sent to the corresponding author.

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Read code	Description
14F3.00	H/O: chronic skin ulcer
14F4.00	H/O: Admission in last year for diabetes foot problem
14F5.00	H/O: venous leg ulcer
14F6.00	H/O: foot ulcer
14F7.00	H/O: arterial lower limb ulcer
22L..00	O/E - wound healing
22L1.00	O/E - Wound healed
22L2.00	O/E - Wound healing well
22L3.00	O/E - Wound healing badly
22L3.11	O/E wound healing delayed
22L4.00	O/E - Wound infected
22L5.00	O/E - protruding suture
22L6.00	O/E - wound necrotic
22Q..00	Wound observation
22Q0.00	Length of wound
22Q1.00	Width of wound
22Q3.00	Wound dirty
22Q4.00	Depth of wound
22Q6.00	Wound discharge
22Q8.00	Critical colonisation of wound
22Q9.00	Traumatic wound
22QA.00	Surgical wound
22QB.00	Fungating wound
26B8.00	O/E - ulcerated breast lesion
26B8.11	O/E - ulcer on breast
2924.00	O/E - trophic skin ulceration
2Fb..00	Granulation of tissue
2FF..00	O/E - skin ulcer
2FF1.00	O/E - no skin ulcer
2FF2.00	O/E - skin ulcer present
2FF3.00	O/E - depth of ulcer
2FFZ.00	O/E - skin ulcer NOS
2FG7.00	O/E - healed burn scar
2FI..00	O/E - sinus in skin
2FI2.00	O/E -skin sinus-post operation
2FI3.00	O/E - skin sinus -after injury
2FI4.00	O/E - suppuration skin sinus
2FIZ.00	O/E - skin sinus NOS
2G48.00	O/E - ankle ulcer
2G4E.00	Healed leg ulcer
2G54.00	O/E - Right foot ulcer
2G55.00	O/E - Left foot ulcer
2G5H.00	O/E - Right diabetic foot - ulcerated
2G5L.00	O/E - Left diabetic foot - ulcerated
2G5Q.00	O/E - No left foot ulcer
2G5R.00	O/E - No right foot ulcer
2G5S.00	O/E - right healed foot ulcer
2G5T.00	O/E - left healed foot ulcer
2G5V.00	O/E - right chronic diabetic foot ulcer

2G5W.00	O/E - left chronic diabetic foot ulcer
2G63.00	Ischaemic toe
2G64.00	O/E - infected toe
2I16.00	O/E - gangrene
3511.00	Surgical biopsy taken
38C4.00	Leg ulcer assessment
38N..00	Wound assessment
38Qi.00	SINBAD (site,isch,neuro,bact inf,depth) wound classification
39C0.00	Pressure sore
39C1.00	Superficial pressure sore
39C2.00	Deep pressure sore
39C3.00	Pressure sore -deep + superfic
39C4.00	Waterlow pressure sore risk score
39C4200	Waterlow major surgery/trauma score
39C5.00	Medley pressure sore risk score
39C6.00	Maelor pressure ulcer risk assessment score
39C6.11	Maelor score
39C7.00	EPUAP (European pressure ulcer advisory panel) grade 1 ulcer
39C8.00	EPUAP (European pressure ulcer advisory panel) grade 2 ulcer
39C9.00	EPUAP (European pressure ulcer advisory panel) grade 3 ulcer
39CA.00	EPUAP (European pressure ulcer advisory panel) grade 4 ulcer
4I1F.00	Wound microscopy, culture and sensitivities
4I2D.00	Wound exudate sample
4I2D.11	Wound swab
4I2D000	Wound swab culture positive
4I2D100	Wound swab culture negative
4JG3.00	Skin ulcer swab taken
4JG4.00	Skin wound swab taken
58C4.00	Photography of wound
6AD1.00	Wound repair review
7G06.11	Curettage of lesion of skin or subcutaneous tissue
7G06.12	Curettage of lesion of skin including head and neck
7G06000	Curettage and cauterisation of lesion of skin head or neck
7G06100	Curettage and cauterisation of lesion of skin NEC
7G06111	Curettage and cauterisation of skin wart NEC
7G06200	Curettage of lesion of skin of head or neck NEC
7G06300	Curettage of sinus NEC
7G06400	Curettage of wound NEC
7G06y00	Other specified curettage of lesion of skin
7G06z00	Curettage of lesion of skin NOS
7G2C000	Toilet or clean burnt skin of head or neck
7G2C100	Toilet or clean burnt skin NEC
7G2C200	Debridement of burnt skin of head and neck
7G2C300	Debridement of burnt skin NEC
7G2C400	Toilet to burnt skin of head or neck NEC
7G2C500	Tangent excision of burnt skin of head or neck
7G2C600	Tangent excision of burnt skin NEC
7G2CE00	Removal of slough from burnt skin NEC
7G2CE11	Escharotomy of burnt skin NEC
7G2CF00	Cleansing and sterilisation of burnt skin of head or neck

7G2CG00	Dress burnt skin head or neck us vacuum assisted clos device
7G2CH00	Cleansing and sterilisation of burnt skin NEC
7G2CJ00	Dressing burnt skin using vacuum assisted closure device NEC
7G2Cy00	Other specified toilet to burnt skin
7G2Cz00	Toilet to burnt skin NOS
7G2D.00	Other skin toilet
7G2D000	Debridement of skin NEC
7G2D011	Debridement of wound of skin NEC
7G2D100	Debridement of skin of head or neck NEC
7G2D200	Removal of slough from skin NEC
7G2D300	Removal of slough from skin of head or neck NEC
7G2D400	Toilet to skin of head or neck NEC
7G2D500	Cleaning of skin wound NEC
7G2D600	Cleaning of skin wound of head or neck
7G2D700	Cleansing and sterilisation of skin of head or neck NEC
7G2D800	Cleansing and sterilisation of skin NEC
7G2D900	Dres skin head or neck us vacuum assisted closure device NEC
7G2DA00	Dressing of skin using vacuum assisted closure device NEC
7G2DB00	Removal of slough from skin using pressurised fluid jet
7G2Dy00	Other specified toilet to skin
7G2Dz00	Other toilet to skin NOS
7G2E.00	Dressing of skin or wound
7G2E.11	Dressing of skin
7G2E000	Dressing of burnt skin of head or neck
7G2E100	Dressing of burnt skin NEC
7G2E200	Dressing of skin of head or neck NEC
7G2E300	Dressing of skin NEC
7G2E400	Dressing of skin of head or neck NEC
7G2E500	Dressing of skin ulcer NEC
7G2E600	Attention to dressing of burn of head or neck
7G2E700	Attention to dressing of burnt skin NEC
7G2E800	Attention to dressing of skin of head or neck NEC
7G2E900	Attention to dressing of skin NEC
7G2EA00	Two layer compression bandage for skin ulcer
7G2EB00	Four layer compression bandaging for skin ulcer
7G2EC00	Three layer compression bandage for skin ulcer
7G2Ey00	Other specified dressing of skin
7G2Ez00	Dressing of skin NOS
7G2G000	Dermabrasion of skin of head or neck
7G2G100	Dermabrasion of skin NEC
7G2G400	Refashioning of scar
7P23200	Delivery of rehabilitation for burns
81H..00	Dressing of wound
81H1.00	Dressing of ulcer
81H2.00	Dressing of burn
81H3.00	Attention to dressing of skin
81H4.00	Checking dressing of skin
81H5.00	Change of dressing
81Hy.00	Other wound dressing
81HZ.00	Wound dressing NOS

8343.00	Immobilisation of wound
8BC7.00	Glueing of wound
8BN..00	Treatment of wound with maggots
8C1L.00	Wound care
8C1M.00	Post-operative wound care
8C1M.11	Post-surgical wound care
8C1Q.00	Compression hosiery procedure
8C22.00	Oxygenation of slough
8C6..00	Wound dressing requested by accident and emergency service
8C7..00	Suture removal requested by accident and emergency service
8CA4T00	Dietary education for wound healing
8CA4T11	Dietary advice for wound healing
8Cd9.00	Advice given about wound care
8CK..00	Skin care
8CMT.00	Leg ulcer care pathway
8CS3.00	Agreeing on leg ulcer treatment plan
8CT1.00	Leg ulcer compression therapy finished
8CV2.00	Leg ulcer compression therapy started
8H15.00	Admit to burns unit
8H5E.00	Burns referral
8HlV.00	Referral for complex wound care
8HTh.00	Referral to leg ulcer clinic
9kd..00	Complex wound care - enhanced services administration
9ks..00	Complex skin ulcer care enhanced services administration
9kY..00	Review of wound repair - enhanced services administration
9kY..11	Review of wound repair
9N0t.00	Seen in primary care leg ulcer clinic
9N0z.00	Seen in burns clinic
9N2m.00	Seen by tissue viability nurse specialist
9N7L.00	Postop wound management gen secondary care done by practice
9NM5.00	Attending leg ulcer clinic
A056.00	Amoebic skin ulceration
A170.00	Tuberculosis of skin and subcutaneous tissue
A170z00	Tuberculosis of skin and subcutaneous tissue NOS
A3A0500	Gas gangrene
A3A0600	Gas gangrene-neck
A3A0700	Gas gangrene-back
A3A0800	Gas gangrene-shoulder
A3A0900	Gas gangrene-arm
A3A0A00	Gas gangrene-forearm
A3A0B00	Gas gangrene-hand
A3A0C00	Gas gangrene-pelvis
A3A0D00	Gas gangrene-thigh
A3A0E00	Gas gangrene-leg
A3A0F00	Gas gangrene-foot
A3A0z00	Gas gangrene caused by organism NOS
A851000	Aleppo boil
A851100	Baghdad boil
A851200	Delhi boil
A851z00	Urban cutaneous leishmaniasis NOS

A852.00	Asian desert cutaneous leishmaniasis
A853.00	Ethiopian cutaneous leishmaniasis
A854.00	American cutaneous leishmaniasis
A854.11	Chiclero ulcer
A855.00	American mucocutaneous leishmaniasis
A85z.00	Leishmaniasis NOS
A86..00	Trypanosomiasis
AD40000	Cutaneous myiasis
AD40100	Wound myiasis
C107.11	Diabetes mellitus with gangrene
C107.12	Diabetes with gangrene
C107200	Diabetes mellitus, adult with gangrene
C108500	Insulin dependent diabetes mellitus with ulcer
C108511	Type I diabetes mellitus with ulcer
C108512	Type 1 diabetes mellitus with ulcer
C108600	Insulin dependent diabetes mellitus with gangrene
C108611	Type I diabetes mellitus with gangrene
C108612	Type 1 diabetes mellitus with gangrene
C109400	Non-insulin dependent diabetes mellitus with ulcer
C109411	Type II diabetes mellitus with ulcer
C109412	Type 2 diabetes mellitus with ulcer
C109500	Non-insulin dependent diabetes mellitus with gangrene
C109511	Type II diabetes mellitus with gangrene
C109512	Type 2 diabetes mellitus with gangrene
C10E500	Type 1 diabetes mellitus with ulcer
C10E511	Type I diabetes mellitus with ulcer
C10E512	Insulin dependent diabetes mellitus with ulcer
C10E600	Type 1 diabetes mellitus with gangrene
C10E611	Type I diabetes mellitus with gangrene
C10E612	Insulin dependent diabetes mellitus with gangrene
C10F400	Type 2 diabetes mellitus with ulcer
C10F411	Type II diabetes mellitus with ulcer
C10F500	Type 2 diabetes mellitus with gangrene
C10F511	Type II diabetes mellitus with gangrene
F506.00	Abscess of external ear
G732.00	Peripheral gangrene
G732000	Gangrene of toe
G732100	Gangrene of foot
G732200	Gangrene of finger
G732300	Gangrene of thumb
G732400	Gangrene of hand
G830.00	Varicose veins of the leg with ulcer
G832.00	Varicose veins of the leg with ulcer and eczema
G835.00	Infected varicose ulcer
G837.00	Venous ulcer of leg
J085000	Abscess of lip
J085800	Lip ulcer
J54..00	Abscess of anal and rectal regions
J54..12	Rectal abscess
J540.00	Perianal abscess

J540.11	Perianal cellulitis
J541.00	Ischiorectal abscess
J542.00	Submucous ano-rectal abscess
J543.00	Pelvi-rectal abscess
J544.00	Ano-rectal fissure abscess
J545.00	Intrasphincteric abscess
J546.00	Rectal abscess
J54z.00	Ano-rectal abscess NOS
K272000	Penile abscess
K272100	Penile boil
K272200	Penile carbuncle
K272300	Cellulitis of penis
K27y500	Chronic ulcer of penis
K284600	Fournier's gangrene of scrotum
K424000	Abscess of vulva
K424011	Abscess of labia
K424100	Carbuncle of vulva
K424111	Boil of vulva
K424200	Furuncle of vulva
K424z00	Other abscess of vulva NOS
K425.00	Ulceration of vulva
K425000	Ulceration of vulva unspecified
K425100	Ulceration of vulva in diseases EC
K425200	Ulceration of vulva in Behcet's disease
K425z00	Ulceration of vulva NOS
L394500	Infection of obstetric surgical wound
L441.00	Caesarean wound disruption
L441000	Caesarean wound disruption unspecified
L441100	Caesarean wound disruption - delivered with p/n complication
L441200	Caesarean wound disruption with postnatal complication
L441z00	Caesarean wound disruption NOS
L442.00	Obstetric perineal wound disruption
L442.11	Breakdown of perineum
L442.12	Episiotomy breakdown
L442000	Obstetric perineal wound disruption unspecified
L442100	Obstetric perineal wound disruption - deliv + p/n comp
L442200	Obstetric perineal wound disruption with p/n complication
L442z00	Obstetric perineal wound disruption NOS
L443.00	Other complication of obstetric surgical wound
L443.11	Haematoma - perineal wound
L443.12	Infection - perineal wound
L443000	Other complication of obstetric surgical wound unspecified
L443100	Other complication obstetric surg wound -delivered +p/n comp
L443200	Other complication obstetric surgical wound with p/n comp
L443z00	Other complication of obstetric surgical wound NOS
L45..00	Obstetric breast infections
L450.00	Obstetric nipple infection
L450.11	Abscess of nipple - obstetric
L450.12	Nipple infection - obstetric
L450000	Obstetric nipple infection unspecified

