SOUTH AFRICAN PAEDIATRIC ASSOCIATION CONFERENCE 2023

ABSTRACTS OF THE SAPA CONFERENCE THE CAPITAL ON THE PARK, SANDTON 8 - 10 SEPTEMBER 2023

ORAL PRESENTATIONS

Paediatric liver transplantation: WITS transplant data 2020

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Introduction. Between 2004 and 2020, the Wits Transplant Unit performed 247 paediatric liver transplants. In 2012, deceased donor organ shortages necessitated the implementation of routine splitting of suitable deceased donor grafts and a living donor liver transplant programme.
Objectives. To review the outcomes of the Wits Transplant Unit paediatric liver transplant programme.
Methods. Data were accessed from the paediatric liver transplant database approved by the University of the Witwatersrand Human Research Ethics Committee (Medical) (ref. no. M190749).
Results. Of the 247 transplanted children, 61.5% (*n*=152/247) occurred in the last five years and 56.6% (*n*=86/152) were from living donors. Of the deceased donor grafts (*N*=66), 32 were whole liver, 30 were split-liver and four were reduced-size. Compared with previous years, there were fewer national referrals for children with acute liver failure in 2020. Unadjusted one-month, one-year, and five-year recipient survival (as percent with 95% confidence interval) was 86% (76 – 92), 75% (64 – 84), and 73% (60 – 82), respectively. Median length of hospital stays at time of transplant decreased from 31 days in 2016 to 17 days in 2020. While 50% of children undergo liver transplantation within six months of being waitlisted, 20% died while awaiting transplantation in 2019.
Conclusion. Paediatric liver transplant outcomes for the Wits Transplant Unit are comparable to those achieved internationally. Capacity to transplant children with ESLD remains limited by deceased donor organ shortages. Efforts remain ongoing to increase access to liver transplantation in South Africa through living liver donation, utilising split donor grafts, and increasing the proportion of ABO-incompatible transplants.

Incidence, aetiology and short-term outcomes of extreme hyperbilirubinaemia in term-infants in the West Metro area of Cape Town

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Introduction. Extreme levels of bilirubin in the newborn is a major cause of lifelong neurodevelopmental impairment, which places a financial burden on healthcare resources and caregivers.
Objective. To determine the incidence, aetiology and short term outcomes of extreme hyperbilirubinaemia in term infants born in a resource limited setting.
Methods. This is a retrospective observational study looking at term neonates with a birthweight ≥2 500 g, born in the West Metro referral area of Cape Town, South Africa (SA), between 1 January 2019 and 31 December 2020, who were exposed to a serum bilirubin level ≥430 µmol/L in the first week of life and received care in the public health system.
Results. Extreme hyperbilirubinaemia occurred in 59 term infants. The incidence was 74 cases per 100 000 live births equating to 1 case in every 1 345 live births. The cause of hyperbilirubinaemia was identified in 51 of the cases (86%), the most common being ABO-incompatibility (*n*=31/51, 61%), followed by glucose-6-phosphate dehydrogenase deficiency (*n*=11/51, 22%). Twelve infants (20%) underwent an exchange transfusion. Six infants were encephalopathic. Forty-seven infants (80%) were readmitted after initial post-natal discharge, with a mean age of readmission of 112.5 (SD 31.3) hours old.
Conclusion. The incidence of extreme hyperbilirubinaemia in the Western Cape, SA is higher than in high income settings. Further work should focus on early detection of significant hyperbilirubinaemia to prevent neurological complications caused by bilirubin toxicity.

