39th Conference on Priorities in Perinatal Care in Southern Africa
3-6 March 2020
Gauteng

Organisers contact details:
SAMRC Research Unit for Maternal & Infant Health Care
Tel: 012-945 2000
www.perinatalpriorities.co.za
prioritiessa@gmail.com
Fax: 086 433 7304
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Invited guest speaker

Helen Liley

Helen Liley is a neonatologist at Mater Mothers’ Hospital and Professor in the Faculty of Medicine at The University of Queensland, in Brisbane, Australia. She is a member of the Neonatal Task Force of the International Liaison Committee on Resuscitation (since 2010), and the Australian Resuscitation Council (since 2009). She is an author of Australian evidence-based guidelines on neonatal resuscitation \(^1\), ethics of research in children \(^2\) and paediatric and neonatal patient blood management \(^3\), as well as 70 peer-reviewed journal articles and several book chapters. She is a member of the Queensland Maternal and Perinatal Quality Council (Perinatal Mortality Subcommittee) and the Queensland Guidelines Steering Committee. Among other research roles, she is chief investigator on an NHMRC-funded multicentre clinical trial to determine whether high dose erythropoietin improves the outcomes of neonatal hypoxic ischaemic encephalopathy.

\(^1\) [www.resus.org.au](http://www.resus.org.au)


### DAY 1 - TUESDAY 3 March 2020

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<tr>
<td>12h00 – 17h00</td>
<td>Registration desk open&lt;br&gt;Delegates to check in and collect their keys from registration desk</td>
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<tr>
<td>16h00-18h30</td>
<td><strong>Session 1</strong>&lt;br&gt;<strong>Chairperson:</strong> Nomlindo Makhubalo&lt;br&gt;<strong>Keynote:</strong> Post resuscitation management of neonates with asphyxia <strong>Helen Liley</strong></td>
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<td></td>
<td><strong>Papers:</strong>&lt;br&gt;1. A descriptive retrospective audit of the obstetric conditions which occur in mothers of babies with neonatal encephalopathy at Mowbray Maternity Hospital in 2016 <strong>Liesl Dietrich</strong>&lt;br&gt;2. Outcomes at hospital discharge amongst neonates with hypoxic ischemic encephalopathy managed with induced hypothermia <strong>Firdose Nakwa</strong>&lt;br&gt;3. Neurodevelopmental outcome after therapeutic hypothermia in neonates with hypoxic ischaemic encephalopathy <strong>Sibongile Mbatha</strong>&lt;br&gt;4. Calcium and magnesium abnormalities in neonates with moderate to severe encephalopathy <strong>Firdose Nakwa</strong>&lt;br&gt;5. The burden of early onset sepsis in neonates with neonatal encephalopathy <strong>Kathleen Car</strong>&lt;br&gt;6. “Cut it, doctor” Auditing a year’s worth of caesars at Zithulele Hospital <strong>Ben Gaunt</strong></td>
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<tr>
<td>18h15 – 18h45</td>
<td>Exco Meeting – Prof Velaphi, Dr Nkosi, Prof Gebhardt, Ms Mashao &amp; organisers</td>
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<tr>
<td>19h00 – 20h00</td>
<td>Dinner – Restaurant</td>
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<td>07h00 – 07h30</td>
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<td>07h30 – 08h00</td>
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<tr>
<td>08h00 – 10h30</td>
<td><strong>Session 2: Mortality and quality improvement</strong></td>
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<td><strong>Chairperson:</strong> Sibongile Mandondo</td>
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<tr>
<td>Keynote</td>
<td>Neonatal care and preventing stillbirths</td>
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<td><strong>Bob Pattinson</strong></td>
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<td>10h30 – 11h00</td>
<td>Morning tea</td>
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<td>11h00 – 13h00</td>
<td><strong>Session 3: PMTCT and neonatal infections</strong></td>
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<td><strong>Chairperson:</strong> Ruth Davidge</td>
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<tr>
<td>Keynote</td>
<td>What is SA’s PMTCT vision? Where are we on the PMTCT road?</td>
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<td><strong>Ute Feucht</strong></td>
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<td>13h15 – 14h15</td>
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### Day 1 – Tuesday 4 March 2019