L450100	Obstetric nipple infection - delivered
L450200	Obstetric nipple infection - delivered with p/n complication
L450300	Obstetric nipple infection with antenatal complication
L450400	Obstetric nipple infection with postnatal complication
L450z00	Obstetric nipple infection NOS
L451.00	Obstetric breast abscess
L451.11	Purulent mastitis - obstetric
L451000	Obstetric breast abscess unspecified
L451100	Obstetric breast abscess - delivered
L451200	Obstetric breast abscess - deliv with postnatal complication
L451300	Obstetric breast abscess with antenatal complication
L451400	Obstetric breast abscess with postnatal complication
L451z00	Obstetric breast abscess NOS
Lyu6A00	[X]Infection of caesarean section wound following delivery
M....00	Skin and subcutaneous tissue diseases
M0...00	Skin and subcutaneous tissue infections
M00..00	Carbuncle
M000.00	Carbuncle of face
M000000	Carbuncle of ear
M000100	Carbuncle of face (excluding eye)
M000200	Carbuncle of nasal septum
M000300	Carbuncle of temple region
M000z00	Carbuncle of face NOS
M001.00	Carbuncle of neck
M002.00	Carbuncle of trunk
M002000	Carbuncle of chest wall
M002100	Carbuncle of breast
M002200	Carbuncle of back
M002300	Carbuncle of abdominal wall
M002400	Carbuncle of umbilicus
M002500	Carbuncle of flank
M002600	Carbuncle of groin
M002700	Carbuncle of perineum
M002z00	Carbuncle of trunk NOS
M003.00	Carbuncle of upper arm and forearm
M003000	Carbuncle of shoulder
M003100	Carbuncle of axilla
M003200	Carbuncle of upper arm
M003300	Carbuncle of elbow
M003400	Carbuncle of forearm
M003z00	Carbuncle of upper arm and forearm NOS
M004.00	Carbuncle of hand
M004000	Carbuncle of wrist
M004100	Carbuncle of thumb
M004200	Carbuncle of finger
M004z00	Carbuncle of hand NOS
M005.00	Carbuncle of buttock
M005000	Carbuncle of anus
M005100	Carbuncle of gluteal region
M005z00	Carbuncle of buttock NOS

M006.00	Carbuncle of leg (excluding foot)
M006000	Carbuncle of hip
M006100	Carbuncle of thigh
M006200	Carbuncle of knee
M006300	Carbuncle of lower leg
M006400	Carbuncle of ankle
M006z00	Carbuncle of leg (excluding foot) NOS
M007.00	Carbuncle of foot
M007000	Carbuncle of foot unspecified
M007100	Carbuncle of heel
M007200	Carbuncle of toe
M007z00	Carbuncle of foot NOS
M00y.00	Carbuncle of other specified site
M00y000	Carbuncle of head (excluding face)
M00yz00	Carbuncle of other specified site NOS
M00z.00	Carbuncle NOS
M01..00	Furuncle - boil
M010.00	Boil of face
M010000	Boil of ear
M010100	Boil of face (excluding eye)
M010200	Boil of nasal septum
M010300	Boil of temple region
M010400	Boil of external nose
M010z00	Boil of face NOS
M011.00	Boil of neck
M012.00	Boil of trunk
M012000	Boil of chest wall
M012100	Boil of breast
M012200	Boil of back
M012300	Boil of abdominal wall
M012400	Boil of umbilicus
M012500	Boil of flank
M012600	Boil of groin
M012700	Boil of perineum
M012z00	Boil of trunk NOS
M013.00	Boil of upper arm and forearm
M013000	Boil of shoulder
M013100	Boil of axilla
M013200	Boil of upper arm
M013300	Boil of elbow
M013400	Boil of forearm
M013z00	Boil of upper arm and forearm NOS
M014.00	Boil of hand
M014000	Boil of wrist
M014100	Boil of thumb
M014200	Boil of finger
M014z00	Boil of hand NOS
M015.00	Boil of buttock
M015000	Boil of anus
M015100	Boil of gluteal region

M015z00	Boil of buttock NOS
M016.00	Boil of leg (excluding foot)
M016000	Boil of hip
M016100	Boil of thigh
M016200	Boil of knee
M016300	Boil of lower leg
M016400	Boil of ankle
M016z00	Boil of leg (excluding foot) NOS
M017.00	Boil of foot
M017000	Boil of foot unspecified
M017100	Boil of heel
M017200	Boil of toe
M017z00	Boil of foot NOS
M01y.00	Boil of other specified site
M01y000	Boil of head (excluding face)
M01yz00	Boil of other specified site NOS
M01z.00	Boil NOS
M01z.11	Recurrent boils
M01z.12	Boils of multiple sites
M01z000	Multiple boils
M02..00	Cellulitis and abscess of finger and toe
M020.00	Cellulitis and abscess of finger
M020000	Cellulitis and abscess of finger unspecified
M020100	Finger pulp abscess
M020111	Felon
M020112	Whitlow
M020200	Onychia of finger
M020300	Paronychia of finger
M020311	Perionychia of finger
M020400	Finger web space infection
M020500	Pulp space infection of finger/thumb
M020z00	Cellulitis and abscess of finger NOS
M021.00	Cellulitis and abscess of toe
M021000	Cellulitis and abscess of toe unspecified
M021100	Onychia of toe
M021200	Paronychia of toe
M021300	Pulp space infection of toe
M021z00	Cellulitis and abscess of toe NOS
M021z11	Perionychia of toe
M02z.00	Cellulitis and abscess of digit NOS
M02z.11	Nail infection NOS
M02z.12	Paronychia
M02z.13	Infected nailfold
M02z.14	Nailfold infected
M03..00	Other cellulitis and abscess
M03..11	Abscess of skin area excluding digits of hand or foot
M03..12	Acute lymphangitis of skin excluding digits of hand or foot
M03..13	Cellulitis of skin area excluding digits of hand or foot
M030.00	Cellulitis and abscess of face
M030000	Cellulitis and abscess of cheek (external)

M030011	Cellulitis and abscess of cheek
M030100	Cellulitis and abscess of nose (external)
M030111	Cellulitis and abscess of nose
M030200	Cellulitis and abscess of chin
M030300	Cellulitis and abscess of submandibular region
M030400	Cellulitis and abscess of forehead
M030500	Cellulitis and abscess of temple region
M030600	Cellulitis of face
M030z00	Cellulitis and abscess of face NOS
M031.00	Cellulitis and abscess of neck
M031.11	Cervical abscess
M032.00	Cellulitis and abscess of trunk
M032000	Cellulitis and abscess of chest wall
M032100	Cellulitis and abscess of breast
M032200	Cellulitis and abscess of back
M032300	Cellulitis and abscess of abdominal wall
M032400	Cellulitis and abscess of umbilicus
M032500	Cellulitis and abscess of flank
M032600	Cellulitis and abscess of groin
M032700	Cellulitis and abscess of perineum
M032800	Cellulitis of trunk
M032z00	Cellulitis and abscess of trunk NOS
M033.00	Cellulitis and abscess of arm
M033000	Cellulitis and abscess of shoulder
M033100	Cellulitis and abscess of axilla
M033200	Cellulitis and abscess of upper arm
M033300	Cellulitis and abscess of elbow
M033400	Cellulitis and abscess of forearm
M033z00	Cellulitis and abscess of arm NOS
M034.00	Cellulitis and abscess of hand excluding digits
M034.11	Cellulitis and abscess of hand
M034000	Cellulitis and abscess of hand unspecified
M034011	Abscess of dorsum of hand
M034012	Abscess of palm of hand
M034013	Cellulitis of dorsum of hand
M034014	Cellulitis of palm of hand
M034100	Cellulitis and abscess of wrist
M034z00	Cellulitis and abscess of hand NOS
M035.00	Cellulitis and abscess of buttock
M036.00	Cellulitis and abscess of leg excluding foot
M036.11	Cellulitis and abscess of leg
M036000	Cellulitis and abscess of hip
M036100	Cellulitis and abscess of thigh
M036200	Cellulitis and abscess of knee
M036300	Cellulitis and abscess of lower leg
M036400	Cellulitis and abscess of ankle
M036z00	Cellulitis and abscess of leg NOS
M037.00	Cellulitis and abscess of foot excluding toe
M037.11	Cellulitis and abscess of foot
M037000	Cellulitis and abscess of foot unspecified

M037100	Cellulitis and abscess of heel
M037200	Cellulitis in diabetic foot
M037z00	Cellulitis and abscess of foot NOS
M038.00	Cellulitis of external ear
M03y.00	Other specified cellulitis and abscess
M03y000	Cellulitis and abscess of head unspecified
M03y011	Abscess of scalp
M03z.00	Cellulitis and abscess NOS
M03z000	Cellulitis NOS
M03z100	Abscess NOS
M03zz00	Cellulitis and abscess NOS
M060.00	Pilonidal cyst with abscess
M061.00	Pilonidal cyst with no abscess
M061.11	Dermal sinus
M062.00	Pilonidal sinus with abscess
M063.00	Pilonidal sinus without abscess
M06z.00	Pilonidal sinus/cyst NOS
M07..00	Other local infections of skin and subcutaneous tissue
M070200	Pyoderma gangrenosum
M070300	Pyoderma ulcerosum tropicalum
M07y.00	Local infection of skin or subcutaneous tissue OS
M07yz00	Other spec local skin/subc infection NOS
M07yz11	Infection toe
M07yz12	Infection foot
M07yz13	Infection finger
M07z.00	Local infection skin/subcut tissue NOS
M07z.12	Infected skin ulcer
M07z.13	Septic spots
M07z.14	Infected dermatitis
M07z000	Infection foot
M07z100	Infection toe
M07z200	Infection finger
M09..00	Cutaneous abscess
M090.00	[X]Abscess of face
M091.00	[X]Abscess of neck
M092.00	[X]Abscess of trunk
M092000	[X]Abscess of buttock
M092100	[X]Abdominal wall abscess
M092200	[X]Perineal abscess
M093.00	[X]Abscess of buttock
M094.00	[X]Abscess of limb
M094000	[X]Abscess of axilla
M095.00	Skin abscess
M09y.00	[X]Abscess of other site
M0y..00	Other specified infections of skin or subcutaneous tissue
M0z..00	Skin and subcut tissue infection NOS
M0z..11	Infected sebaceous cyst
M1...00	Other skin and subcutaneous tissue inflammatory conditions
M2...00	Other skin and subcutaneous tissue disorders
M27..00	Chronic skin ulcer

M270.00	Decubitus (pressure) ulcer
M270.11	Bed sore
M270.12	Plaster ulcer
M270.13	Pressure sore
M270.14	Decubitus ulcer and pressure area
M270000	Hospital acquired pressure ulcer
M270100	Nursing home acquired pressure ulcer
M270200	Community hospital acquired pressure ulcer
M270300	Hospice acquired pressure ulcer
M270400	Stage I decubitus ulcer and pressure area
M270500	Stage II decubitus ulcer
M270600	Stage III decubitus ulcer
M270700	Stage IV decubitus ulcer
M270z00	Decubitus ulcer and pressure area NOS
M271.00	Non-pressure ulcer lower limb
M271.11	Foot ulcer
M271.12	Ischaemic leg ulcer
M271.13	Leg ulcer NOS
M271.14	Neurogenic leg ulcer
M271.15	Trophic leg ulcer
M271000	Ischaemic ulcer diabetic foot
M271100	Neuropathic diabetic ulcer - foot
M271200	Mixed diabetic ulcer - foot
M271300	Arterial leg ulcer
M271400	Mixed venous and arterial leg ulcer
M271500	Venous ulcer of leg
M271600	Traumatic leg ulcer
M271700	Neuropathic foot ulcer
M272.00	Ulcer of skin
M273.00	Non-healing leg ulcer
M274.00	Recurrent leg ulcer
M27y.00	Chronic ulcer of skin, other specified sites
M27z.00	Chronic skin ulcer NOS
M2y4D00	Macerated perianal skin
M2yA.00	Skin sinus
M2yB.00	Fistula of skin
M2yz.11	Skin lesion
M2z0.00	Skin lesion
Myu0.00	[X]Infections of the skin and subcutaneous tissue
Myu0100	[X]Other specified local infections/skin+subcutaneous tissue
R153300	[D]Positive culture findings in wound
S002.00	Open fracture vault of skull without intracranial injury
S002000	Open #skull vlt no intracranial injury, unspec state consc
S002100	Open #skull vlt no intracranial injury, no loss of consc
S002200	Open #skull vlt no intracranial injury, <1hr loss of consc
S002300	Open #skull vlt no intracranial injury, 1-24hr loss of consc
S002400	Open #skull vlt no intracranial injury, >24hr LOC+recovery
S002500	Open #skull vlt no intracranial inj, >24hr LOC not restored
S002600	Open #skull vlt no intracranial injury, LOC unspec duration
S002z00	Open #skull vlt no intracranial injury + concussion unspec

S003.00	Open fracture vault of skull with intracranial injury
S003000	Open #skull vlt + intracranial injury, unspec state of consc
S003100	Open #skull vlt + intracranial injury, no loss of consc
S003200	Open #skull vlt + intracranial injury, <1hr loss of consc
S003300	Open #skull vlt + intracranial injury, 1-24hr loss of consc
S003400	Open #skull vlt + intracranial injury, >24hr LOC + recovery
S003500	Open #skull vlt + intracranial inj, >24hr LOC not restored
S003600	Open #skull vlt + intracranial injury, LOC unspec duration
S003z00	Open #skull vlt with intracranial injury + concussion unspec
S012.00	Open fracture base skull without mention intracranial injury
S012000	Open #skull bse no intracranial inj, unspec state of consc
S012100	Open #skull bse no intracranial injury, no loss of consc
S012200	Open #skull bse no intracranial injury, <1hr loss of consc
S012300	Open #skull bse no intracranial injury, 1-24hr loss of consc
S012400	Open #skull bse no intracranial injury, >24hr LOC+recovery
S012500	Open #skull bse no intracranial inj, >24hr LOC not restored
S012600	Open #skull bse no intracranial injury, LOC unspec duration
S012z00	Open #skull bse no intracranial injury + concussion unspec
S013.00	Open fracture base of skull with intracranial injury
S013000	Open #skull bse + intracranial injury, unspec state of consc
S013100	Open #skull bse + intracranial injury, no loss of consc
S013200	Open #skull bse + intracranial injury, <1hr loss of consc
S013300	Open #skull bse + intracranial injury, 1-24hr loss of consc
S013400	Open #skull bse + intracranial injury, >24hr LOC + recovery
S013500	Open #skull bse + intracranial inj, >24hr LOC not restored
S013600	Open #skull bse + intracranial injury, LOC unspec duration
S013z00	Open #skull bse + intracranial injury + concussion unspec
S032.00	Open #skull NOS without mention of intracranial injury
S032000	Open #skull NOS no intracranial inj, unspec state of consc
S032100	Open #skull NOS no intracranial inj, no loss of consc
S032200	Open #skull NOS no intracranial inj, <1hr loss of consc
S032300	Open #skull NOS no intracranial inj, 1-24hrs loss of consc
S032400	Open #skull NOS no intracranial inj, >24hrs LOC + recovery
S032500	Open #skull NOS no intracranial inj, >24hrs LOC not restored
S032600	Open #skull NOS no intracranial inj, LOC unspec duration
S032z00	Open #skull NOS no intracranial inj + concussion unspec
S033.00	Open fracture of skull NOS with intracranial injury
S033000	Open #skull NOS + intracranial inj, unspec state of consc
S033100	Open #skull NOS + intracranial inj, no loss of consc
S033200	Open #skull NOS + intracranial inj, <1hr loss of consc
S033300	Open #skull NOS + intracranial inj, 1-24hrs loss of consc
S033400	Open #skull NOS + intracranial inj, >24hrs LOC + recovery
S033500	Open #skull NOS + intracranial inj, >24hrs LOC not restored
S033600	Open #skull NOS + intracranial inj, LOC unspec duration
S033z00	Open #skull NOS + intracranial inj + concussion unspec
S042000	Open #skull/face, mult, no intracranial inj, unspec consc
S042100	Open #skull/face, mult, no intracranial inj, no loss consc
S042200	Open #skull/face, mult, no intracranial inj, <1hr LOC
S042300	Open #skull/face, mult, no intracranial inj, 1-24hrs LOC
S042400	Open #skull/face, mult, no intracran inj, >24hr LOC+recovery