Clinical features and short-term outcomes of children initiated on HFNC or CPAP at a South African district hospital emergency centre

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Introduction. Non-invasive respiratory support, and especially high flow nasal cannula oxygen (HFNC), is increasingly initiated in paediatric emergency centres. There is limited data on short term outcomes in the South African setting.
Objective. To describe clinical features of paediatric patients initiated on HFNC and continuous positive airway pressure (CPAP) at a district level emergency centre (EC) and their short-term outcomes following transfer.
Methods. This is a retrospective observational study of patients aged 10 days - 12 years initiated on HFNC or CPAP in the emergency centre of Khayelitsha District Hospital and transferred to emergency care at Tygerberg Hospital, between August 2021 and July 2022.
Results. 64 paediatric patients were initiated on CPAP and 61 on HFNC were included. CPAP patients were younger (median age 3m (IQR 1.7 – 6.5) v. 12.7m (IQR 6.6 – 23.5), p<0.001). Other demographics, vital signs, hypoxaemia, clinical respiratory score (CRS) and diagnoses were similar between groups. The most common diagnosis was pneumonia (88%). Support was de-escalated for 21% and escalated for 9% within 24 hours of arrival. Hospital stay was longer for CPAP (6 days; IQR 4 – 10 v. 5, IQR 3 – 7 days, p=0.04). 19 patients were admitted to PICU, 7 required intubation and 2 died.
Conclusion. Increasing availability of resources at some district hospitals in South Africa have enabled initiation of HFNC and CPAP prior to transfer to higher care facilities. More research is needed to guide clinicians on patient selection for respiratory support and high care transfer.

The burden of poisoning in children hospitalised at a tertiary-level hospital in South Africa

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Introduction. Globally, childhood poisoning accounts for a significant proportion of emergency department admissions. There is a paucity of data from low- and middle-income countries on poisoning in children.
Objective. To describe the incidence, case fatality rate, and types of poisoning in children admitted to a tertiary-level hospital in Johannesburg, South Africa.
Methods. This was a retrospective descriptive study of children hospitalised with poisoning from January 2016 to December 2021, at Chris Hani Baragwanath Academic Hospital. Children were identified from a discharge summary database using ICD-10 codes that describe poisoning. Trends in the incidence of poison exposure were reported. Using logistic regression, we determined predictors of mortality.
Results. Of the 60 901 admissions during the study period, 2 652 (4.4%) children were diagnosed with poisoning. Most (71.3%) children were <5 years of age, and 55% were male. The incidence of poisoning per 100 000 was highest at 108 (95% CI 104.3 – 112.6) in 2019 and decreased to 77 (95% CI 73.9 – 80.7) in 2020 and 59.6 (95% CI 56.3 – 62.5) in 2021.The main causes of poisoning were organic solvents (37.6%), medications (32.9%), and pesticides (17.5%). The overall case fatality rate was 2.1%. In multivariate analysis, poisoning secondary to pesticides (aOR, 13.9 95% CI 4.52 – 60.8; p=< 0.001), and unspecified agents (aOR, 95% 12.7 CI 3.27 – 62.8; p<0.001) were more likely to cause death.
Conclusion. We report a high incidence of poisoning in children which was lower during the COVID-19 pandemic. Public health measures to reduce the burden of organic solvents, medications and pesticide poisoning are urgently warranted.

Clinical effects of activating pressurised meter-dose inhalers with Easy Squeezy in children below the age of 12

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Introduction. Easy Squeezy (ES) is a sleeve attachment device that reduces the activation force by 3 times. A usability analysis revealed that children preferred using the ES device to activate their pressurised meter-dose inhalers (pMDI).

Objective. The current study examines the clinical effects of using ES by measuring the users' lung function. This study also aims to quantify the quality of life (QoL) of the participants using ES.
Methods. In this cross-over study, we recruited 65 children, between 5 and 12 years of age, with asthma and used a pMDI for more than 3 months. Participants were randomised into ES and pMDI groups and their baseline FEV1, FEV1/FVC ratio, and percentage difference pre- and post-bronchodilator FEV1 (%Diff FEV1). After 6 weeks the participants returned to the clinic and their lung function was measured. Along with that, their QoL data were captured using the Paediatric Asthma Quality of Life Questionnaire (PAQLQ), and asthma control was assessed using Childhood Asthma Control Test (C-ACT). For the following 6 weeks, participants using ES were crossed over into the pMDI group and vice-versa. After these 6 weeks, participants' data were collected again. Data between these two groups were statistically compared using the Mann-Whitney *U* test with the statistical significance criteria $p<0.05$.
Results. The bronchodilator reversibility was significantly lower in the ES group. The differences in lung function from previous measurements was significantly better in ES. Asthma was controlled better in the ES group.
Conclusion. The Easy Squeezy improves lung function and aids in controlling asthma better.

