available for 5 patients leaving a final cohort of 44 patients to analyse. Average age was 33 years (range 17–67). Median age was 27 with the cohort predominantly lying in the 17–29 year category (52%).

Results showed good compliance with the annual influenza vaccine in those over 40 (>80%). However, compliance for the 17–29 category and 30–39 categories were 37.5% and 42.8%, respectively. The improved compliance in those >40 was not seen with the 5-yearly pneumococcal vaccine. Compliance was worse in all age groups compared to the annual flu vaccine with only 23% compliance overall. However, when looking at those who had received a single dose of PPV23, the numbers improved to nearly 60%.

Compliance with the SARS-CoV2 vaccination was highest at 61.3%. However, rates were lower in the 17–29 and 30–39 age groups in keeping with previous trends. Only 34.1% of patients had full hepatitis B cover. Again, trends in compliance mirrored previous with poorer rates in those under 40.

Assessing compliance for the remainder of the standards was more challenging given that we could not confirm retrospectively how many of our cohort had received their primary vaccinations in other parts of the UK, thought to be around half. However, most of the cohort had not received any additional vaccines suggesting high non-compliance regardless.

This review looked at data from 2020 and likely reflects the impact of the SARS-CoV2, whether positive or negative. The reduced compliance in 5-yearly pneumococcal compared to flu suggest better health-professional education is needed; if patients are attending for their annual flu vaccine, there is ample opportunity to administer other vaccines. The vaccination rate for our patient group is comparable to national rates by ethnicity although lower than the national average for age.

Vaccination rates for the SCD population of South Wales are not adequate. Better education and engagement is needed.

BSH23-PO108 | Incidence rates for acute complications in HbSS East London newborn sickle cell cohort (ELNSCS)

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Aim: To analyse the rates of acute complications in sickle cell disease (SCD) treated in the NHS over the past 30 years, compared with historical data.

Background: Management of SCD has evolved slowly over the past 30 years, with improvements in NHS care pathways and introduction of hydroxyurea (HU) and chronic transfusion therapy, simple (ST) or exchange (ET). The CSSD study analysed rates of complications in USA patients during the period 1979–1986, before these treatments were in widespread use.

Methods: The ongoing ELNSCS includes patients born in the London Boroughs of Hackney and Tower Hamlets, diagnosed by universal newborn screening programmes from 1983, and treated in our centre since diagnosis. All clinical data has been entered in a bespoke database and validated. Follow-up was from birth until the end of 2018. Subjects were censored on moving to another clinic, BMT, or at death. We calculated incidence rates (IR) per 100 patient year follow-up (+/−95% Confidence interval [CI]) and compared these with published rates from the CSSD study.

Results: Of 404 cohort subjects, 267 (66.1%) were HbSS with 3733 patient years of follow-up. Median age was 14.0 (range 3 months to 35) years. 21.3% were treated with HU, 21.5% with ST, 5.4% with manual ET and 9.8% with automated ET. In the paediatric age range (0–19 years) we confirmed reduced rates of mortality, acute ischaemic stroke and pneumococcal sepsis compared to the CSSD study. Some complications (dactylitis, aplastic crisis, splenic sequestration, hepatic sequestration, girdle syndrome) were only seen in the paediatric population. Rates of acute pain, priapism, acute ischaemic stroke and mortality progressively increased in the adult population, and pain events were more frequent in adults compared to the CSSD study.

Conclusion: Improvements in outcomes are seen during in childhood but not sustained in the adult population. Although uptake of HU has been suboptimal during follow-up, and increased uptake may have long-term benefits, there remains a large unmet need justifying development of effective new therapies to prevent acute complications of SCD.

BSH23-PO109 | Using wearables and web-based self-reporting to explore deep sleep and patient-reported-outcome correlations in sickle cell disease

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Background and Aim: Patients with Sickle Cell Disease (SCD) and their clinicians flag sleep quality as an important factor in daily well-being and the potential onset of a pain crisis. Previous relationships between sleep quality and both acute and chronic pain, as well as quality of life (QoL), overall physical health, functional disability, and clinical depression, have been identified. Nonetheless, there is limited data on the detailed impacts of specific sleep metrics in SCD. This research investigated associations between real-time sleep metrics and patient-reported outcomes, to measure their impact upon QoL.