S042500	Open #skull/face,mult,no intracran inj,>24hr LOC no restored
S042600	Open #skull/face,mult,no intracran inj, LOC unspec duration
S042z00	Open #skull/face,mult,no intracran inj, concussion unspec
S043.00	Mult #skull/face + other bones, open + intracranial injury
S043000	Open #skull/face, mult + intracranial inj, unspec consc
S043100	Open #skull/face, mult + intracranial inj, no loss consc
S043200	Open #skull/face, mult + intracranial inj, <1hr LOC
S043300	Open #skull/face, mult + intracranial inj, 1-24hrs LOC
S043400	Open #skull/face, mult + intracran inj, >24hr LOC + recovery
S043500	Open #skull/face,mult + intracran inj, >24hr LOC no restored
S043600	Open #skull/face, mult + intracran inj, LOC unspec duration
S043z00	Open #skull/face, mult + intracran inj + concussion, unspec
S611000	Cortex cont + open intracranial wound + unspec state consc
S611100	Cortex cont + open intracranial wound + no loss of consc
S611200	Cortex cont + open intracranial wound + <1hr loss of consc
S611300	Cortex cont + open intracranial wound + 1-24hr loss of consc
S611400	Cortex cont + open intracranial wnd + >24hr LOC + recovery
S611500	Cortex cont + open intracranial wnd + >24hr LOC not restored
S611600	Cortex cont + open intracranial wnd + LOC unspec duration
S611z00	Cortex cont + open intracranial wound + concussion unspec
S613.00	Cortex laceration with open intracranial wound
S613000	Cortex lacn + open intracranial wound + unspec state consc
S613100	Cortex lacn + open intracranial wound + no loss of consc
S613200	Cortex lacn + open intracranial wound + <1hr loss of consc
S613300	Cortex lacn + open intracranial wound + 1-24hr loss of consc
S613400	Cortex lacn + open intracranial wound + >24hr LOC + recovery
S613500	Cortex lacn + open intracranial wnd + >24hr LOC not restored
S613600	Cortex lacn + open intracranial wnd + LOC unspec duration
S613z00	Cortex lacn + open intracranial wound + concussion unspec
S615000	Hind brain cont + open intracranial wnd + unspec state consc
S615100	Hind brain cont + open intracranial wound + no loss consc
S615200	Hind brain cont + open intracranial wound + <1hr loss consc
S615300	Hind brain cont + open intracranial wnd + 1-24hr loss consc
S615400	Hind brain cont + open intracranial wnd +>24hr LOC +recovery
S615500	Hind brain cont + open intracran wnd +>24hr LOC not restored
S615600	Hind brain cont + open intracranial wnd +LOC unspec duration
S615z00	Hind brain cont + open intracranial wnd + concussion unspec
S617.00	Hind brain laceration with open intracranial wound
S617000	Hind brain lacn + open intracranial wnd + unspec state consc
S617100	Hind brain lacn + open intracranial wnd + no loss consc
S617200	Hind brain lacn + open intracranial wnd + <1hr loss consc
S617300	Hind brain lacn + open intracranial wnd + 1-24hr loss consc
S617400	Hind brain lacn + open intracranial wnd+>24hr LOC + recovery
S617500	Hind brain lacn open intracranial wnd+>24hr LOC not restored
S617600	Hind brain lacn + open intracran wnd + LOC unspec duration
S617z00	Hind brain lacn + open intracranial wnd + concussion unspec
S61y000	Brain cont + open intracranial wound + unspec state consc
S61y100	Brain cont + open intracranial wound + no loss of consc
S61y200	Brain cont + open intracranial wound + <1hr loss of consc
S61y300	Brain cont + open intracranial wound + 1-24hr loss of consc

S61y400	Brain cont + open intracranial wound + >24hr LOC + recovery
S61y500	Brain contusion + open intracr wound+>24hr LOC not ful reco
S61y600	Brain cont + open intracranial wound + LOC unspec duration
S61yz00	Brain cont + open intracranial wound + concussion unspec
S621000	Subarachnoid h'ge inj + open intracran wound + unspec consc
S621100	Subarachnoid h'ge inj + open intracranial wound + no LOC
S621200	Subarachnoid h'ge inj + open intracran wound+<1hr loss consc
S621300	Subarachnoid h'ge inj + open intracran wnd+1-24hr loss consc
S621400	Subarach h'ge inj + open intracran wnd +>24hr LOC + recovery
S621500	Subarach h'ge inj + open intracran wnd+>24hr LOC -restored
S621600	Subarach h'ge inj + open intracran wnd+LOC unspec duration
S621z00	Subarachnoid h'ge inj + open intracran wnd+concussion unspec
S623000	Subdural h'ge inj + open intracranial wound + unspec consc
S623100	Subdural h'ge inj + open intracranial wound+no loss consc
S623200	Subdural h'ge inj + open intracranial wound+<1hr loss consc
S623300	Subdural h'ge inj + open intracranial wnd+1-24hr loss consc
S623400	Subdural h'ge inj + open intracran wound+>24hr LOC +recovery
S623500	Subdural h'ge inj + open intracran wnd+>24hr LOC -restored
S623600	Subdural h'ge inj + open intracran wnd+LOC unspec duration
S623z00	Subdural h'ge inj + open intracranial wnd+concussion unspec
S625000	Extradural h'ge inj + open intracranial wnd + unspec consc
S625100	Extradural h'ge inj + open intracranial wound+no loss consc
S625200	Extradural h'ge inj + open intracranial wnd+<1hr loss consc
S625300	Extradural h'ge inj + open intracran wnd+1-24hr loss consc
S625400	Extradural h'ge inj + open intracran wnd+>24hr LOC+recovery
S625500	Extradural h'ge inj + open intracran wnd+>24hr LOC -restored
S625600	Extradural h'ge inj + open intracran wnd+LOC unspec duration
S625z00	Extradural h'ge inj + open intracran wnd+concussion unspec
S62A100	Traumatic extradural haematoma with open intracranial wound
S631.00	Other cerebral h'ge after injury + open intracranial wound
S631000	Oth cerebral h'ge inj + open intracran wnd + unspec consc
S631100	Oth cerebral h'ge inj + open intracranial wnd+no loss consc
S631200	Oth cerebral h'ge inj + open intracran wnd+<1hr loss consc
S631300	Oth cerebral h'ge inj + open intracran wnd+1-24hr loss consc
S631400	Oth cereb h'ge inj + open intracran wnd+>24hr LOC + recovery
S631500	Oth cereb h'ge inj + open intracran wnd+>24hr LOC -restored
S631600	Oth cereb h'ge inj + open intracran wnd+LOC unspec duration
S631z00	Oth cereb h'ge inj + open intracran wnd+concussion unspec
S641.00	Intracranial injury NOS + open intracranial wound
S641000	Intracranial inj NOS + open intracranial wnd + unspec consc
S641100	Intracranial inj NOS + open intracranial wound+no loss consc
S641200	Intracranial inj NOS + open intracranial wnd+<1hr loss consc
S641300	Intracranial inj NOS + open intracranial wnd + 1-24hr LOC
S641400	Intracranial inj NOS + open intracran wnd+>24hr LOC+recovery
S641500	Intracran inj NOS + open intracran wnd+>24hr LOC -restored
S641600	Intracran inj NOS + open intracran wnd+LOC unspec duration
S641z00	Intracranial inj NOS + open intracran wnd+concussion unspec
S642100	Traumatic cerebral oedema with open intracranial wound
S645100	Intracranial injury with prolonged coma with open wound
S701.00	Open traumatic pneumothorax

S703.00	Open traumatic haemothorax
S705.00	Open traumatic haemopneumothorax
S711.00	Heart injury, open
S711000	Heart injury with open wound into thorax, unspecified
S711100	Heart contusion, with open wound into thorax
S711200	Heart laceration open, without penetration of heart chambers
S711300	Heart laceration open, with penetration of heart chambers
S711z00	Heart injury with open wound into thorax NOS
S713000	Lung injury with open wound into thorax, unspecified
S713100	Lung contusion with open wound into thorax
S713200	Lung laceration with open wound into thorax
S713z00	Lung injury with open wound into thorax, NOS
S73yz00	Gastrointestinal tract injury with open wound to cavity NOS
S8...00	Open wound of head, neck and trunk
S8...12	Open wound of head
S8...13	Open wound of trunk
S80..00	Open wound of ocular adnexa
S80..11	Open wound of eyelid
S80..12	Periocular open wound
S800.00	Eyelid skin and periocular area laceration
S803.00	Penetrating wound of orbit without mention of foreign body
S804.00	Penetrating wound of orbit with foreign body
S80y.00	Other open ocular adnexa wound
S80z.00	Open wound of ocular adnexa NOS
S81..00	Open wound of eyeball
S81..12	Open wound of eye
S810.00	Ocular laceration without intraocular prolapse
S81z.00	Open wound of eyeball NOS
S82..00	Open wound of ear
S820.00	Open wound of external ear
S820000	Open wound of external ear, unspecified
S820100	Open wound of ear auricle
S820w00	Other open wound of external ear
S820z00	Open wound of external ear not otherwise specified
S821.00	Open wound of external ear with complication
S821000	Open wound of external ear with complication, unspecified
S821100	Open wound of ear auricle with complication
S821z00	Open wound of external ear with complication, NOS
S82v.00	Other open wound of ear
S82v011	Open wound of drumhead without complication
S82v012	Open wound of tympanic membrane without complication
S82v100	Open wound of ear ossicle
S82v300	Open wound of cochlea
S82vz00	Other open wound of ear NOS
S82w.00	Other open wound of ear with complication
S82w000	Open wound of ear drum with complication
S82w100	Open wound of ear ossicle with complication
S82w300	Open wound of cochlea with complication
S82wz00	Other open wound of ear with complication NOS
S82x.00	Open wound of ear, uncomplicated not otherwise specified

S82y.00	Open wound of ear with complication, NOS
S82z.00	Open wound of ear NOS
S83..00	Other open wound of head
S830.00	Open wound of scalp
S830100	Avulsion of scalp
S831.00	Open wound of scalp with complication
S832.00	Open wound of nose
S832000	Open wound of nose, unspecified
S832100	Open wound of nasal septum
S832200	Open wound of nasal cavity
S832300	Open wound of nasal sinus
S832x00	Multiple wounds of nose
S832z00	Open wound of nose NOS
S833.00	Open wound of nose with complication
S833000	Open wound of nose with complication, unspecified
S833100	Open wound of nasal septum with complication
S833200	Open wound of nasal cavity with complication
S833300	Open wound of nasal sinus with complication
S833x00	Multiple open wounds of nose with complication
S833z00	Open wound of nose with complication, NOS
S834.00	Open wound of face
S834000	Open wound of face, unspecified
S834100	Open wound of cheek
S834200	Open wound of forehead
S834300	Open wound of eyebrow
S834400	Open wound of lip
S834500	Open wound of jaw
S834600	Open wound of chin
S834x00	Multiple open wounds of face
S834z00	Open wound of face, NOS
S835.00	Open wound of face with complication
S835000	Open wound of face with complication, unspecified
S835100	Open wound of cheek with complication
S835200	Open wound of forehead with complication
S835300	Open wound of eyebrow with complication
S835400	Open wound of lip with complication
S835500	Open wound of jaw with complication
S835x00	Multiple open wounds of face with complication
S835z00	Open wound of face with complication, NOS
S836.00	Open wound in mouth
S836000	Open wound in mouth, unspecified
S836100	Open wound of buccal mucosa
S836200	Open wound of gum
S836400	Open wound of tongue
S836500	Open wound of mouth floor
S836600	Open wound of palate
S837100	Open wound of buccal mucosa with complication
S837200	Open wound of gum with complication
S837400	Open wound of tongue with complication
S837500	Open wound of mouth floor with complication