Feeding practices and growth outcomes of 18-month-old children with exposure to maternal HIV and placental insufficiency in South-West Tshwane: a community-based cross-sectional study

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Introduction. Nutrition plays a critical role in child growth and development. Children who are HIV-exposed-and-uninfected (CHEU) and those who had fetal growth restriction due to placental insufficiency are both regarded as high-risk populations. Suboptimal feeding practices may exacerbate the risk of poor growth in these populations. We investigated the feeding practices and growth outcomes of children with in-*utero* HIV exposure and abnormal umbilical artery resistance indices (UmA-RI), indicating placental insufficiency.
Objective. To determine and compare feeding practices and growth outcomes of children aged 18 months, with and without in-*utero* HIV exposure and abnormal UmA-RI.
Methods. A descriptive cross-sectional study was conducted on 264 children: grouped into four subgroups based on HIV exposure and normal/abnormal UmA-RI, using available pregnancy and birth information. The World Health Organization (WHO) standard procedures were followed for anthropometric measurements and *z*-score calculations, and a standardized questionnaire based on WHO was used for feeding practices.
Results. CHEU with abnormal UmA-RI (n=14) were stopped breastfeeding earlier (median (interquartile range (IQR)) 4.0 months (1.0, 15.8) v. 13.0 months (6.0 – 16.0); p=0.0002) and were introduced to protein-rich foods later (median (IQR) 12.0 months (9.0 – 12.0) v. 9.0 months (7.0 – 12.0); p=0.05) compared with children who are HIV-unexposed-and-uninfected (CHUU) with normal UmA-RI (n=181). CHEU with abnormal UmA-RI had lower length-for-age *z*-scores (-1.40±1.40 v. -0.04±1.31; p=0.001), weight-for-age *z*-scores (-0.60±0.96 v. 0.04±1.16; p=0.02) and head-circumference-for-age *z*-scores (0.42±0.66 v. 0.90±1.15; p=0.04) compared to CHUU with normal UmA-RI.
Conclusion. Early cessation of breastfeeding, late introduction of protein-rich foods, and exposure to both maternal HIV infection and placental insufficiency are associated with stunting and underweight.

Laryngomalacia: When to refer for surgery?

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Introduction. Laryngomalacia (LM) is the most common cause of stridor in infants, presenting shortly after birth with variable severity. The noisy breathing is created by shortened aryepiglottic folds and excess arytenoid mucosa that manifests as inspiratory stridor. In majority of children, treatment is conservative with a few symptomatic cases receiving reflux medication. In 20% of children with severe laryngomalacia, surgical intervention is necessary to alleviate symptoms. Knowing which children need more than medical management is key to best practice. Which children will benefit from otolaryngology (ENT) referral, and what are the factors that determine the need for supraglottoplasty?
Objective. To determine the clinical factors in symptomatic children with laryngomalacia that led up to supraglottoplasty, and response to therapy thereof. To identify those children who require a tracheostomy and whether supraglottoplasty was still indicated to decannulate (remove trachesotomy).
Methods. A retrospective review of medical folders for all children who underwent supraglottoplasty, by a single surgeon in South Africa over 7 years.
Results. 42 patients were included in this study: n=40/42 underwent supraglottoplasty (SGP), n=34/42 underwent SGP alone, n=2/42 required a tracheostomy post SGP, n=8/42 underwent tracheostomy, n=6/42 required a tracheostomy

initially for LM, *n*=4/6 required a SGP to aid decannulation, and *n*=34/42 underwent SGP alone, without requiring a tracheostomy. One patient required a revision SGP after some years. Of those that underwent SGP primarily, *n*=30/34 (88%) patients had marked resolution of stridor, *n*=32/34 (94%) had improvement in weight gain post SGP and *n*=32/34 (94%) of parents found a subjective improvement in their child post-SGP. No perioperative complications were reported for patients undergoing SGP.
Conclusion. A majority of cases of with laryngomalacia can be treated conservatively. However, in select cases with failure to thrive; worsening ongoing stridor; poor response to anti-reflux treatment, etc, a referral to an ENT surgeon is necessary to consider corrective surgery and improve the clinical course of these children who stand to benefit greatly from surgical intervention.

