shock. Patients need vasopressor infusion to maintain adequate delivery of oxygen but it could have deleterious effects on skin perfusion and worsen the burn depth. This shock could result from the interplay of the initial hypovolemia and the release of multiple inflammatory mediators [1]. It has been shown that a low-dose of hydrocortisone could reduce the shock duration but the mechanisms involved remain unclear. We investigated the systemic genomic response after severe burn injuries and determine whether patterns of gene expression could be associated with a low dose of glucocorticoids.

Methods Thirty burn patients with over 30% of total body surface area were enrolled into a randomized double-blind clinical study. Fifteen patients were treated with a low dose of hydrocortisone and 15 patients were treated with placebo. Whole blood samples were collected after shock onset (S1) before any treatment, 1 day after treatment beginning (S2), and 120 hours and 168 hours after the burn injury (S3/S4). Blood samples of 13 healthy volunteers were collected. Pangenomic expression was evaluated with Affymetrix HG-U133plus 2.0 microarrays. Moderated *t* tests and *F* test were used to compare burn patients with controls and gene expression profiles between the two groups (B–H correction, $P < 0.05$).

Results Severe burn injury induced the deregulation of a considerable number of genes ($n > 2{,}200$ at S1) in comparison with controls with an increased number of deregulated genes over time. Within burn patients, more than 300 genes were deregulated by hydrocortisone over time. The treatment had a rapid effect on gene expression, 339 and 627 genes were differentially expressed at S2 and S3 respectively. However, the number of these genes decreased drastically at S4 (only 24 genes significant). The genes identified at S2 were mostly related to the decrease of growth, development and quantity of leukocytes but these biological processes were not found significant at S3, indicating that the action of glucocorticoid in the response to burn injury is short lived and time dependent.

Conclusion This study is an informative overview of the genomic responses after burn injuries. More importantly, it is the first study providing information about mechanisms involved in glucocorticoid's reduced shock duration after burn.

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P76

Care of Burns in Scotland: 3-year data from the Managed Clinical Network National Registry

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Introduction The Managed Clinical Network for Care of Burns in Scotland (COBIS) was launched in April 2007. Primary aims included establishing and maintaining a registry of complex burn injury in Scotland and setting mechanisms to regularly audit outcome of burn treatment against nationally agreed standards of care. On behalf of COBIS, we present 3-year incidence and mortality data of Scottish patients admitted with a complex burn injury in this abstract.

Methods From January 2010 onwards, data were prospectively collected for all patients in Scotland with complex burn injury admitted to Scottish burns units. Data collection was initially on a paper *pro forma*, but subsequently evolved into a web-based audit data capture system to securely link hospital sites involved in the delivery of care of complex burns. Data collected included extent and mechanism of burn, presence of airway burn or smoke inhalational injury, comorbidities, complications, length of stay, interventions and mortality. Quality, completeness and consistency of data collection are audited with feedback to the individual units.

Results In a population of approximately 5.3 million, the annual incidence of complex burn injury is 499 to 537 (9 to 10 per 100,000). The incidence of a major burn is 5% of burn admissions. The hospital mortality from a burn is 1 to 2.2%. See Table 1.

Table 1 (abstract P76). Numbers of complex burns in Scotland 2010 to 2012

	2010	2011	2012
Adult	304	392	399
Paediatric	195	185	138
Adult >15%	27	28	26
Paediatric >15%	0	2	4
Mortality	5	7	13

Conclusion From these data, Scotland now has comprehensive national figures for complex burn injury. This allows for benchmarking against other international indices, few of which provide comprehensive data. COBIS data can now also be correlated with other mortality data sources. As data quality improves, detailed analysis of mortality data will allow COBIS to identify contributing issues affecting burns patients. Some issues identified already are that patients with burns often die soon after their discharge from hospital of other related and unrelated causes. Subsequent analysis of this will allow COBIS to identify and address issues that may be contributing to these statistics.

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Low socioeconomic status, ethnicity and geographical location confers high risk of significant accidental burns injuries in London

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Introduction The majority of burns injuries are considered accidental, although previous studies have identified demographic factors associated with higher risk of burns such as socioeconomic deprivation [1] and being from ethnic minority groups [2]. This study aims to identify population subgroups in London at high risk of burns injuries requiring admission to a burns centre through geographic mapping and socioeconomic statistics.

Methods Records of all paediatric and adult inpatients admitted to the burns centre at Chelsea and Westminster Hospital were retrospectively reviewed for age, ethnic group and deprivation score of residence, as measured by the English Index of Multiple Deprivation 2010. Corresponding population data for London were obtained.

Results In total, 2,195 patients from London were admitted between January 2009 and August 2013, with 1,963 (89.4%) classified as having accidental injuries. A total 1,725 (87.8%) of accidental burn injuries occurred in the patients' own homes. Patients from ethnic minorities have the highest rate of burn injury at 7.1 per 100,000 population per annum ($P < 0.0001$). Patients below the median for socioeconomic deprivation in London are more likely to suffer burn injuries ($P < 0.0001$). Patients from the most deprived quartile are more likely to suffer burns injuries of >10% TBSA ($P = 0.04$), and have a trend towards higher rates of ICU admission ($P = 0.144$). Domestic accidental burns were mapped to their respective administrative wards, and the rate of burns per 100,000 was calculated and divided into quintiles. The areas with the top quintile of burn injury rate, of up to 18.8 per 100,000 population per year, were almost four times the national average.

Conclusion Ethnicity, socioeconomic deprivation and geographical location appear to be risk factors for burn injuries. Identifying such groups may allow the development of targeted preventative strategies.

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Effectiveness of noncontrast abdominal multidetector CT for evaluating the patient with renal insufficiency in the emergency department

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Introduction Contrast-enhanced abdominal multidetector CT (MDCT) is an important and accurate diagnostic approach for acute abdominal