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<tr>
<td>08h00</td>
<td><strong>Session 1: Introduction to Pediatric Care</strong></td>
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<tr>
<td>08h30</td>
<td><strong>Keynote:</strong> Management of neonates born through Meconium Aspiration Syndrome (Helen Liley)</td>
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<tr>
<td>09h15</td>
<td>Workshop 1: Presented by Neil Moran &amp; NCCEMD Establishing minimum standards for safe labour ward care in South Africa</td>
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<tr>
<td>10h30</td>
<td>Workshop 2: Presented by Alta Kritzinger Enhancing early language development in infants born preterm and with low birthweight. Brief evidence-based messages for healthcare workers to share with parents.</td>
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<tr>
<td>11h00</td>
<td>Workshop 3: Presented by Helen Liley Writing up a research protocol: What is the best way to answer my research question? Writing up a research paper for publication. How to get started, Structure of a good paper, What are reviewers and editors looking for? (Max 40 delegates)</td>
</tr>
<tr>
<td>14h15</td>
<td>Workshop 4: Presented by the CLEVER team (Refilwe Matatji, Antonella Silver, Elizabeth Sithole &amp; Anne Marie-Bergh) Introduction to “CLEVER Maternity Care” (Max 40 delegates)</td>
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<tr>
<td>16h00</td>
<td>Afternoon Tea</td>
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<tr>
<td>16h30</td>
<td>Priorities In Perinatal Care Association Annual General Meeting - All conference attendees: “your inputs are important” (or forever hold your peace) 😊</td>
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<td>17h00</td>
<td>Dinner – Restaurant</td>
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### Day 2 – Wednesday 5 March 2019

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<td>07h30</td>
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<tr>
<td>08h00</td>
<td><strong>Session 2: Neonatal services, interventions and outcomes</strong> Chairperson: Ute Feucht</td>
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<tr>
<td>08h30</td>
<td><strong>Keynote:</strong> Management of neonates born through Meconium Aspiration Syndrome (Helen Liley)</td>
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### Day 3 – Thursday 5 March 2019

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<td><strong>Session 4: Neonatal services, interventions and outcomes</strong> Chairperson: Ute Feucht</td>
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<td><strong>Keynote:</strong> Management of neonates born through Meconium Aspiration Syndrome (Helen Liley)</td>
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<tr>
<td>09h15</td>
<td>Papers: 1 Assessment and accreditation of neonatal services in KwaZulu-Natal South Africa</td>
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<tr>
<td>10h00</td>
<td>2 Development of and support for implementation of an essential package of neonatal care in KwaZulu-Natal (KZN) South Africa</td>
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<tr>
<td>10h30</td>
<td>3 Kangaroo mother care transportation of the newborn by emergency medical services in Johannesburg district</td>
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<td>11h00</td>
<td>4 Clinical outcomes of magnesium sulphate on low birth weight babies</td>
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<td>11h30</td>
<td>5 Review of neonatal mortality rate and avoidable factors in Edendale hospital</td>
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<tr>
<td>Ruth Davidge</td>
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<td>Ruth Davidge</td>
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<td>Ramatsimele Mphahlele</td>
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<td>Temitope Odubunmi</td>
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<td>Pratheesha Seonandan</td>
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<td>16h00 – 16h30</td>
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**DAY 4 – FRIDAY 6 March 2020**

Check out and hand keys in at registration desk during breakfast before session commences