Prevalence and pattern of neurodevelopmental delay in preschoolers with congenital heart disease at Pietersburg paediatric cardiology clinic

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Introduction. Congenital heart disease (CHD) is one of the most common major birth defects. Survivors' life spans are increasing hence a need to also focus on quality of life, including neurodevelopment. This study is the first evaluation of the prevalence and pattern of neurodevelopmental delay (ND) in preschoolers with CHD in Limpopo.
Objective. To measure the prevalence of ND and assess the order in which neurodevelopmental domains are affected in preschoolers with congenital heart disease, attending Pietersburg paediatric cardiology clinic.
Methods. A quantitative cross-sectional study was conducted at Pietersburg cardiology clinic between 01 August and 31 October 2022. Neurodevelopment domains were assessed in 3 - 5 year olds with CHD, using the Early Screening Inventory 3rd edition in a parent child interview. Prevalence was calculated as a percentage. A chi-squared test was used to test if the difference in prevalence between this population and known norms was significant. One-way analysis of variance were used to test patterns.
Results. 39 participants with a median age of 4 years 3 months were included. There was significant ND compared to known norms. (p=0.0031) Prevalence was 30,77%. Delay was global in the younger and affected cognition more than motor in the older children. (p=0.04)
Conclusion. ND is significantly prevalent in preschoolers with CHD at Pietersburg paediatric cardiology clinic. When younger, it is more global but as they grow the cognitive component becomes more apparent than the motor. Early screening and intervention is important to improve outcomes.

Coping with paediatric end-of-life care: Insights from South African paediatric registrars

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Introduction. The provision of end-of-life care and experience of the death of a paediatric patient is challenging.
Objective. This study aimed to investigate the experiences and coping strategies of South African (SA) paediatric registrars when providing end-of-life care and experiencing the death of a patient.
Methods. A cross-sectional electronic survey conducted among paediatric registrars from eight universities from March - June 2021.
Results. 101 out of 320 registrars (32%) responded. They experienced high exposure to paediatric deaths (mean 14 deaths per year, range 2 - 50). 38% (*n*=37/98) did not feel prepared to cope with the death of a child. 40% (*n*=39/96) had considered leaving the specialty due to difficulties with coping with paediatric death. There was no significant difference in perceived ability to cope with a death when comparing registrar demographics, experience, or prior training. Overall, coping strategies were largely adaptive. Acceptance, religion and self-distraction were the most commonly used coping sub facets. Overtly maladaptive coping strategies scored low. The mode of death and circumstances surrounding death might impact on the registrar's ability to cope. Debriefing was inconsistently used to support staff following paediatric deaths. Most participants indicated that holistic paediatric end-of-life care training would be valuable.
Conclusion. SA paediatric registrars experience considerably more deaths than high income country counterparts, in more challenging socioeconomic conditions. Paediatric training facilities should provide formal end-of-life care training and adequate support following paediatric deaths in order to protect registrars' mental wellbeing and improve end-of-life care for paediatric patients.

Knowledge, attitudes and perceptions of breaking bad news among paediatric doctors in a South African hospital

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Introduction. Breaking bad news (BBN) is a difficult and regular task for paediatric doctors. Adequate training and competence in BBN have a positive impact on patient interactions and clinician experience. The aim of the study was to assess the knowledge regarding, and the attitudes and perceptions towards BBN amongst doctors working in paediatrics at Dora Nginza Hospital (DNH).
Objective. To assess the knowledge regarding and attitudes and perceptions of paediatric doctors at DNH towards BBN; to identify the barriers to BBN and the aspects needing improvement in BBN at DNH paediatric department.