Methods: A CE-marked wearable monitoring device was provided to 85 participants with SCD and worn daily, automatically recording biometrics including sleep quality and heart rate. Participants manually self-reported EQ-5D-5L scores via a digital patient-reported outcomes (PRO) portal. Data for a final cohort of 54 patients (64%) who had both recorded sleep and EQ-5D-5L scores was analysed, and stratified into low, average, or high categories based on their sleep metric means compared to cohort terciles. Mean EQ-5D-5L scores were compared across these categories, and direct correlation analysis was performed to identify any links between sleep metrics and QoL.

Results: The mean hours of sleep per night was 7h10m (SD 56 m; taken over mean 109 days, SD 92 days). The mean proportion of deep sleep was 49% (SD 12%).

Of the wearable-captured sleep metrics analysed, statistically significant differences in EQ-5D-5L were seen only at different 'deep sleep' levels. Analysis of the associations between patients' mean percentage of deep sleep (as a proportion of total sleep duration) and their mean EQ-5D-5L scores found that patients within the lower range (0%–39%) had statistically significantly higher mean EQ-5D-5L scores than those in the high ranges (50%–83%) of deep sleep ($p = 0.030$). Moreover, direct correlation analysis identified a statistically significant association between increasing deep sleep levels and both decreasing haemoglobin levels ($p = 0.019$) and increasing pain scores ($p = 0.016$).

Conclusions: Our data identified an association between the amount of deep sleep patients with SCD have and both their EQ-5D-5L and pain scores, suggesting longer periods of deep sleep may be linked to lower patient-perceived well-being.

Further investigation is required to explore potential causal or confounding relationships, such as medication, in order to establish whether poorer QoL may see patients enter longer periods of deep sleep, or whether this widespread excess in deep sleep itself exerts an impact upon patient QoL in SCD.

BSH23-PO11 | Scoping review: The impact of ethnicity on acute myeloid Leukaemia (AML) outcomes and reporting consistency

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Black, Asian and other minority ethnic (BAME) patients experience significantly worse AML survival outcomes compared to Caucasian counterparts globally. The National Institute for Health and Care Research (NIHR) states that within haematology research there is a 'neglect impacting Black African, Asian and Caribbean patients'. This lack of research affects all aspects of AML-related healthcare, from guidelines influencing referral, investigative procedures (scans and biopsies), management decisions including end-of-life care and pain management.

A literature search was undertaken via Medline, the search terms included were; 'AML, Male, Demographic data, population, ethnicity' with additional limits being a 'phase 3 trial, English language, in the last 5 years'.

A total of 207 titles were found via Medline literature search, after duplicates were extracted 84 abstracts were reviewed and a total of 62 full texts were included in this rapid review.

Of the 62 papers: (Trends in mortality (23), research focus (2), racism (9), importance of demographic data in research (3), socio-economic factors (9), genetic differences (4), personalised care (10), and genetic mutation profiles (2)).

It should be noted that the proportion of UK AML research papers including racial demographic data was (5/176).

Investigation of the causes of this disparity in survival outcomes shows that the main barriers in BAME groups include; language and cultural barriers to research participation, job sector employment of ethnic minorities, and lack of trust in research institutions due to historical mistreatment. This causes a wider cycle of ethnic exclusion causing systemic racism within the healthcare system perpetuating further lack of inclusion and mistrust.

Other outcomes specific to healthcare and differential clinical treatment of BAME groups include; later presentation of symptoms in BAME patients, a higher rate of pre-existing comorbidities complicating diagnosis and treatment and significant barriers black males experience in receiving a tertiary referral. A shorter transformation time from MDS-SLD (myelodysplastic syndrome with single lineage dysplasia) to sAML (secondary acute myeloid leukaemia) is seen in black patients; a very aggressive form of AML with poor prognosis. Black patients also have a higher prevalence of the CBF-AML (core-binding factor) karyotype, associated with poorer survival. Lastly the lack of ethnic bone marrow donors, and the higher rate of graft rejection in BAME groups (16% higher) significantly affects survival outcome.

In light of the disparities identified in the literature review ethnicity needs to be consistently reported in UK trials and further discussion needs to be had surrounding ethnic survival outcomes in haematology.

BSH23-PO110 | Mortality and clinical complications among patients with sickle cell disease with recurrent VOCs in England

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Background: Sickle cell disease (SCD) is characterised by vaso-occlusive crises (VOCs) and a progressive clinical course leading to end-organ damage and early mortality. SCD complications are multifactorial and driven by vaso-occlusion, haemolysis, and vasculopathy associated with the disease.