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<tr>
<td>08h00 – 10h00</td>
<td><strong>Session 6: Intrapartum Care</strong></td>
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<td><strong>Chairperson:</strong> Salome Maswime</td>
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<tr>
<td><strong>Keynote:</strong> A year of a revised partogram; has anything changed?</td>
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<tr>
<td>Paper 1</td>
<td>Postpartum haemorrhage managed with Ellavi UBT free flow pressure controlled uterine balloons by midwives</td>
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<td>Paper 2</td>
<td>Audit of the management and outcomes of women with retained placentae referred from midwife obstetric units to hospitals in Metro West, Cape Town</td>
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<td>Paper 3</td>
<td>Preimplantation genetic diagnosis (PGD) in women with advanced maternal age: A literature review</td>
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<td>Paper 4</td>
<td>Experiences and lessons learnt from implementing the safe caesarean section plan in the Eastern Cape</td>
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<td>Paper 5</td>
<td>Measures to enhance cooperation of primigravida patients during vaginal examination in the first stage of labour</td>
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<tr>
<td>Paper 6</td>
<td>Are vacuum-assisted deliveries a good idea in the South African context?</td>
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<tr>
<td>Posts: 1</td>
<td>Is the KMC unit... a home away from home or extended hospital stay/expressing feelings through collage</td>
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<td>A safer candle project – South Africa</td>
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<tr>
<td>10h30 – 13h00</td>
<td><strong>Session 7: Challenges in maternal and neonatal care</strong></td>
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<tr>
<td><strong>Keynote:</strong></td>
<td>Cerebral palsy and medico-legal challenges</td>
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<table>
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<tr>
<th>Papers:</th>
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<tr>
<td>1</td>
<td>“The opera aint over till the fat lady sings”…intact umbilical cord resuscitation</td>
<td>Vanesa Booysen</td>
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<tr>
<td>2</td>
<td>Prevalence of congenital birth defects (CBD) and associated risk-factors of babies delivered at Universitas Academic Hospital</td>
<td>Shisana Baloyi</td>
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<tr>
<td>3</td>
<td>Neonatal jaundice in a low resource tertiary neonatal unit - Harare Zimbabwe</td>
<td>Gwendoline Chimhini</td>
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<td>4</td>
<td>The role of the birth attendants and the importance of neonatal intestinal microbioms at birth. Translating labour ward and post-partum practices into lifelong health</td>
<td>Vanesa Booysen</td>
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<td>5</td>
<td>A theoretical framework to understanding barriers to respectful maternity care: the experience of nurses and midwives in 3 Cape Town MOUs</td>
<td>Jessica Dutton</td>
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<td>6</td>
<td>Implementation of neurodevelopmental supportive care – the Indesc study: Leadership development phase</td>
<td>Welma Lubbe</td>
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A DESCRIPTIVE RETROSPECTIVE AUDIT OF THE OBSTETRIC CONDITIONS WHICH OCCUR IN MOTHERS OF BABIES WITH NEONATAL ENCEPHALOPATHY AT MOWBRAY MATERNITY HOSPITAL IN 2016

Dr Liesl Dietrich, Mowbray Maternity Hospital (MMH), Prof Sue Fawcus (Obstetrics - MMH) and Dr Lucy Linley (Neonatology - MMH).
liesldietrich@gmail.com

Introduction: Neonatal encephalopathy (NE) is an important condition which may result in mortality or severe and permanent morbidity. The extent of the problem, the obstetric factors and avoidable factors will be determined.

Aims and objectives: The aim is to demonstrate the obstetric factors occurring in patients who have neonates diagnosed with NE. Specific objectives are to determine the NE rate at Mowbray Maternity Hospital (MMH); to describe obstetric factors, and to assess avoidable factors.

Methodology: This was a retrospective descriptive study which included patients whose neonates were diagnosed with NE and were born at MMH in 2016. Ethics approval was granted by the University of Cape Town Human Research Ethics Committee. The neonates’ names were retrieved from a NE register. The corresponding mothers’ folders were studied by using a NE data collection tool.

Results: In 2016 there were 9,702 live births (LB) at MMH. The NE rate was 5.5 per 1000 LB. There were 58% of patients referred from the midwife obstetric units (MOUs) and 42% were known to MMH. All patients were booked for antenatal care, the mean age was 27.5 years. The greatest contribution of antenatal complications were prolonged pregnancy and hypertensive disorders. The mean gestational age was 39 weeks, 72.9% were in spontaneous labour and 14.6% of patients were induced. Maternal care problems in labour included prolonged second stage of labour in 25% of patients who had a second stage of labour. Fetal monitoring at the MOUs was done as per protocol in 70% of patients in the latent phase and 12.5% of those in the active phase of labour. At MMH, all patients in labour had Cardiotocograph (CTG) monitoring where 90.6% had a pathological CTG and 6.3% had a suspicious CTG trace. Of the patients who had abnormal CTG traces, 87.1% had intrapartum resuscitation. Normal vertex deliveries occurred in 27.1%, Caesarean sections in 58.3% and assisted vaginal delivery in 14.6% of patients. Sentinel events occurred in 31.3% of patients. The two most frequently occurring sentinel events were shoulder dystocia and prolonged second stage of labour. Avoidable factors included, amongst others, ambulance delay (42.9%) and 34% had fetal distress which was not detected by health care workers, even though fetal monitoring was done.