Methods. A mixed-methods knowledge, attitudes and perceptions study using a validated self-administered questionnaire was conducted at the paediatric department at DNH, a regional teaching hospital. The survey population included junior doctors to specialist paediatricians.
Results. Of the 42 participants in the study, 88% had received training in BBN, mostly at an undergraduate level. Training in BBN had a significant impact on reported confidence (p=0.039); however, 76% of participants did not feel adequately prepared when BBN to a paediatric patient. Sadness with BBN was more prevalent in junior doctors (p=0.034) who reported inadequate debriefing support from senior colleagues. Language differences and time constraints were the most significant barriers to BBN.
Conclusion. DNH paediatric doctors have deficiencies in their postgraduate training in BBN and their communication with the paediatric patient. Training and years of experience has a positive impact on confidence with BBN and on the psychological impact of BBN. Postgraduate training and tackling BBN barriers are recommended to improve communication around this process.

The benefits of prophylaxis with low- to moderate-dose factor VIII in the treatment of severe haemophilia A in Limpopo, South Africa

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Introduction. Paediatric patients attending the haemophilia treatment centre in Pietersburg Hospital are treated with episodic or prophylactic treatment depending on their needs and circumstances.
Objective. To describe and compare annualised bleeding rates and factor VIII consumption between participants on episodic and prophylactic treatment groups.
Methods. A retrospective chart review was conducted over a period of five years. Study participants included 18 on episodic treatment, 6 on prophylactic treatment and 2 on bimodal treatment, where either one of the two regimens was used at some time during the period of the study. Data was collected and captured onto Microsoft Excel and analysed using descriptive statistics and comparative data using STATA version 11.
Results. Compared with the episodic group, participants in the prophylactic group had a substantial reduction in annualised bleeding rates per patient with a median of 4 v. 6 while being treated with low- to moderate-dose with factor VIII infusion of 17 - 39.6 units/kg/week.
Conclusion. This study shows that the treatment of paediatric patients living with severe haemophilia A using low- to moderate -dose prophylaxis may be a better option in developing countries with limited economic resources. The cost is higher, but the outcome is significantly better.

POSTER PRESENTATIONS

Trends in bloodstream isolates and their antimicrobial susceptibilities in a tertiary level neonatal unit in South Africa

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Introduction. Neonatal sepsis causes significant mortality and morbidity globally. Causative organisms may change within the same setting over time.
Objective. An observational study was conducted to describe the changing aetiology and resistance patterns of bloodstream infections in the neonatal unit at Dora Nginza Hospital (DNH).
Methods. The hospital records and laboratory results of neonates admitted at DNH from January - December 2020, were scrutinised to assess demographic data, number of positive blood cultures, microbial organisms isolated and antimicrobial sensitivity of the pathogens. These were compared with the unit's dataset collected from January - December 2017.
Results. In 2020, 3 542 blood cultures were sampled, and 325 (9.2%) were positive, with 232 (71.4%) cultures from 227 patients considered pathogenic. In 2020, there were 54 (23%) gram-positive organisms, 160 (69%) gram-negative organisms and 18 (8%) fungal organisms cultured, compared with 36 (33%), 69 (64%) and 3 (3%), respectively in 2017. The most common gram-positive organism cultured in 2020 was *Enterococcus faecium*, while in 2017, *Staphylococcus aureus* was the most common. The percentages of methicillin-resistant *Staphylococcus aureus* cultured were similar in 2020 and 2017. *Acinetobacter baumannii* was the predominant gram-negative organism in 2020, but *Klebsiella pneumoniae* was the most common gram-negative organism in 2017. All *Klebsiella pneumoniae* isolates in both 2017 and 2020 were sensitive to Amikacin. There was no colistin resistance in 2017, but 22% of *Actinobacter baumanii* cultures were resistant to colistin in 2020.
Conclusion. The proportion of gram-negative organisms increased significantly from 2017 to 2020. The emergence of colistin resistance was noted in 2020.