S837600	Open wound of palate with complication
S83x.00	Other open wound of head
S83y.00	Other open wound of head with complication
S83z.00	Open wound of head NOS
S84..00	Open wound of neck
S840.00	Open wound of larynx and trachea
S840.11	Open wound of larynx without complication
S840.12	Open wound of trachea without complication
S840000	Open wound of larynx and trachea, unspecified
S840100	Open wound of larynx
S840200	Open wound of trachea
S840z00	Open wound of larynx and trachea not otherwise specified
S841.00	Open wound of larynx and trachea with complication
S841.11	Open wound of larynx with complication
S841.12	Open wound of trachea with complication
S841000	Open wound of larynx and trachea with complication, unspec
S841100	Open wound of larynx with complication
S841200	Open wound of trachea with complication
S841z00	Open wound of larynx and trachea with complication, NOS
S842.00	Open wound of thyroid
S843.00	Open wound of thyroid with complication
S844.00	Open wound of pharynx
S845.00	Open wound of pharynx with complication
S84x.00	Other open wound of neck
S84x000	Open wound of neck nape
S84x100	Open wound of supraclavicular region
S84xz00	Open wound of neck, NOS
S84xz11	Open wound of throat NOS
S84y.00	Other open wound of neck with complication
S84y000	Open wound of neck nape with complication
S84y100	Open wound of supraclavicular region with complication
S84yz00	Open wound of neck with complication, NOS
S84z.00	Open wound of neck NOS
S85..00	Open wound of chest wall
S850.00	Open wound of chest wall, uncomplicated
S850000	Degloving injury chest wall
S851.00	Open wound of chest wall with complication
S852.00	Open wound of front wall of thorax
S853.00	Multiple open wounds of thoracic wall
S855.00	Open wound of back wall of thorax
S85X.00	Open wound of thorax, part unspecified
S85z.00	Open wound of chest wall NOS
S86..00	Open wound of back
S86..11	Open wound of loin
S86..12	Open wound of lumbar region
S860.00	Open wound of back, uncomplicated
S860000	Degloving injury back
S861.00	Open wound of back with complication
S86z.00	Open wound of back NOS
S87..00	Open wound of buttock

S87..11	Open wound of sacroiliac region
S870.00	Open wound of buttock, uncomplicated
S870000	Degloving injury buttock
S871.00	Open wound of buttock with complication
S87z.00	Open wound of buttock NOS
S88..00	Open wound of external genital organs
S880.00	Open wound of penis
S880000	Degloving injury penis
S881.00	Open wound of penis with complication
S882.00	Open wound of scrotum and testes
S882000	Open wound of scrotum
S882100	Open wound of testes
S882200	Degloving injury scrotum
S882z00	Open wound of scrotum and testes not otherwise specified
S883.00	Open wound of scrotum and testes with complication
S883000	Open wound of scrotum with complication
S883100	Open wound of testes with complication
S883z00	Open wound of scrotum and testes with complication, NOS
S884.00	Open wound of vulva
S884000	Open wound of vulva, unspecified
S884100	Open wound of labium majus
S884200	Open wound of labium minus
S884z00	Open wound of vulva, NOS
S885.00	Open wound of vulva with complication
S885000	Open wound of vulva with complication, unspecified
S885100	Open wound of labium majus with complication
S885200	Open wound of labium minus with complication
S885z00	Open wound of vulva with complication, NOS
S886.00	Open wound of vagina
S887.00	Open wound of vagina with complication
S88x.00	Other open wound of external genital organ
S88y.00	Other open wound of external genital organ with complication
S88z.00	Open wound of external genital organ NOS
S89..00	Other open wounds of other sites, excluding limbs
S890.00	Open wound of breast
S891.00	Open wound of breast with complication
S892.00	Open wound of anterior abdominal wall
S892000	Open wound of epigastric region
S892100	Open wound umbilical region
S892200	Open wound of hypogastric region
S892300	Open wound of pubic region without complication
S892z00	Open wound anterior abdominal wall without complication NOS
S893.00	Open wound of anterior abdominal wall with complication
S893000	Open wound of epigastrium with complication
S893100	Open wound of umbilical region with complication
S893200	Open wound of hypogastrium with complication
S893300	Open wound of pubic region with complication
S893z00	Open wound of anterior abdominal wall with complication NOS
S894.00	Open wound of lateral abdominal wall
S894000	Open wound of hypochondrium

S894100	Open wound of lumbar region
S894111	Open wound of flank without complication
S894200	Open wound of iliac region
S894300	Open wound of inguinal region
S894311	Open wound of groin without complication
S894400	Open wound of flank without complication
S894500	Open wound of loin
S894z00	Open wound of lateral abdominal wall NOS
S895.00	Open wound of lateral abdominal wall with complication
S895000	Open wound of hypochondrium with complication
S895100	Open wound of lumbar region with complication
S895111	Open wound of flank with complication
S895200	Open wound of iliac region with complication
S895300	Open wound of inguinal region with complication
S895311	Open wound of groin with complication
S895400	Open wound of flank with complication
S895z00	Open wound of lateral abdominal wall with complication, NOS
S89v.00	Other and unspecified open wound of trunk
S89v000	Open wound of pelvic region
S89v100	Open wound of perineum
S89vz00	Other and unspecified open wound of trunk, NOS
S89w.00	Other and unspecified open wound of trunk with complication
S89w000	Open wound of pelvic region with complication
S89w100	Open wound of perineum with complication
S89wz00	Other and unspecified open wound trunk with complication NOS
S89x.00	Multiple open wounds, of unspecified site
S89y.00	Multiple open wounds with complication, of unspecified site
S89z.00	Other open wounds NOS
S8A..00	Open wounds involving head with neck
S8z..00	Open wound of head, neck and trunk NOS
S8z..11	Laceration NOS
S8z..12	Traumatic ulcer NOS
S8z..13	Laceration
S9...00	Open wound of upper limb
S9...11	Laceration of arm
S9...12	Open wound of arm
S90..00	Open wound of shoulder region and upper limb
S900.00	Open wound of shoulder/upper limb without complication
S900000	Open wound of shoulder region
S900100	Open wound of scapular region
S900200	Open wound of axillary region
S900300	Open wound of upper arm
S900400	Multiple open wounds of shoulder and upper arm
S900x00	Multiple open wounds of upper arm
S900z00	Open wound of shoulder and upper limb NOS
S901.00	Open wound of shoulder and upper limb with complication
S901000	Open wound of shoulder region with complication
S901100	Open wound of scapular region with complication
S901200	Open wound of axillary region with complication
S901300	Open wound of upper arm with complication

S901x00	Multiple open wounds of upper arm with complication
S901z00	Open wound of shoulder and upper arm with complication, NOS
S902.00	Open wound of shoulder/upper limb with tendon involvement
S902.11	Open wound of arm with tendon injury
S902000	Open wound of shoulder region with tendon involvement
S902100	Open wound of scapular region with tendon involvement
S902200	Open wound of axillary region with tendon involvement
S902300	Open wound of upper arm with tendon involvement
S902x00	Multiple open wounds of upper arm with tendon involvement
S902z00	Open wound shoulder/upper arm with tendon involvement, NOS
S903.00	Degloving injury, shoulder or upper arm
S903000	Degloving injury, shoulder area
S903100	Degloving injury, scapular area
S903200	Degloving injury, axilla
S903300	Degloving injury, upper arm
S90z.00	Open wound of shoulder region and upper arm NOS
S91..00	Open wound of elbow, forearm and wrist
S910.00	Open wound of lower arm without mention of complication
S910000	Open wound of forearm
S910100	Open wound of elbow
S910200	Open wound of wrist, unspecified
S910300	Open wound of wrist, volar
S910400	Open wound of wrist, dorsal
S910z00	Open wound of lower arm, NOS
S911.00	Open wound of lower arm with complication
S911000	Open wound of forearm with complication
S911100	Open wound of elbow with complication
S911200	Open wound of wrist with complication
S911z00	Open wound of lower arm with complication, NOS
S912.00	Open wound of lower arm with tendon involvement
S912.11	Open wound of lower arm with tendon injury
S912000	Open wound of forearm with tendon involvement
S912100	Open wound of elbow with tendon involvement
S912200	Open wound of wrist with tendon involvement
S912300	Complete division extensor tendon wrist
S912400	Complete division flexor tendon wrist
S912z00	Open wound of lower arm with tendon involvement, NOS
S913.00	Degloving injury lower arm
S913000	Degloving injury, forearm
S913100	Degloving injury, elbow area
S913200	Degloving injury wrist, volar
S913300	Degloving injury wrist, dorsum
S91z.00	Open wound of elbow, forearm and wrist NOS
S92..00	Open wound of hand, excluding finger(s)
S920.00	Open wound of hand without mention of complication
S920000	Open wound of hand, palm
S920100	Open wound of hand, dorsum
S920200	Multiple open wounds of wrist and hand
S921.00	Open wound of hand with complication
S922.00	Open wound of hand with tendon involvement

S923.00	Degloving injury hand
S923000	Degloving injury hand, palmar
S923100	Degloving injury hand, dorsum
S924.00	Severe multi tissue damage hand
S925.00	Massive multi tissue damage hand
S92z.00	Open wound of hand, excluding fingers, NOS
S93..00	Open wound of finger(s) or thumb
S93..11	Open wound of fingernail
S93..12	Open wound of nail
S93..13	Open wound of thumb
S93..14	Open wound of thumbnail
S930.00	Open wound of finger or thumb without mention of complicatn
S930000	Open wound, finger
S930100	Open wound, finger, multiple
S930200	Open wound, thumb
S931.00	Open wound of finger or thumb with complication
S932.00	Open wound of finger or thumb with tendon involvement
S932.11	Open wound of finger with tendon injury
S932000	Complete division, flexor digitorum superficialis tendon
S932100	Complete division, flexor digitorum profundus tendon
S932200	Complete division, both flexor tendons
S932300	Complete division, extensor digitorum tendon
S932400	Mallet finger with open tendon injury
S932500	Complete division, flexor pollicis longus tendon
S932600	Complete division, extensor pollicis longus tendon
S932700	Mallet thumb with open tendon injury
S933.00	Degloving injury, finger
S933000	Degloving injury, finger unspecified
S933100	Degloving injury, finger, multiple
S933200	Ring avulsion injury, class 1
S933300	Ring avulsion injury, class 2
S933400	Ring avulsion injury, class 3
S933500	Ring avulsion injury, class 4
S934.00	Degloving injury, thumb
S935.00	Open wound fingernail
S936.00	Open wound thumbnail
S937.00	Open wound of finger with damage to nail
S938.00	Open wound of thumb with damage to nail
S93z.00	Open wound of finger(s) NOS
S94..00	Multiple and unspecified open wound of upper limb
S940.00	Multiple/unspec open wound upper limb without complication
S941.00	Multiple/unspec open wound of upper limb with complication
S942.00	Multiple/unspec open wound upper limb with tendon involved
S942.11	Multiple/unspec open wound of upper limb with tendon injury
S94z.00	Multiple and unspecified open wound of upper limb NOS
S96X.00	Comb traum amp of (part of) fing(s) + oth part wrist/hand
S9z..00	Open wound of upper limb NOS
SA...00	Open wound of lower limb
SA...11	Open wound of leg
SA...12	Laceration - leg

SA0..00	Open wound of hip and thigh
SA00.00	Open wound of hip and thigh without mention of complication
SA00000	Open wound of hip
SA00100	Open wound of thigh
SA00z00	Open wound hip and thigh, NOS
SA01.00	Open wound of hip and thigh with complication
SA01000	Open wound of hip with complication
SA01100	Open wound of thigh with complication
SA01z00	Open wound of hip and thigh with complication, NOS
SA02.00	Open wound of hip and thigh with tendon involvement
SA02.11	Open wound of hip and thigh with tendon injury
SA02000	Open wound of hip with tendon involvement
SA02100	Open wound of thigh with tendon involvement
SA02200	Complete division, quadriceps tendon
SA02300	Complete division, hamstring tendon
SA02z00	Open wound of hip and thigh with tendon involvement, NOS
SA03.00	Degloving injury, hip or thigh
SA03000	Degloving injury, hip
SA03100	Degloving injury, thigh
SA04.00	Severe multi tissue damage hip or thigh
SA05.00	Massive multi tissue damage hip or thigh
SA0z.00	Open wound of hip and thigh NOS
SA1..00	Open wound of knee, leg and ankle
SA10.00	Open wound of knee, leg and ankle without complication
SA10000	Open wound of knee
SA10100	Open wound of leg
SA10200	Open wound of ankle
SA10z00	Open wound of knee, leg and ankle NOS
SA11.00	Open wound of knee, leg and ankle with complication
SA11000	Open wound of knee with complication
SA11100	Open wound of lower leg with complication
SA11200	Open wound of ankle with complication
SA11z00	Open wound of knee/leg/ankle with complication, NOS
SA12.00	Open wound of knee, leg and ankle with tendon involvement
SA12.11	Open wound of leg with tendon injury
SA12000	Open wound of knee with tendon involvement
SA12100	Open wound of lower leg with tendon involvement
SA12200	Open wound of ankle with tendon involvement
SA12300	Complete division, patellar tendon
SA12400	Complete division, tendocalcaneus (Achilles tendon)
SA12z00	Open wound of knee/leg/ankle with tendon involvement, NOS
SA13.00	Degloving injury, knee or leg or ankle
SA13000	Degloving injury, knee
SA13100	Degloving injury, lower leg
SA13200	Degloving injury, ankle
SA14.00	Severe multi tissue damage lower leg
SA15.00	Massive multi tissue damage lower leg
SA16.00	Multiple injuries of ankle and foot
SA1z.00	Open wound of knee, leg and ankle NOS
SA2..00	Open wound of foot, excluding toe(s)

SA2..11	Open wound of heel
SA20.00	Open wound of foot without mention of complication
SA20100	Open wound foot, plantar
SA20200	Open wound foot, dorsum
SA20300	Open wound, heel
SA21.00	Open wound of foot with complication
SA22.00	Open wound of foot with tendon involvement
SA22.11	Open wound of foot with tendon injury
SA22000	Complete division, flexor tendon, foot
SA22100	Complete division, extensor tendon, foot
SA23.00	Degloving injury, foot
SA23000	Degloving injury foot, plantar
SA23100	Degloving injury foot, dorsum
SA23200	Degloving injury heel
SA24.00	Severe multi tissue damage foot
SA25.00	Massive multi tissue damage foot
SA2z.00	Open wound of foot NOS
SA3..00	Open wound of toe(s)
SA3..11	Open wound of toenail
SA30.00	Open wound of toe(s) without mention of complication
SA31.00	Open wound of toe(s) with complication
SA32.00	Open wound of toe(s) with tendon involvement
SA32.11	Open wound of toe(s) with tendon injury
SA33.00	Degloving injury toe(s)
SA33000	Degloving injury toe
SA33100	Degloving injury, multiple toes
SA34.00	Open wound of toe(s) with damage to nail
SA3z.00	Open wound of toe(s) NOS
SA4..00	Multiple and unspecified open wound of lower limb
SA40.00	Multiple and unspec open wound leg, without complication
SA41.00	Multiple and unspec open wound of leg with complication
SA42.00	Multiple and unspec open wound leg with tendon involvement
SA4z.00	Multiple and unspecified open wound of lower limb NOS
SA9..00	Multiple open wounds of hip and thigh
SAA..00	Open wounds involving multiple regions of lower limb(s)
SAz..00	Open wound of lower limb NOS
SC10.00	Late effect of open wound of head, neck and trunk
SC11.00	Late effect of open wound arm or leg without tendon injury
SC15.00	Late effect of burn of eye, head and neck
SC15.11	Late effect of burn of head or neck
SC16.00	Late effect of burn of wrist and hand
SC17.00	Late effect of burn of arm, leg and foot
SC17.11	Late effect of burn of arm or leg
SC18.00	Late effect of other burns
SC19.00	Late effect of burn NOS
SC1A.00	Late effect of burn of upper limb
SC38.00	Sequelae of open wound of head
SC3A.00	Sequelae of superficial injury + open wound of neck + trunk
SC3C.00	Sequelae of open wound of upper limb
SC3D000	Sequelae of open wound of lower limb