Discussion and conclusion: The NE rate for MMH in 2016 was 5.5 per 1000 LB. Prolonged pregnancy and hypertension were the most common antenatal complications. Sentinel events for NE occurred in 31.3% of patients of which most were intrapartum. There were 68.7% of patients with no sentinel events, but 75.8% of this group had abnormal CTGs. Important avoidable factors included inadequate fetal heart rate monitoring at the MOUs, poor recognition of abnormal CTGs at MMH and delay in ambulance transportation. Obstetric management in our district may improve with regular intrapartum care training for medical and nursing staff.

Dr Liesl Dietrich is a medical officer in Obstetrics at Mowbray Maternity Hospital. She has a good relationship with the MOU staff; is involved with MOU perinatal meetings; responsible for PPiP data at a few units in her district and does clinical outreach to a few MOUs referring to MMH. This work was done for a dissertation, a requirement of UCT’s M.Phil. (Maternal and Child Health) degree.
OUTCOMES AT HOSPITAL DISCHARGE AMONGST NEONATES WITH HYPOXIC ISCHEMIC ENCEPHALOPATHY MANAGED WITH INDUCED HYPOTHERMIA

L. Sepeng, F.L Nakwa, K. Thandrayen, S.Velaphi
Department of Paediatrics, Chris Hani Baragwanath Academic Hospital and School of Medicine, Faculty of Health Sciences, University of the Witwatersrand
firdose.nakwa@wits.ac.za

Introduction

Induced hypothermia (IH) is a neuroprotective strategy, in infants with hypoxic ischemic encephalopathy (HIE). High-income countries combine it with optimal tertiary neonatal intensive care (NICU). In low- and middle-income countries, this strategy is often administered outside of the ICU setting.

Objectives

To determine characteristics of neonates managed with IH outside intensive care setting and their survival rates at hospital discharge.

Methods

Retrospective record review of neonates with asphyxia over a two year period (2015-2016) using the modified TOBY criteria in a high care setting. Data collected included infant characteristics, blood gas analysis, neurological examination, aEEG findings, markers of sepsis and outcome at hospital discharge. Comparisons were made between survivors and non-survivors.

Results

A total of 195 infants with HIE received IH; 189/195 (97%) were managed in a high care setting, and 6 in the NICU. The median birthweight and gestational age was 3.07 (2.7-3.4) grams and 39 (38-40) weeks. The median Apgar score at 5 and 10 minutes were 5 (4-7) and 6 (5-8) respectively. The median pH and base deficit was 7.1 and 19.7 mmol/l. Ninety-seven percent had moderate to severe encephalopathy and 17 (8.7%) had a Thompson score < 7. Nineteen percent (38) demised. Of the 96 that had aEEG recordings 11% had a normal tracing. Twenty percent (26) had an abnormal C-reactive (>20mg/l) and 2 (1.5%) had positive blood cultures. Three (3%) of 81 patients had meningitis. The non-survivors had a lower APGAR score at 10 minutes (p-0.013), and a more severe Sarnat stage (p-0.022).

Conclusion:

Administering induced hypothermia to neonates with HIE, outside of the intensive care setting is feasible in a limited resource setting. There was high mortality, majority in infants with severe encephalopathy. We need to be more selective in patients who require IH.

Firdose Nakwa is a neonatologist at Chris Hani Baragwanath Academic Hospital
NEURODEVELOPMENTAL OUTCOME AFTER THERAPEUTIC HYPOTHERMIA IN NEONATES WITH HYPOXIC ISCHAEMIC ENCEPHALOPATHY

Dr Sibongile Mbatha (presenter)
Dr Firdose Nakwa
Professor Sithembiso Velaphi
Professor Kebashni Thandrayen
Chris Hani Baragwanath Academic hospital paediatric department and the University of the Witwatersrand
sibongile.mbatha@wits.ac.za

Introduction:

Studies done in developing countries on the use of therapeutic hypothermia (TH) in reducing moderate to severe neurologic disability in hypoxia ischaemic encephalopathy (HIE) have reported outcomes that are less favourable than those reported from developed countries.