Frequency of abnormal CSF findings in children presenting with fever-associated seizures at Dora Nginza Hospital, Eastern Cape

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Introduction. Fever-associated seizures are a frequent occurrence in paediatrics; the diagnosis often febrile seizures. However, fever-associated seizures can be the presenting symptom of bacterial meningitis, and lumbar puncture may need to be performed to exclude it. This study aimed to measure the frequency of abnormal CSF results in children presenting with fever-associated seizures.

Objective. To determine the number of children presenting with fever-associated seizures who had lumbar puncture performed, describe the resulting CSF findings, and determine factors associated with abnormal CSF results.
Methods. This was a cross-sectional descriptive study using retrospective chart review. It included all patients aged 6 months - 6 years presenting to the paediatric emergency department with fever-associated seizures between 1 January - 31 December 2018. Clinical information was collected from patient files, and CSF findings were obtained from NHLS.
Results: There were 256 patients, 166 (64.8%) male and 90 (35.2%) female, with a mean age of 28.2 months. 154 (64%) had lumbar puncture performed; 131 (85%) had normal results, 22 (14%) had results suggestive of meningitis with no positive culture, 1 (1%) had bacterial meningitis. The mean temperature was significantly higher in the group with abnormal CSF results (p=0.02), and clinical signs of meningeal irritation were more frequent in the group with normal CSF results (p=0.04).
Conclusion. The majority of children who have lumbar puncture performed for fever-associated seizures have normal CSF results. The higher the patient temperature, the higher the likelihood of having abnormal CSF results, especially with temperatures ≥39 °C. Clinical signs of meningeal irritation are not a reliable predictor of CSF abnormality.

Determinants of mortality in children younger than five years admitted with severe acute malnutrition to three hospitals in Vhembe district, Limpopo

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Introduction. In 2014, one-third of child deaths occurring in South African hospitals were attributed to severe acute malnutrition (SAM). This study sought to determine the demographic, family, socioeconomic, clinical, laboratory and case-management factors contributing to mortality in severely malnourished children younger than 5 years admitted to three hospitals in Limpopo, South Africa.
Objective. To describe the risk factors for death in children with SAM.
Methods. A retrospective record review of children aged 6 - 59 months admitted with SAM over 30 months from Jan 2016 - Jun 2018 was conducted. Bivariable and multivariable regression analyses of determinants of mortality were undertaken.
Results. Two hundred and forty-five children with SAM were identified. Their median (interquartile (IQR)) age was 14 (10 – 18) months. The overall mortality was 26.9% (n=66/245). Determinants of mortality, based on the multivariable analysis, included diarrhoea on presentation (odds ratio (OR) 3.34, 95% CI 1.38 – 8.10); anaemia (OR 3.30, 95% CI 1.28 – 8.50); raised CRP (OR 9.29, 95% CI 2.81 – 30.76); and hyponatraemia (OR 6.64, 95% CI 2.70 – 16.31).
Conclusion. SAM mortality was high, particularly for a high middle-income country setting. Factors that may be amenable to intervention include better management of the presenting illness, particularly diarrhoea, a focus on electrolyte imbalance correction, and management of anaemia.

Prevalence of and factors associated with carbapenem-resistant *Enterobacterales* rectal colonisation in hospitalised neonates in the Western Cape, South Africa