SC44.00	Sequelae of burns, corrosions and frostbite
SC44000	Sequelae of burn, corrosion and frostbite of trunk
SC44100	Sequelae of burn, corrosion and frostbite of lower limb
SC44200	Seq/burn+corros classfbl only accord extent/body surf involv
SD01.00	Abrasion or friction burn of head, infected
SD01.11	Abrasion or friction burn of head, infected
SD01000	Abrasion of face, infected
SD01100	Abrasion of neck, infected
SD01200	Abrasion of scalp, infected
SD01z00	Abrasion or friction burn of head, infected, NOS
SD03.00	Blister of head, infected
SD03000	Blister of face, infected
SD03100	Blister of neck, infected
SD03200	Blister of scalp, infected
SD03z00	Blister of head, infected, NOS
SD05.00	Insect bite, nonvenomous, of head, infected
SD05.11	Insect bite, nonvenomous, of head, infected
SD05000	Insect bite, nonvenomous, of face, infected
SD05100	Insect bite, nonvenomous, of neck, infected
SD05200	Insect bite, nonvenomous, of scalp, infected
SD05z00	Insect bite, nonvenomous, of head, infected, NOS
SD11.00	Abrasion or friction burn of trunk, infected
SD11000	Abrasion of interscapular region, infected
SD11100	Abrasion of chest wall, infected
SD11200	Abrasion of breast, infected
SD11300	Abrasion of abdominal wall, infected
SD11400	Abrasion of back, infected
SD11500	Abrasion of buttock, infected
SD11600	Abrasion of anus, infected
SD11700	Abrasion of flank, infected
SD11800	Abrasion of groin, infected
SD11900	Abrasion of perineum, infected
SD11A00	Abrasion of penis, infected
SD11B00	Abrasion of scrotum and testis, infected
SD11B11	Abrasion or friction burn of scrotum, infected
SD11B12	Abrasion or friction burn of testis, infected
SD11C00	Abrasion of vulva, infected
SD11z00	Abrasion or friction burn of trunk, infected, NOS
SD13.00	Blister of trunk, infected
SD13000	Blister of interscapular region, infected
SD13100	Blister of chest wall, infected
SD13200	Blister of breast, infected
SD13300	Blister of abdominal wall, infected
SD13400	Blister of back, infected
SD13500	Blister of buttock, infected
SD13600	Blister of anus, infected
SD13700	Blister of flank, infected
SD13800	Blister of groin, infected
SD13900	Blister of perineum, infected
SD13A00	Blister of penis, infected

SD13B00	Blister of scrotum and testis, infected
SD13B11	Blister of scrotum, infected
SD13B12	Blister of testis, infected
SD13C00	Blister of vulva, infected
SD13D00	Blister of vagina, infected
SD13z00	Blister of trunk, infected, NOS
SD15.00	Insect bite, nonvenomous, of trunk, infected
SD15000	Insect bite, nonvenomous, of interscapular region, infected
SD15100	Insect bite, nonvenomous, of chest wall, infected
SD15200	Insect bite, nonvenomous, of breast, infected
SD15300	Insect bite, nonvenomous, of abdominal wall, infected
SD15400	Insect bite, nonvenomous, of back, infected
SD15500	Insect bite, nonvenomous, of buttock, infected
SD15600	Insect bite, nonvenomous, of anus, infected
SD15700	Insect bite, nonvenomous, of flank, infected
SD15800	Insect bite, nonvenomous, of groin, infected
SD15900	Insect bite, nonvenomous, of perineum, infected
SD15A00	Insect bite, nonvenomous, of penis, infected
SD15B00	Insect bite, nonvenomous, of scrotum and testis, infected
SD15B11	Insect bite, nonvenomous, of scrotum, infected
SD15B12	Insect bite, nonvenomous, of testis, infected
SD15C00	Insect bite, nonvenomous, of vulva, infected
SD15D00	Insect bite, nonvenomous, of vagina, infected
SD15z00	Insect bite, nonvenomous, of trunk, infected, NOS
SD1z.00	Superficial injury of trunk NOS, infected
SD1z000	Superficial injury of interscapular region NOS, infected
SD1z100	Superficial injury of chest wall NOS, infected
SD1z200	Superficial injury of breast NOS, infected
SD1z300	Superficial injury of abdominal wall NOS, infected
SD1z400	Superficial injury of back NOS, infected
SD1z500	Superficial injury of buttock NOS, infected
SD1z600	Superficial injury of anus NOS, infected
SD1z700	Superficial injury of flank NOS, infected
SD1z800	Superficial injury of groin NOS, infected
SD1z900	Superficial injury of perineum NOS, infected
SD1zA00	Superficial injury of penis NOS, infected
SD1zB00	Superficial injury of scrotum and testis NOS, infected
SD1zC00	Superficial injury of vulva NOS, infected
SD1zz00	Superficial injury of trunk NOS, infection NOS
SD21.00	Abrasion or friction burn of shoulder/upper arm, infected
SD21000	Abrasion of shoulder, infected
SD21100	Abrasion of scapular region, infected
SD21200	Abrasion of axilla, infected
SD21300	Abrasion of upper arm, infected
SD21z00	Abrasion or friction burn shoulder/upper arm, infected, NOS
SD23.00	Blister of shoulder and upper arm, infected
SD23000	Blister of shoulder, infected
SD23100	Blister of scapular region, infected
SD23200	Blister of axilla, infected
SD23300	Blister of upper arm, infected

SD23z00	Blister of shoulder and upper arm, infected, NOS
SD25.00	Insect bite, nonvenomous, of shoulder/upper arm, infected
SD25000	Insect bite, nonvenomous, of shoulder, infected
SD25100	Insect bite, nonvenomous, of interscapular region, infected
SD25200	Insect bite, nonvenomous, of axilla, infected
SD25300	Insect bite, nonvenomous, of upper arm, infected
SD25z00	Insect bite, nonvenomous, shoulder/upper arm, infected, NOS
SD2z.00	Superficial injury of shoulder and upper arm NOS, infected
SD2z000	Superficial injury of shoulder NOS, infected
SD2z100	Superficial injury of scapular region NOS, infected
SD2z200	Superficial injury of axilla NOS, infected
SD2z300	Superficial injury of upper arm NOS, infected
SD2zz00	Superficial injury shoulder/upper arm, infection NOS
SD31.00	Abrasion or friction burn of lower arm, infected
SD31000	Abrasion of elbow, infected
SD31100	Abrasion of forearm, infected
SD31200	Abrasion of wrist, infected
SD31z00	Abrasion or friction burn of lower arm, infected, NOS
SD33.00	Blister of lower arm, infected
SD33000	Blister of elbow, infected
SD33100	Blister of forearm, infected
SD33200	Blister of wrist, infected
SD33z00	Blister of lower arm, infected, NOS
SD35.00	Insect bite, nonvenomous, of lower arm, infected
SD35000	Insect bite, nonvenomous, of elbow, infected
SD35100	Insect bite, nonvenomous, of forearm, infected
SD35200	Insect bite, nonvenomous, of wrist, infected
SD35z00	Insect bite, nonvenomous, of lower arm, infected, NOS
SD3z.00	Superficial injury of lower arm NOS, infected
SD3z000	Superficial injury of elbow NOS, infected
SD3z100	Superficial injury of forearm NOS, infected
SD3z200	Superficial injury of wrist NOS, infected
SD3zz00	Superficial injury of lower arm, infected NOS
SD41.00	Abrasion or friction burn of hand, infected
SD43.00	Blister of hand, infected
SD45.00	Insect bite, nonvenomous, of hand, infected
SD4z.00	Superficial injury of hand NOS, infected
SD51.00	Abrasion or friction burn of finger, infected
SD53.00	Blister of finger, infected
SD55.00	Insect bite, nonvenomous, of finger, infected
SD5z.00	Superficial injury of finger NOS, infected
SD61.00	Abrasion or friction burn of lower limb, infected
SD61.11	Abrasion or friction burn of leg, infected
SD61000	Abrasion of hip, infected
SD61100	Abrasion of thigh, infected
SD61200	Abrasion of knee, infected
SD61300	Abrasion of lower leg, infected
SD61400	Abrasion of ankle, infected
SD61z00	Abrasion or friction burn of lower limb, infected, NOS
SD63.00	Blister of lower limb, infected

SD63.11	Blister of leg, infected
SD63000	Blister of hip, infected
SD63100	Blister of thigh, infected
SD63200	Blister of knee, infected
SD63300	Blister of lower leg, infected
SD63400	Blister of ankle, infected
SD63z00	Blister of lower limb, infected, NOS
SD65.00	Insect bite, nonvenomous, of lower limb, infected
SD65.11	Insect bite, nonvenomous, of leg, infected
SD65000	Insect bite, nonvenomous, of hip, infected
SD65100	Insect bite, nonvenomous, of thigh, infected
SD65200	Insect bite, nonvenomous, of knee, infected
SD65300	Insect bite, nonvenomous, of lower leg, infected
SD65400	Insect bite, nonvenomous, of ankle, infected
SD65z00	Insect bite, nonvenomous, of lower limb, infected, NOS
SD6z.00	Superficial injury of lower limb, infected
SD6z000	Superficial injury of hip NOS, infected
SD6z100	Superficial injury of thigh NOS, infected
SD6z200	Superficial injury of knee NOS, infected
SD6z300	Superficial injury of lower leg NOS, infected
SD6z400	Superficial injury of ankle NOS, infected
SD6zz00	Superficial injury of lower limb, infected, NOS
SD71.00	Abrasion or friction burn of foot and toe, infected
SD71.11	Abrasion or friction burn of heel, infected
SD71.12	Abrasion or friction burn of toenail, infected
SD71000	Abrasion of foot, infected
SD71100	Abrasion of toe, infected
SD71z00	Abrasion or friction burn of foot and toe, infected, NOS
SD73.00	Blister of foot and toe, infected
SD73.11	Blister of heel, infected
SD73000	Blister of foot, infected
SD73100	Blister of toe, infected
SD73z00	Blister of foot and toe, infected, NOS
SD75.00	Insect bite, nonvenomous, of foot and toe, infected
SD75.11	Insect bite, nonvenomous, of heel, infected
SD75000	Insect bite, nonvenomous, of foot, infected
SD75100	Insect bite, nonvenomous, of toe, infected
SD75z00	Insect bite, nonvenomous, of foot and toe, infected, NOS
SD7z.00	Superficial injury of foot and toe NOS, infected
SD7z000	Superficial injury of foot NOS, infected
SD7z100	Superficial injury of toe NOS, infected
SD7zz00	Superficial injury of foot and toe, infected, NOS
SD91.00	Abrasion or friction burn, infected, NOS
SD95.00	Insect bite, nonvenomous, infected, NOS
SD96000	Foreign body in skin wound
SD99.00	Tick bite, infected
SD9z.00	Other superficial injury, infected, NOS
SH...00	Burns
SH1..00	Burn of the face, head or neck
SH1..11	Face burns

SH1..12	Head burns
SH10.00	Unspecified thickness burn of the face, head or neck
SH10000	Unspecified thickness burn of unspecified part of face/head
SH10100	Unspecified thickness burn of the ear
SH10200	Unspecified thickness burn of the eye
SH10300	Unspecified thickness burn of the lip(s)
SH10400	Unspecified thickness burn of the chin
SH10500	Unspecified thickness burn of the nose
SH10600	Unspecified thickness burn of the scalp
SH10700	Unspecified thickness burn of the forehead
SH10800	Unspecified thickness burn of the cheek
SH10900	Unspecified thickness burn of the neck
SH10x00	Unspecified thickness burn multiple sites face, head or neck
SH10z00	Unspecified thickness burn of the face, head or neck NOS
SH11.00	Superficial burn of the face, head or neck
SH11.11	Erythema of head or neck, first degree burn
SH11000	Superficial burn of unspecified part of the face or head
SH11100	Superficial burn of the ear
SH11200	Superficial burn of the eye
SH11300	Superficial burn of the lip(s)
SH11400	Superficial burn of the chin
SH11500	Superficial burn of the nose
SH11600	Superficial burn of the scalp
SH11700	Superficial burn of the forehead
SH11800	Superficial burn of the cheek
SH11900	Superficial burn of the neck
SH11x00	Superficial burn of multiple sites of the face, head or neck
SH11z00	Superficial burn of the face, head or neck NOS
SH12.00	Partial thickness burn of the face, head or neck
SH12.11	Blister of face, head and neck, second degree burn
SH12000	Superficial part. thickness burn unspecified part face/head
SH12100	Superficial partial thickness burn of the ear
SH12111	Ear - 2nd degree burn
SH12200	Superficial partial thickness burn of the eye
SH12211	Eye - 2nd degree burn
SH12300	Superficial partial thickness burn of the lip(s)
SH12311	Lip - 2nd degree burn
SH12400	Superficial partial thickness burn of the chin
SH12411	Chin - 2nd degree burn
SH12500	Superficial partial thickness burn of the nose
SH12511	Nose - 2nd degree burn
SH12600	Superficial partial thickness burn of the scalp
SH12611	Scalp - 2nd degree burn
SH12700	Superficial partial thickness burn of the forehead
SH12711	Forehead - 2nd degree burn
SH12800	Superficial partial thickness burn of the cheek
SH12811	Cheek - 2nd degree burn
SH12900	Superficial partial thickness burn of the neck
SH12911	Neck - 2nd degree burn
SH12A00	Deep partial thickness burn of unspecified part of face/head