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Introductione Carbapenem-resistant *enterobacterales* (CRE) have emerged as major healthcare-associated infection (HAI) pathogens globally with substantial associated mortality and morbidity.
Objective. We conducted a retrospective cohort study to determine the prevalence of rectal CRE colonisation in neonates referred from a central hospital, to a regional and a district hospital in the Western Cape Province of South Africa (1 March 2019 - 30 September 2020).
Methods. Clinical data and laboratory records were reviewed to identify possible factors associated with CRE colonisation using stepwise forward logistic regression analysis.
Results. Among 291 neonates transferred to the regional and district hospitals, the median birth weight and gestational age were 1 360 (IQR 1 080 – 1 360) g and 31 (IQR 29 – 33) weeks. Overall CRE rectal colonisation prevalence at the time of transfer from the central hospital was 22.3% (n=65/291), with colonising species including *Klebsiella pneumoniae* (n=59/65, 90.8%) and *Serratia marcescens* (n=6/65; 9.2%). There were no factors significantly associated with CRE colonisation. No CRE-colonised neonate subsequently developed CRE infection. Post discharge mortality rates were similar in the CRE-colonised v. the non-colonised neonates (n=2/65 (3.1%) v. n=9/226 (4.0%); p=0.737).
Conclusion. Rectal colonisation with CRE was highly prevalent in preterm neonates being transferred for step-down hospital care. CRE colonised neonates had similar demographic characteristics to non-colonised neonates with no factors significantly associated with CRE colonisation. There was no increased risk of subsequent CRE infection or mortality in the 12 months post-discharge in neonates who were CRE-colonised.

Routine immunisation experience and practices during the COVID-19 pandemic of caregivers attending a tertiary hospital in Cape Town

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Introduction. Immunisations are successful, cost-effective interventions for the control of infectious diseases. COVID-19 lockdown restrictions had adverse effects on child-health including access to immunisations. Parental fear of visiting healthcare facilities was a significant factor in the decline of immunisations rates.
Objective. To document immunisation status, describe caregiver experiences around accessing immunisations during the COVID-19 pandemic, and identify factors associated with immunisation status.
Methods. An anonymous survey of caregivers attending Tygerberg Hospital Paediatric Department was undertaken over a 3-month period between September - December 2022.
Results. 171 caregivers completed the survey. Immunisations were up to date in 81% of records. Most (n=155;88%) agreed it was important to immunise their child. A third (n=55;33%) felt it was unsafe to attend clinic and 37% agreed it was difficult to attend clinic. Three-quarters (n=128,78%) were aware of recommendations to continue immunisation. These caregivers were more likely to think it was important to immunise on time(p=0.003) and to receive family encouragement (p=0.001). Caregivers were more likely to attend clinic if they felt it was important to vaccinate on time (p<0.001) or felt safe attending clinic (p=0.036). Caregivers receiving a social grant or who felt safe attending clinic were more likely to be up to date with immunisations (p=0.023 and p=0.053, respectively).
Conclusion. Immunisation rates were higher than expected, but below national targets. Although caregivers feel immunisations are important, unknowns such as COVID-19 still instil fear of attending clinics. Social factors such as family support and social grants were found to improve vaccine-seeking behaviour. Vaccination programmes should focus on providing clear information on clinic activities and take steps to mitigate perceived dangers at clinics.

A retrospective review of all children admitted with acute severe asthma to the paediatric intensive care unit, Red Cross War Memorial Children's Hospital between 2009-2019

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Introduction. Asthma is one of the common chronic conditions of childhood and affects children worldwide. The majority of children who experience an acute exacerbation of asthma do not require admission to a paediatric intensive care unit (PICU). There is limited data on the admission rates, treatment modalities and length of PICU stay, for children who have acute severe asthma (ASA) in a South African context.
Objective. In this study, we aim to describe the patient profiles and treatment of all children admitted to the PICU with ASA.
Methods. We conducted a retrospective audit of all children admitted with ASA to the PICU at Red Cross War Memorial Children's Hospital in Cape Town, South Africa between 01 January 2009 and 31 December 2019.
Results. There were 14 592 PICU admissions over the 11-year period, of which, 180 admissions (1.2%) were for ASA. There were 96 male (53.3%) admissions and the median, interquartile range (IQR) age on admission was 67 (37 – 93) months. Nearly all the patients received nebulisations, steroids, and magnesium sulphate before PICU admission. Half of patients were loaded with IV salbutamol (n=96; 53.3%) and about a third (n=61; 34%) received a salbutamol infusion before admission to PICU. Similar proportions received nebulisations and steroids in PICU, 34 patients (19%) received magnesium sulphate again in PICU and a total of 130 patients (72.2%) received a salbutamol infusion. Most children received non-invasive respiratory support (n=167; 90.3%), and 18 children (9,7%) required mechanical ventilation for a median (IQR) of 3 (2 – 4) days. The median PICU stay was 1 (IQR 1 – 2) days and median hospital stay was 4 (IQR 3 – 6) days.
Conclusion. There has been an increasing number of children admitted to PICU with ASA over the 11-year period. There has been increased utilisation of non-invasive ventilation (NIV) strategies, mainly HFNC and the duration of PICU support is short.

Congenital heart disease frequency, patterns and the use of focused cardiac ultrasound at a South African rural district hospital

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Introduction. Despite being the most common birth defect and a leading cause of global infant mortality, data on congenital heart disease (CHD) in Africa remain sparse.
Objective. To measure the observed frequency and describe the presentation, non-cardiologist focused cardiac ultrasound (FOCUS) findings and outcomes of CHD cases among paediatric and neonatal admissions at Madwaleni District Hospital (MDH) in rural Eastern Cape.
Methods. A retrospective, descriptive record review of all new cases of paediatric cardiologist confirmed CHD among admissions at MDH between 01 January 2020 and 31 December 2021 was conducted. Cases were traced by reviewing ultrasound libraries and neonatal and paediatric ward admission, discharge, and referral records. Once cases were identified, the specific hospital files were accessed.
Results. There were 11 cases of CHD identified. The overall frequency was 0.51% (95% CI 0.25 – 0.91) among total ward admissions (n=11/2 163). Of these 11 cases, only 27% (n=3) were suspected of having CHD on admission. The median age of presentation was 2 months (IQR 0 – 9) and the most frequent lesion was a ventricular septal defect (VSD) (55%, n=6). A FOCUS was diagnostic of CHD in 55% (n=6) of cases, abnormal but not diagnostic in 18% (n=2), and

not performed in 27% (*n*=3). The mortality rate was 27% (*n*=3) and one child received cardiac surgery for a VSD (9%).
Conclusion. CHD is not rare, is often missed, and is likely under-appreciated in South Africa. A non-cardiologist FOCUS can allow for CHD diagnosis and may address the diagnostic need for children with challenges in accessing specialist cardiac services.

Early onset neonatal bloodstream infections at nine Western Cape hospitals

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Introduction. We described the demographic and clinical profile of neonates investigated for early onset neonatal bloodstream infections (EO-BSI) at nine Western Cape hospital neonatal units between 1 January 2017 and 31 December 2018.
Objective. To describe the demographic profile of neonates with EO-BSI, antibiotic coverage rates and factors associated with EO-BSI attributable mortality.
Methods. This retrospective descriptive analysis included all hospitalised neonates with an episode of culture-confirmed EO-BSI at 3 central and 6 peripheral neonatal units in the Western Cape Province of South Africa from 1 January 2017 to 31 December 2018. Clinical and electronic laboratory records were reviewed.
Results. Of the 8 252 blood culture specimens submitted for the investigation of suspected EO-BSI, 136 EO-BSI episodes yielding 141 pathogens were identified giving an EO-BSI rate of 1.3 and 0.5 episodes/1 000 live births at central and peripheral hospitals respectively. Preterm (*n*=93/136; 68.3%) and low birth weight (*n*=84/136; 61.8%) neonates were most affected. The predominant pathogens were *S. agalactiae* (*n*=46/136; 34%), *K. pneumoniae* (*n*=17/136; 13%), *L. monocytogenes* (*n*=11/136; 8%), *A. baumannii* (*n*=11/136; 8%) and *E. coli* (*n*=11/36; 8%). The empiric antibiotic coverage rate for ampicillin plus gentamicin was 64% (95% CI 51 – 74) at central hospitals and 84% (95% CI 74 – 94) at peripheral hospitals. Neonates with gram negative bloodstream infection and discordant empiric antibiotic therapy had almost 4 -fold and 3-fold higher odds of death respectively.
Conclusion. Preterm and low birth weight neonates are most vulnerable to acquiring EO-BSI and have higher odds of death with discordant empiric antibiotic therapy.