SH12B00	Deep partial thickness burn of the ear
SH12C00	Deep partial thickness burn of the eye
SH12D00	Deep partial thickness burn of the lip(s)
SH12E00	Deep partial thickness burn of the chin
SH12F00	Deep partial thickness burn of the nose
SH12G00	Deep partial thickness burn of the scalp
SH12H00	Deep partial thickness burn of the forehead
SH12J00	Deep partial thickness burn of the cheek
SH12K00	Deep partial thickness burn of the neck
SH12x00	Partial thickness burn of multiple sites face, head or neck
SH12z00	Partial thickness burn of the face, head or neck NOS
SH13.00	Full thickness burn of the face, head or neck
SH13000	Full thickness burn of unspecified part of the face or head
SH13100	Full thickness burn of the ear
SH13200	Full thickness burn of the eye
SH13300	Full thickness burn of the lip(s)
SH13400	Full thickness burn of the chin
SH13500	Full thickness burn of the nose
SH13600	Full thickness burn of the scalp
SH13700	Full thickness burn of the forehead
SH13800	Full thickness burn of the cheek
SH13900	Full thickness burn of the neck
SH13A00	Corrosion of third degree of head and neck
SH13x00	Full thickness burn of multiple sites of face, head or neck
SH13z00	Full thickness burn of the face, head or neck NOS
SH14.00	Deep full thick burn face/head/neck - without loss body part
SH14000	Deep full thick burn unspec.part face/head-no loss body part
SH14100	Deep full thickness burn of ear without loss of body part
SH14200	Deep full thickness burn of eye without loss of body part
SH14300	Deep full thickness burn of lip(s) without loss of body part
SH14400	Deep full thickness burn of chin without loss of body part
SH14500	Deep full thickness burn of nose without loss of body part
SH14600	Deep full thickness burn of scalp without loss of body part
SH14700	Deep full thickness burn forehead without loss of body part
SH14800	Deep full thickness burn of cheek without loss of body part
SH14900	Deep full thickness burn of neck without loss of body part
SH14x00	Deep full thickness burn multip sites face/head/neck- no BPL
SH14z00	Deep full thick burn, no loss body part, face/head/neck NOS
SH15.00	Deep full thick burn face/head/neck, with loss of body part
SH15000	Deep full thickness burn unspec part of face/head, with BPL
SH15100	Deep full thickness burn of the ear, with loss of body part
SH15200	Deep full thickness burn of the eye, with loss of body part
SH15300	Deep full thickness burn of lip(s), with loss of body part
SH15400	Deep full thickness burn of the chin, with loss of body part
SH15500	Deep full thickness burn of the nose, with loss of body part
SH15600	Deep full thickness burn of scalp, with loss of body part
SH15700	Deep full thickness burn of forehead, with loss of body part
SH15800	Deep full thickness burn of cheek, with loss of body part
SH15900	Deep full thickness burn of the neck, with loss of body part
SH15x00	Deep full thick burn multip parts face/head/neck - with BPL

SH15z00	Deep full thick burn, with loss body part,face/head/neck NOS
SH16.00	Corrosion of head and neck
SH16000	Corrosion of first degree of head and neck
SH16100	Corrosion of second degree of head and neck
SH1z.00	Burn of the face, head or neck NOS
SH2..00	Burn of the trunk
SH20.00	Unspecified thickness burn of the trunk
SH20000	Unspecified thickness burn of unspecified part of the trunk
SH20100	Unspecified thickness burn of the breast
SH20200	Unspecified thickness burn of the chest wall
SH20300	Unspecified thickness burn of the abdominal wall
SH20400	Unspecified thickness burn of the back (excluding buttock)
SH20500	Unspecified thickness burn of the buttock
SH20600	Unspecified thickness burn of the genitalia
SH20x00	Unspecified thickness burn of multiple sites of the trunk
SH20z00	Unspecified thickness burn of the trunk NOS
SH21.00	Superficial burn of the trunk
SH21.11	Erythema of trunk, 1st degree burn
SH21000	Superficial burn of unspecified part of the trunk
SH21100	Superficial burn of the breast
SH21200	Superficial burn of the chest wall
SH21300	Superficial burn of the abdominal wall
SH21400	Superficial burn of the back (excluding buttock)
SH21500	Superficial burn of the buttock
SH21600	Superficial burn of the genitalia
SH21700	Corrosion of first degree of trunk
SH21x00	Superficial burn of multiple sites of the trunk
SH21z00	Superficial burn of the trunk NOS
SH22.00	Partial thickness burn of the trunk
SH22.11	Blister of trunk, second degree burn
SH22000	Superficial partial thickness burn unspecified part of trunk
SH22100	Superficial partial thickness burn of the breast
SH22200	Superficial partial thickness burn of the chest wall
SH22300	Superficial partial thickness burn of the abdominal wall
SH22400	Superficial partial thickness burn of back (excl buttock)
SH22500	Superficial partial thickness burn of the buttock
SH22600	Superficial partial thickness burn of the genitalia
SH22700	Deep partial thickness burn of the trunk, unspecified
SH22800	Deep partial thickness burn of the breast
SH22900	Deep partial thickness burn of the chest wall
SH22A00	Deep partial thickness burn of the abdominal wall
SH22B00	Deep partial thickness burn of the back (excluding buttock)
SH22C00	Deep partial thickness burn of the buttock
SH22D00	Deep partial thickness burn of the genitalia
SH22E00	Corrosion of second degree of trunk
SH22x00	Partial thickness burn of multiple sites of the trunk
SH22z00	Partial thickness burn of the trunk NOS
SH23.00	Full thickness burn of the trunk
SH23000	Full thickness burn of the trunk, unspecified
SH23100	Full thickness burn of the breast

SH23200	Full thickness burn of the chest wall
SH23300	Full thickness burn of the abdominal wall
SH23400	Full thickness burn of the back (excluding buttock)
SH23500	Full thickness burn of the buttock
SH23600	Full thickness burn of the genitalia
SH23700	Corrosion of third degree of trunk
SH23x00	Full thickness burn of multiple sites of the trunk
SH23z00	Full thickness burn of the trunk NOS
SH24.00	Deep full thickness burn of trunk without loss of body part
SH24000	Deep full thickness burn of trunk unsp, no loss of body part
SH24100	Deep full thickness burn of breast without loss of body part
SH24200	Deep full thickness burn of chest without loss of body part
SH24300	Deep full thickness burn of abdom.wall, no loss of body part
SH24400	Deep full thickness burn of back without loss of body part
SH24500	Deep full thickness burn of buttock, no loss of body part
SH24600	Deep full thickness burn of genitalia, no loss of body part
SH24x00	Deep full thickness burn multiple sites trunk, no BPL
SH24z00	Deep full thickness burn of trunk, no loss of body part NOS
SH25.00	Deep full thickness burn of trunk, with loss of body part
SH25000	Deep full thickness burn of trunk unsp, with loss body part
SH25100	Deep full thickness burn of breast, with loss of body part
SH25200	Deep full thickness burn of chest, with loss of body part
SH25300	Deep full thickness burn of abd.wall, with loss of body part
SH25400	Deep full thickness burn of back, with loss of body part
SH25500	Deep full thickness burn of buttock, with loss of body part
SH25600	Deep full thickness burn of genitalia, with loss body part
SH25x00	Deep full thickness burn multiple sites trunk with BPL
SH25z00	Deep full thickness burn of trunk, with loss body part, NOS
SH26.00	Corrosion of unspecified degree of trunk
SH2z.00	Burn of the trunk NOS
SH3..00	Burn of the arm (excluding wrist and hand)
SH30.00	Unspecified thickness burn of the arm
SH30000	Unspecified thickness burn of the arm, unspecified
SH30100	Unspecified thickness burn of the forearm
SH30200	Unspecified thickness burn of the elbow
SH30300	Unspecified thickness burn of the upper arm
SH30400	Unspecified thickness burn of the axilla
SH30500	Unspecified thickness burn of the shoulder
SH30600	Unspecified thickness burn of the scapular region
SH30x00	Unspecified thickness burn of multiple sites of the arm
SH30z00	Unspecified thickness burn of the arm NOS
SH31.00	Superficial burn of the arm
SH31.11	Erythema of arm, first degree burn
SH31000	Superficial burn of the arm, unspecified
SH31100	Superficial burn of the forearm
SH31200	Superficial burn of the elbow
SH31300	Superficial burn of the upper arm
SH31400	Superficial burn of the axilla
SH31500	Superficial burn of the shoulder
SH31600	Superficial burn of the scapular region

SH31x00	Superficial burn of multiple sites of the arm
SH31z00	Superficial burn of the arm NOS
SH32.00	Partial thickness burn of the arm
SH32.11	Blister of arm, second degree burn
SH32000	Superficial partial thickness burn of the arm, unspecified
SH32100	Superficial partial thickness burn of the forearm
SH32200	Superficial partial thickness burn of the elbow
SH32300	Superficial partial thickness burn of the upper arm
SH32400	Superficial partial thickness burn of the axilla
SH32500	Superficial partial thickness burn of the shoulder
SH32600	Superficial partial thickness burn of scapular region
SH32700	Deep partial thickness burn of the arm, unspecified
SH32800	Deep partial thickness burn of the forearm
SH32900	Deep partial thickness burn of the elbow
SH32A00	Deep partial thickness burn of the upper arm
SH32B00	Deep partial thickness burn of the axilla
SH32C00	Deep partial thickness burn of the shoulder
SH32D00	Deep partial thickness burn of the scapular region
SH32x00	Partial thickness burn of multiple sites of the arm
SH32z00	Partial thickness burn of the arm NOS
SH33.00	Full thickness burn of the arm
SH33000	Full thickness burn of the arm, unspecified
SH33100	Full thickness burn of the forearm
SH33200	Full thickness burn of the elbow
SH33300	Full thickness burn of the upper arm
SH33400	Full thickness burn of the axilla
SH33500	Full thickness burn of the shoulder
SH33600	Full thickness burn of the scapular region
SH33x00	Full thickness burn of multiple sites of the arm
SH33z00	Full thickness burn of the arm NOS
SH34.00	Deep full thickness burn of arm without loss of body part
SH34000	Deep full thickness burn of arm unsp, no loss of body part
SH34100	Deep full thickness burn of forearm, no loss of body part
SH34200	Deep full thickness burn of elbow without loss of body part
SH34300	Deep full thickness burn of upper arm, no loss of body part
SH34400	Deep full thickness burn of axilla without loss of body part
SH34500	Deep full thickness burn of shoulder, no loss of body part
SH34600	Deep full thickness burn of scapular, no loss of body part
SH34x00	Deep full thickness burn of multiple sites of arm, no BPL
SH34z00	Deep full thickness burn without loss of body part-arm NOS
SH35.00	Deep full thickness burn of arm, with loss of body part
SH35000	Deep full thickness burn of arm unsp, with loss of body part
SH35100	Deep full thickness burn of forearm, with loss of body part
SH35200	Deep full thickness burn of elbow, with loss of body part
SH35300	Deep full thickness burn of upper arm,with loss of body part
SH35400	Deep full thickness burn of axilla, with loss of body part
SH35500	Deep full thickness burn of shoulder, with loss of body part
SH35600	Deep full thickness burn of scapular, with loss of body part
SH35x00	Deep full thickness burn of multiple sites of arm with BPL
SH35z00	Deep full thickness burn-, with loss of body part-arm NOS

SH36.00	Corros/unspecf degree/shoulder+upper limb,except wrist+hand
SH36000	Corrosion/1st degree shoulder+upper limb,except wrist+hand
SH36100	Corrosion/2nd degree/shoulder and upper limb exc wrist+hand
SH36200	Corros/third degree/shoulder and upper limb, exc wrist+hand
SH3z.00	Burn of the arm (excluding wrist and hand) NOS
SH4..00	Burn of the wrist(s) and hand(s)
SH40.00	Unspecified thickness burn of the wrist and hand
SH40.11	Unspecified degree burn of finger
SH40.12	Unspecified degree burn of hand
SH40.13	Unspecified degree burn of thumb
SH40.14	Unspecified degree burn of wrist
SH40000	Unspecified thickness burn of the hand, unspecified
SH40100	Unspecified thickness burn of a single finger
SH40200	Unspecified thickness burn of the thumb
SH40300	Unspecified thickness burn of more than one finger
SH40400	Unspecified thickness burn of the thumb and finger(s)
SH40500	Unspecified thickness burn of the palm of hand
SH40600	Unspecified thickness burn of the back of hand
SH40700	Unspecified thickness burn of the wrist
SH40x00	Unspecified thickness burn of multiple sites of wrist/hand
SH40z00	Unspecified thickness burn of the wrist or hand NOS
SH41.00	Superficial burn of the wrist and hand
SH41.11	Erythema of wrist and hand,first degree burn
SH41.12	First degree burn of finger
SH41.13	First degree burn of hand
SH41.14	First degree burn of thumb
SH41.15	First degree burn of wrist
SH41000	Superficial burn of the hand, unspecified
SH41100	Superficial burn of a single finger
SH41200	Superficial burn of the thumb
SH41300	Superficial burn of more than one finger
SH41400	Superficial burn of the thumb and finger(s)
SH41500	Superficial burn of the palm of hand
SH41600	Superficial burn of the back of hand
SH41700	Superficial burn of the wrist
SH41x00	First degree burn of multiple sites of the wrist or hand
SH41z00	Superficial burn of the wrist or hand NOS
SH42.00	Partial thickness burn of the wrist and hand
SH42.11	Blister of wrist and hand, second degree burn
SH42.12	Second degree burn of finger
SH42.13	Second degree burn of hand
SH42.14	Second degree burn of thumb
SH42.15	Second degree burn of wrist
SH42000	Superficial partial thickness burn of hand, unspecified
SH42100	Superficial partial thickness burn of a single finger
SH42200	Superficial partial thickness burn of the thumb
SH42300	Superficial partial thickness burn of more than one finger
SH42400	Superficial partial thickness burn of thumb and finger(s)
SH42500	Superficial partial thickness burn of palm of hand
SH42600	Superficial partial thickness burn of back of hand

SH42700	Superficial partial thickness burn of the wrist
SH42800	Deep partial thickness burn of the hand, unspecified
SH42900	Deep partial thickness burn of a single finger
SH42A00	Deep partial thickness burn of the thumb
SH42B00	Deep partial thickness burn of more than one finger
SH42C00	Deep partial thickness burn of the thumb and finger(s)
SH42D00	Deep partial thickness burn of the palm of hand
SH42E00	Deep partial thickness burn of back of hand
SH42F00	Deep partial thickness burn of wrist
SH42x00	Partial thickness burn of multiple sites of the wrist/hand
SH42z00	Partial thickness burn of the wrist or hand NOS
SH43.00	Full thickness burn of the wrist and hand
SH43.11	Third degree burn of finger
SH43.12	Third degree burn of hand
SH43.13	Third degree burn of thumb
SH43.14	Third degree burn of wrist
SH43000	Full thickness burn of the hand, unspecified
SH43100	Full thickness burn of a single finger
SH43200	Full thickness burn of the thumb
SH43300	Full thickness burn of more than one finger
SH43400	Full thickness burn of the thumb and finger(s)
SH43500	Full thickness burn of the palm of hand
SH43600	Full thickness burn of the back of hand
SH43700	Full thickness burn of the wrist
SH43x00	Full thickness burn of multiple sites of the wrist or hand
SH43z00	Full thickness burn of the wrist or hand NOS
SH44.00	Deep full thickness burn of wrist/hand, no loss of body part
SH44.11	Deep third degree burn of finger,without loss of a body part
SH44.12	Deep third degree burn of hand, without loss of a body part
SH44.13	Deep third degree burn of thumb, without loss of a body part
SH44.14	Deep third degree burn of wrist, without loss of a body part
SH44000	Deep full thickness burn of hand unsp, no loss of body part
SH44100	Deep full thickness burn of a finger, no loss of body part
SH44200	Deep full thickness burn of thumb without loss of body part
SH44300	Deep full thickness burn of >1 finger, no loss of body part
SH44400	Deep full thickness burn of thumb+fing, no loss of body part
SH44500	Deep full thickness burn of palm hand, no loss of body part
SH44600	Deep full thickness burn of back hand, no loss of body part
SH44700	Deep full thickness burn of wrist without loss of body part
SH44x00	Deep full thickness burn-multiple sites wrist/hand, no BPL
SH44z00	Deep full thickness burn of wrist/hand,no loss body part NOS
SH45.00	Deep full thickness burn of wrist/hand, with loss body part
SH45.11	Deep third degree burn of finger with loss of a body part
SH45.12	Deep third degree burn of hand with loss of a body part
SH45.13	Deep third degree burn of thumb with loss of a body part
SH45.14	Deep third degree burn of wrist with loss of a body part
SH45000	Deep full thickness burn of hand unsp, with loss body part
SH45100	Deep full thickness burn of a finger, with loss of body part
SH45200	Deep full thickness burn of thumb, with loss of body part
SH45300	Deep full thickness burn of >1 finger, with loss body part

SH45400	Deep full thickness burn of thumb+fing, with loss body part
SH45500	Deep full thickness burn of palm hand, with loss body part
SH45600	Deep full thickness burn of back hand, with loss body part
SH45700	Deep full thickness burn of wrist, with loss of body part
SH45x00	Deep full thickness burn-multiple sites wrist/hand with BPL
SH45z00	Deep full thickness burn wrist/hand, with loss body part NOS
SH46.00	Corrosion of wrist and hand
SH46000	Corrosion of first degree of wrist and hand
SH46100	Corrosion of second degree of wrist and hand
SH46200	Corrosion of third degree of wrist and hand
SH4z.00	Burn of wrist or hand NOS
SH5..00	Burn of lower limbs
SH5..11	Leg burns
SH50.00	Unspecified thickness burn of the leg
SH50000	Unspecified degree burn of the leg, unspecified
SH50100	Unspecified thickness burn of the toe(s)
SH50200	Unspecified thickness burn of the foot
SH50300	Unspecified thickness burn of the ankle
SH50400	Unspecified thickness burn of the lower leg
SH50500	Unspecified thickness burn of the knee
SH50600	Unspecified thickness burn of the thigh
SH50x00	Unspecified thickness burn of multiple sites of the leg
SH50z00	Unspecified thickness burn of the leg NOS
SH51.00	Superficial burn of the leg
SH51.11	Erythema of leg, first degree burn
SH51000	Superficial burn of the leg, unspecified
SH51100	Superficial burn of the toe(s)
SH51200	Superficial burn of the foot
SH51300	Superficial burn of the ankle
SH51400	Superficial burn of the lower leg
SH51500	Superficial burn of the knee
SH51600	Superficial burn of the thigh
SH51x00	Superficial burn of multiple sites of the leg
SH51z00	Superficial burn of the leg NOS
SH52.00	Partial thickness burn of the leg
SH52.11	Blister of leg, second degree burn
SH52000	Superficial partial thickness burn of the leg, unspecified
SH52100	Superficial partial thickness burn of the toe(s)
SH52200	Superficial partial thickness burn of the foot
SH52300	Superficial partial thickness burn of the ankle
SH52400	Superficial partial thickness burn of the lower leg
SH52500	Superficial partial thickness burn of the knee
SH52600	Superficial partial thickness burn of the thigh
SH52700	Deep partial thickness burn of the leg, unspecified
SH52800	Deep partial thickness burn of the toe(s)
SH52900	Deep partial thickness burn of the foot
SH52A00	Deep partial thickness burn of the ankle
SH52B00	Deep partial thickness burn of the lower leg
SH52C00	Deep partial thickness burn of the knee
SH52D00	Deep partial thickness burn of the thigh

SH52x00	Partial thickness burn of multiple sites of the leg
SH52z00	Partial thickness burn of the leg NOS
SH53.00	Full thickness burn of the leg
SH53000	Full thickness burn of the leg, unspecified
SH53100	Full thickness burn of the toe(s)
SH53200	Full thickness burn of the foot
SH53300	Full thickness burn of the ankle
SH53400	Full thickness burn of the lower leg
SH53500	Full thickness burn of the knee
SH53600	Full thickness burn of the thigh
SH53x00	Full thickness burn of multiple sites of the leg
SH53z00	Full thickness burn of the leg NOS
SH54.00	Deep full thickness burn of leg without loss of body part
SH54000	Deep full thickness burn of leg unsp, no loss of body part
SH54100	Deep full thickness burn of toe(s) without loss of body part
SH54200	Deep full thickness burn of foot without loss of body part
SH54300	Deep full thickness burn of ankle without loss of body part
SH54400	Deep full thickness burn of lower leg without loss of body
SH54500	Deep full thickness burn of knee without loss of body part
SH54600	Deep full thickness burn of thigh without loss of body part
SH54x00	Deep full thickness burn-mult.leg without loss of body part
SH54z00	Deep full thickness burn, no loss of body part, of leg NOS
SH55.00	Deep full thickness burn of leg, with loss of body part
SH55000	Deep full thickness burn of leg unspec, with loss body part
SH55100	Deep full thickness burn of toe(s), with loss of body part
SH55200	Deep full thickness burn of foot, with loss of body part
SH55300	Deep full thickness burn of ankle, with loss of body part
SH55400	Deep full thickness burn of lower leg, with loss body part
SH55500	Deep full thickness burn of knee, with loss of body part
SH55600	Deep full thickness burn of thigh, with loss of body part
SH55x00	Deep full thickness burn-mult.leg, with loss of body part
SH55z00	Deep full thickness burn, with loss of body part, of leg NOS
SH56.00	Burn and corrosion of hip and lower limb,except ankle & foot
SH56000	Corrosion of first degree of hip+lower limb,exc ankle + foot
SH56100	Corrosion/2nd degree/hip+lower limb,except ankle & foot
SH56200	Corrosion/third degree/hip+lower limb except ankle and foot
SH57.00	Corrosion of ankle and foot
SH57000	Corrosion of first degree of ankle and foot
SH57100	Corrosion of second degree of ankle and foot
SH57200	Corrosion of third degree of ankle and foot
SH5z.00	Burn of the lower limb NOS
SH6..00	Burn of multiple specified sites
SH60.00	Unspecified thickness burn of multiple specified sites
SH61.00	Superficial burn of multiple specified sites
SH62.00	Partial thickness burn of multiple specified sites
SH62000	Superficial partial thickness burn multiple specified sites
SH62100	Deep partial thickness burn of multiple specified sites
SH63.00	Full thickness burn of multiple specified sites
SH64.00	Deep full thickness burn multiple specified sites, no BPL
SH65.00	Deep full thickness burn multiple specified sites, with BPL

SH66.00	Corrosions of multiple regions, unspecified degree
SH66000	Corros/multiple reg,no more than first-deg corros mentioned
SH66100	Corrosion/multi reg,no more than second-deg corros mentioned
SH66300	Corros/multi reg,at least one corros/third degree mentioned
SH6z.00	Burn of multiple specified sites NOS
SH8..00	Burns as a percentage of body surface (BS) involved
SH80.00	Burn involving <10% of body surface (BS)
SH80000	Burn:<10% of body surface, 10%/unspec BS full thickness
SH80100	Corrosions involving less than 10% of body surface
SH80z00	Burn:<10% of body surface NOS
SH81.00	Burn involving 10-19% of body surface (BS)
SH81000	Burn: 10-14% of body surface,<10%/unsp BS full thickness
SH81100	Burn: 10-14% of body surface, 10-14% BS full thickness
SH81200	Burn: 15-19% of body surface,<10%/unsp BS full thickness
SH81300	Burn: 15-19% of body surface, 10-19% BS full thickness
SH81400	Corrosions involving 10-19% of body surface
SH81z00	Burn: 10-19% of body surface NOS
SH82.00	Burn involving 20-29% of body surface (BS)
SH82000	Burn: 20-29% of body surface,<10%/unspec BS full thickness
SH82100	Burn: 20-29% of body surface, 10-19% BS full thickness
SH82200	Burn: 20-29% of body surface, 20-29% BS full thickness
SH82300	Corrosions involving 20-29% of body surface
SH82z00	Burn: 20-29% of body surface NOS
SH83.00	Burn involving 30-39% of body surface (BS)
SH83000	Burn: 30-39% of body surface,<10%/unspec BS full thickness
SH83100	Burn: 30-39% of body surface, 10-19% BS full thickness
SH83200	Burn: 30-39% of body surface, 20-29% BS full thickness
SH83300	Burn: 30-39% of body surface, 30-39% BS full thickness
SH83400	Corrosions involving 30-39% of body surface
SH83z00	Burn: 30-39% of body surface NOS
SH84.00	Burn involving 40-49% of body surface (BS)
SH84000	Burn: 40-49% of body surface,<10%/unspec BS full thickness
SH84100	Burn: 40-49% of body surface, 10-19% BS full thickness
SH84200	Burn: 40-49% of body surface, 20-29% BS full thickness
SH84300	Burn: 40-49% of body surface, 30-39% BS full thickness
SH84400	Burn: 40-49% of body surface, 40-49% BS full thickness
SH84500	Corrosions involving 40-49% of body surface
SH84z00	Burn: 40-49% of body surface NOS
SH85.00	Burn involving 50-59% of body surface (BS)
SH85000	Burn: 50-59% of body surface,<10%/unspec BS full thickness
SH85100	Burn: 50-59% of body surface, 10-19% BS full thickness
SH85200	Burn: 50-59% of body surface, 20-29% BS full thickness
SH85300	Burn: 50-59% of body surface, 30-39% BS full thickness
SH85400	Burn: 50-59% of body surface, 40-49% BS full thickness
SH85500	Burn: 50-59% of body surface, 50-59% BS full thickness
SH85600	Corrosions involving 50-59% of body surface
SH85z00	Burn: 50-59% of body surface NOS
SH86.00	Burn involving 60-69% of body surface (BS)
SH86000	Burn: 60-69% of body surface,<10%/unspec BS full thickness
SH86100	Burn: 60-69% of body surface, 10-19% BS full thickness

SH86200	Burn: 60-69% of body surface, 20-29% BS full thickness
SH86300	Burn: 60-69% of body surface, 30-39% BS full thickness
SH86400	Burn: 60-69% of body surface, 40-49% BS full thickness
SH86500	Burn: 60-69% of body surface, 50-59% BS full thickness
SH86600	Burn: 60-69% of body surface, 60-69% BS full thickness
SH86700	Corrosions involving 60-69% of body surface
SH86z00	Burn: 60-69% of body surface NOS
SH87.00	Burn involving 70-79% of body surface (BS)
SH87000	Burn: 70-79% of body surface,<10%/unspec BS full thickness
SH87100	Burn: 70-79% of body surface, 10-19% BS full thickness
SH87200	Burn: 70-79% of body surface, 20-29% BS full thickness
SH87300	Burn: 70-79% of body surface, 30-39% BS full thickness
SH87400	Burn: 70-79% of body surface, 40-49% BS full thickness
SH87500	Burn: 70-79% of body surface, 50-59% BS full thickness
SH87600	Burn: 70-79% of body surface, 60-69% BS full thickness
SH87700	Burn: 70-79% of body surface, 70-79% BS full thickness
SH87800	Corrosions involving 70-79% of body surface
SH87z00	Burn: 70-79% of body surface NOS
SH88.00	Burn involving 80-89% of body surface (BS)
SH88000	Burn: 80-89% of body surface,<10%/unspec BS full thickness
SH88100	Burn: 80-89% of body surface, 10-19% =full thickness
SH88200	Burn: 80-89% of body surface, 20-29% BS full thickness
SH88300	Burn: 80-89% of body surface, 30-39% BS full thickness
SH88400	Burn: 80-89% of body surface, 40-49% BS full thickness
SH88500	Burn: 80-89% of body surface, 50-59% BS full thickness
SH88600	Burn: 80-89% of body surface, 60-69% BS full thickness
SH88700	Burn: 80-89% of body surface, 70-79% BS full thickness
SH88800	Burn: 80-89% of body surface, 80-89% BS full thickness
SH88900	Corrosions involving 80-89% of body surface
SH88z00	Burn: 80-89% of body surface, NOS
SH89.00	Burn involving >90% of body surface (BS)
SH89000	Burn: >90% of body surface, <10%/unspec BS full thickness
SH89100	Burn: >90% of body surface, 10-19% BS full thickness
SH89200	Burn: >90% of body surface, 20-29% BS full thickness
SH89300	Burn: >90% of body surface, 30-39% BS full thickness
SH89400	Burn: >90% of body surface, 40-49% BS full thickness
SH89500	Burn: >90% of body surface, 50-59% BS full thickness
SH89600	Burn: >90% of body surface, 60-69% BS full thickness
SH89700	Burn: >90% of body surface, 70-79% BS full thickness
SH89800	Burn: >90% of body surface, 80-89% BS full thickness
SH89900	Burn: >90% of body surface, >90% BS full thickness
SH89A00	Corrosions involving 90% or more of body surface
SH89z00	Burn: >90% of body surface NOS
SH8z.00	Burn as a percentage of body surface involved NOS
SH9..00	Burn - unspecified
SH90.00	Unspecified degree of burn NOS
SH91.00	Superficial burn NOS
SH91.11	First degree burn
SH92.00	Partial thickness burn NOS
SH92.11	Second degree burn

SH92000	Superficial partial thickness burn NOS
SH92100	Deep partial thickness burn NOS
SH93.00	Full thickness burn NOS
SH93.11	Third degree burn
SH94.00	Deep full thickness burn, without loss of body part, NOS
SH95.00	Deep full thickness burn, with loss of body part, NOS
SH9z.00	Burn - unspecified
SHz..00	Burns NOS
SK03.00	Post-traumatic wound infection NEC
SK1x200	Multiple open wounds of neck
SK1x500	Multiple open wounds of abdomen, lower back and pelvis
SK1x700	Multiple open wounds of forearm
SK1x800	Multiple open wounds of lower leg
SK1x900	Open wounds involv thorax with abdomen,lwr back and pelvis
SK1xA00	Open wounds invol multi regions of up limb(s) wth lw limb(s)
SP23.00	Operation wound disruption
SP23000	Operation wound dehiscence
SP23011	Postoperative wound breakdown
SP23100	Operation wound rupture
SP23200	Surgical wound necrosis
SP23300	Burst abdomen NEC
SP23400	Breakdown of totally implantable venous access device port
SP23z00	Operation wound disruption NOS
SP23z11	Delayed healing surgical wound
SP23z12	Healing delayed surgical wound
SP23z13	Wound surgical healing delayed
SP24300	Foreign body left in wound
SP25000	Postoperative stitch abscess
SP25100	Postoperative wound abscess
SP25500	Postoperative wound infection, unspecified
SP25600	Postoperative wound infection-deep
SP25700	Postoperative wound infection-superficial
SP25800	MRSA infection of postoperative wound
SP28.00	Postoperative wound sinus
SQ...00	Open wounds involving multiple body regions
Syu0200	[X]Open wound of other parts of head
Syu0A00	[X]Penetrating wound of orbit with or without foreign body
Syu1300	[X]Open wound of other parts of the neck
Syu1400	[X]Open wound of neck, part unspecified
Syu2500	[X]Open wound of other parts of thorax
Syu2600	[X]Open wound of thorax, part unspecified
Syu3200	[X]Open wound of oth and unspecif external genital organs
Syu3300	[X]Open wound oth & unspecif part abdomen/lower back/pelvis
Syu4100	[X]Open wound of oth & unspecif parts of should & upper arm
Syu5200	[X]Open wound of other parts of forearm
Syu6200	[X]Open wound of other parts of wrist and hand
Syu7100	[X]Open wound of other parts of hip and thigh
Syu8200	[X]Open wound of other parts of lower leg
Syu9200	[X]Open wound of other parts of foot
Syu9300	[X]Open wound of other parts of ankle and foot

SyuA100	[X]Open wounds involving other combinations of body regions
SyuBA00	[X]Open wound of unspecified body region
SyuD.00	[X]Burns and corrosions
SyuD000	[X]Burns of other parts of eye and adnexa
SyuD800	[X]Burns of mult reg, at least 1 burn of 3rd deg mentioned
SyuD900	[X]Corrosn multi reg, at least 1 corr of 3rd deg mentioned
SyuJ000	[X]Post-traumatic wound infection, not elsewhere classified
TG80000	Accidental burning/scalding caused by boiling water, unspec
TG80100	Accidental burning/scalding caused by boiling liquid, unspec
TG80200	Accidental burning or scalding caused by liquid metal
TG80300	Accidental burning or scalding caused by steam
TG80400	Accidental burning/scalding by boiling water from kettle
TG80500	Accidental burning/scalding by boiling water from saucepan
TG80600	Accidental burning or scalding caused by tea
TG80700	Accidental burning or scalding caused by coffee
TG80800	Accidental burning or scalding caused by chocolate
TG80900	Accidental burning or scalding caused by milk
TG80A00	Accidental burning/scalding caused by soup, stew or curries
TG80B00	Accidental burning or scalding caused by fat
TG80C00	Accidental burning or scalding caused by steam from kettle
TG80D00	Accidental burning or scalding by steam from car radiator
TG80y00	Accidental burning or scalding caused by other hot vapour
TG80z00	Accidental burning/scalding caused by hot liquid/vapour NOS
TGyz700	Accidental wound NOS
Z174M00	Pressure area care
Z174M11	PAC - Pressure area care
Z174N00	Wound care
Z174N11	WOUND TREATMENT
Z174N12	WOUND THERAPY
Z174O00	Post-surgical wound care
Z174O11	Post-operative wound care
Z174P00	Pressure sore care
Z174Q00	Skin ulcer care
Z1B..00	Dressing of skin or wound
Z1B..11	Application of dressing
Z1B..12	Dressing
Z1B1.00	Attention to dressing of skin
Z1B1100	Checking dressing of skin
Z1B1200	Checking dressing for leakage
Z1B1300	Change of dressing
Z1B1311	Repeating dressing
Z1B1312	Reapplying a fresh dressing
Z1B1313	Redressing wound
Z1B1400	Attention to dressing of burnt skin
Z1B2.00	Dressing of skin
Z1B2100	Dressing of burnt skin
Z1B2111	Burn dressing
Z1B2200	Covering burnt skin with plastic bag
Z1B2300	Dressing of skin ulcer
Z1B3.00	Dressing of pressure sore

Z1O6100	Exposing wound to air
Z1R2.00	Cleaning wound
Z1R2.11	Cleansing wound
Z1R2.12	Wound toilet
Z1R3.00	Debridement of skin
Z1R3.11	Debridement of wound of skin
Z1R3.12	Wound debridement
Z1R3.13	Wound debridement
Z1R3100	Debridement of wound with topical agent
Z1R3200	Surgical debridement of wound
Z1R4.00	Removal of slough from skin
Z1R4.11	Desloughing wound
Z1R5.00	Removal of contaminant from skin
ZA13E00	Insertion of quill in the nail bed
ZA14.00	Ablation of nail bed
ZA14.11	Ablation of nail matrix
ZA14100	Total ablation of nail matrix
ZA14200	Partial ablation of nail matrix
ZQ37.00	Wound assessment
ZQ38.00	Assessment of fluid loss from wound
ZQ38.11	Assessing seepage from wound
ZQ39.00	Pressure sore assessment
ZQ39.11	Decubitus ulcer assessment
ZQ39.12	Pressure ulcer assessment
ZQ39.13	Bed sore assessment
ZQ3A.00	Assessment of burn injuries
ZQ3A.11	Assessment of levels of burns
ZR1V.00	ASEPSIS score for wound infection
Zw02D00	[Q] Open fracture grade 1
Zw02E00	[Q] Open fracture grade 2
Zw02F00	[Q] Open fracture grade 3
Zw02G00	[Q] Open fracture grade 3A
Zw02H00	[Q] Open fracture grade 3B
Zw02J00	[Q] Open fracture grade 3C
ZX14.00	Damaging own wounds
ZX14300	Poking fingers into wound
ZX14400	Inserting objects into wound

Table S2: Patients' baseline characteristics.

	Abscess	Burn	Diabetic foot ulcer	Leg ulcer (arterial)	Leg ulcer (mixed)	Leg ulcer (unspecified)	Leg ulcer (venous)	Open wound	Pressure ulcer	Surgical wound	Trauma	Unspecified	All wounds
Mean age per patient (years)	46.0	47.1	62.3	57.4	67.0	52.6	70.9	53.4	76.1	55.4	52.4	55.9	57.9
Percentage male	42%	35%	51%	22%	57%	39%	48%	40%	40%	42%	41%	49%	44%
Percentage smoker	29%	24%	11%	13%	10%	21%	7%	18%	7%	19%	16%	22%	17%
Percentage ex-smoker	19%	19%	37%	32%	30%	21%	44%	29%	40%	29%	23%	28%	30%
Percentage non-smoker	51%	56%	52%	55%	60%	58%	48%	51%	40%	52%	59%	49%	52%
Percentage with unknown smoking status	1%	1%	0%	0%	0%	0%	1%	2%	13%	0%	2%	1%	1%
Mean body mass index per patient (kg/m^2)	29.7	27.9	30.9	28.8	32.3	27.6	31.5	29.6	24.5	28.3	27.8	28.9	29.1
Percentage with new wounds in the study period	79%	79%	61%	33%	50%	68%	59%	87%	80%	77%	84%	80%	73%
Percentage of all wounds with a recorded infection	27%	13%	78%	52%	47%	68%	41%	94%	13%	35%	29%	1%	40%

Table S3: Percentage of patients with a comorbidity in the year before the start of their wound. Those with diabetes are a subset of those with endocrinological comorbidities.

	Abscess	Burn	Diabetic foot ulcer	Leg ulcer (arterial)	Leg ulcer (mixed)	Leg ulcer (unspecified)	Leg ulcer (venous)	Open wound	Pressure ulcer	Surgical wound	Trauma	Unspecified	All wounds
Cardiovascular	36%	35%	70%	67%	83%	45%	78%	44%	53%	47%	38%	51%	53%
Dermatological	48%	52%	60%	44%	63%	50%	41%	51%	40%	51%	54%	45%	49%
Endocrinological	52%	56%	99%	78%	97%	18%	52%	69%	60%	63%	55%	57%	60%
Diabetes	50%	52%	100%	78%	97%	13%	37%	67%	60%	59%	51%	52%	57%
Gastroenterological	29%	32%	42%	67%	33%	29%	19%	34%	47%	37%	31%	35%	33%
Genito-urinary	21%	24%	28%	44%	33%	18%	19%	25%	27%	28%	24%	24%	24%
Immunological	7%	11%	13%	11%	17%	3%	11%	10%	7%	9%	8%	9%	9%
Malnutrition	0%	2%	2%	0%	0%	5%	4%	1%	13%	1%	2%	3%	3%
Musculoskeletal	41%	56%	62%	67%	63%	61%	59%	49%	73%	57%	49%	56%	56%
Neurological	16%	21%	24%	11%	27%	24%	33%	18%	67%	22%	17%	17%	24%
Oncological	14%	16%	25%	11%	20%	16%	7%	14%	27%	18%	15%	19%	16%
Ophthalmological	8%	15%	20%	0%	27%	13%	4%	11%	33%	13%	11%	10%	12%
Psychiatric	44%	40%	39%	33%	53%	47%	15%	35%	33%	35%	32%	35%	35%
Renal	8%	5%	30%	22%	33%	13%	30%	12%	40%	14%	9%	16%	18%
Respiratory	38%	44%	45%	56%	43%	42%	33%	36%	33%	38%	36%	37%	38%
Mean number of comorbidities per patient	3.7	4.1	5.7	6.0	5.7	3.9	4.0	4.1	5.6	4.3	3.8	4.2	4.1

Table S4: Healing rates in the study period.

	Abscess	Burn	Diabetic foot ulcer	Leg ulcer (arterial)	Leg ulcer (mixed)	Leg ulcer (unspecified)	Leg ulcer (venous)	Open wound	Pressure ulcer	Surgical wound	Trauma	Unspecified	All wounds
Wounds that healed in the study period	86%	84%	52%	47%	30%	55%	37%	90%	60%	85%	94%	85%	70%
New wounds that healed in the study period	85%	80%	60%	40%	27%	38%	56%	90%	75%	86%	94%	88%	76%
Existing wounds that healed in the study period	89%	96%	40%	50%	33%	92%	9%	90%	0%	80%	96%	73%	56%
Wounds that healed with no evidence of infection	92%	85%	57%	50%	34%	60%	50%	93%	62%	87%	95%	86%	77%
Wounds that healed with recorded evidence of infection	69%	75%	50%	45%	25%	52%	18%	89%	50%	81%	91%	38%	60%
Wounds that healed among smokers	84%	87%	33%	37%	28%	48%	25%	88%	33%	82%	96%	85%	64%
Wounds that healed among ex-smokers	90%	75%	53%	47%	32%	53%	39%	88%	67%	83%	95%	88%	70%
Wounds that healed among non-smokers	87%	87%	56%	50%	30%	58%	38%	93%	75%	88%	96%	84%	74%

Table S5: Percentage of patients who utilised resources in the study year. †Includes tissue viability nurses and diabetic nurse specialists.

	Abscess	Burn	Diabetic foot ulcer	Leg ulcer (arterial)	Leg ulcer (mixed)	Leg ulcer (unspecified)	Leg ulcer (venous)	Open wound	Pressure ulcer	Surgical wound	Trauma	Unspecified	All wounds
District/community nurse visits	37%	52%	96%	89%	93%	82%	85%	24%	60%	46%	15%	44%	38%
Healthcare assistant visits	32%	27%	93%	89%	99%	84%	81%	21%	40%	46%	15%	44%	36%
Practice nurse visits	96%	94%	94%	100%	100%	79%	96%	97%	93%	97%	98%	98%	97%
GP office visits	94%	79%	97%	100%	100%	100%	100%	90%	93%	82%	93%	62%	84%
Dressings	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Compression bandaging/ hosiery	2%	5%	15%	0%	100%	26%	93%	5%	0%	3%	0%	6%	6%
Prescribed analgesics/non-steroidal anti-inflammatories	22%	19%	57%	67%	87%	32%	81%	12%	53%	24%	10%	20%	21%
Prescribed antibiotics	82%	42%	92%	97%	90%	84%	81%	81%	67%	43%	37%	26%	50%
Hospital outpatient visits with a nurse	11%	32%	35%	22%	33%	16%	37%	8%	0%	18%	5%	31%	17%
Accident & emergency attendances	16%	18%	23%	22%	27%	5%	30%	8%	7%	8%	5%	4%	8%
Hospital admissions without surgery	7%	8%	4%	0%	3%	5%	7%	7%	13%	8%	5%	8%	7%
Hospital outpatient visits with a physician/surgeon	4%	0%	15%	22%	7%	8%	7%	4%	20%	8%	7%	1%	5%
GP home visits	2%	3%	2%	0%	10%	0%	11%	1%	13%	2%	1%	1%	2%
Diagnostic tests	1%	2%	3%	0%	10%	3%	0%	1%	0%	2%	1%	3%	2%
Ambulance services	1%	0%	3%	0%	3%	0%	4%	0%	0%	1%	0%	1%	1%
Hospital admissions with surgery	2%	2%	2%	0%	0%	0%	0%	0%	0%	6%	1%	0%	2%
Specialist nurse visits†	0%	0%	3%	0%	10%	0%	0%	0%	7%	1%	0%	1%	1%
Podiatrist visits	1%	0%	3%	33%	17%	0%	0%	1%	7%	1%	<1%	0%	1%
Day Cases	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	<1%	<1%