Objectives:

To determine the neurodevelopmental outcomes at 12 months and at 18-24 months in patients managed with TH in a setting where their care is often provided outside intensive care unit.

Methods: This was a retrospective review of records of patients who were managed with TH for HIE in 2013-2014. Neurodevelopment assessment was done at 12 and 18-24 months using the Griffiths Mental Developmental Scales (GMDS). Outcomes of assessment at 12 months were compared to those at 18-24 months.

Results:

155 of 178 total patients had documented information on whether they had TH or not. 113 (73%) had received TH. Seventy-six (67%) patients were assessed at 12 months and 56 (50%) were assessed at 18-24 months. At 12 months only four patients (6%) had moderate to severe disability, and at 18-24 months, 18 (32%) had moderate to severe disability. Assessment at 12 months in predicting findings at 18-24 months had a sensitivity of 50%, positive and negative predictive value of 100% and 90% respectively and specificity of 100%.

Conclusions:

Assessment at 12 months has poor sensitivity in detecting neonates who develop moderate to severe disability at 18-24 months. Longer term follow up is warranted. To have a better understanding of outcomes in developing countries loss to follow up needs to be reduced.

Developmental Paediatrician working at Chris Hani Baragwanath Academic hospital
Diploma in Child health from colleges of medicine South Africa in 2008. MBBCH from University of Witwatersrand IN 2005
CALCIUM AND MAGNESIUM ABNORMALITIES IN NEONATES WITH MODERATE TO SEVERE ENCEPHALOPATHY

F.L. Nakwa, 1L. Sepeng, 1K.P Car, 1S. Velaphi
1Department of Paediatrics, university of the Witwatersrand

firdose.nakwa@wits.ac.za

Background:

Neonates with moderate to severe asphyxia are reported to have a high prevalence of hypocalcaemia and hypomagnesaemia worst in those with severe encephalopathy.

Methods

A retrospective review of records of neonates diagnosed with neonatal encephalopathy (NE) managed with or without induced hypothermia (IH) in 2015 and 2016. Neonates who have NE with seizures or who are managed with IH have serum electrolytes and calcium, magnesium and phosphate (CMP) levels monitored. Incidence of abnormalities in the CMP in neonates with NE with seizures or managed with IH are not well documented.

Objective: To determine the serum levels and incidence of their abnormalities in neonates with NE with seizures or managed with IH

Results:

There was a total of 245 neonates with NE and their median birthweight (ranges) was 3.07 (2.03 – 4.60) kg and gestational age (ranges) 39 (33-42) weeks over the study period.

Overall the average calcium, magnesium and phosphate levels were 2.19±0.25mmol/l, 0.79±0.18 and 2.07±0.74 respectively. Among those who were managed with IH serum levels of CMP were; Ca 2.19±0.26 mmol/l, Mg 0.80±0.17 mmol/l, phosphate (PO4) 2.07±0.74 mmol/l. Those with seizures had CMP levels of 2.28±0.12 mmol/l, 0.82±0.01 mmol/l, 2.09±0.7 mmol/l respectively. Infants with or without seizures managed with IH had no difference in their CMP levels(Ca 2.2 vs 2.18; p-0.77, Mg 0.78 vs 0.74 p-0.30; PO4 2.03 vs 1.73 p-0.14). There was no correlation between Sarnat staging and serum calcium levels (2.18 vs 2.21, p-0.7). The incidence of abnormalities in CMP amongst the neonates managed with IH were 66.7%, 42% and 36% for Ca, Mg and PO4 respectively.

Conclusion:

High prevalence of hypocalcaemia in infants with moderate to severe encephalopathy. Patients at high risk of hypocalcemia should be monitored carefully. Those managed with induced hypothermia had lower calcium and magnesium levels. Adjuvant therapy with magnesium may be neuroprotective.

Firdose Nakwa is a neonatologist at Chris Hani Baragwanath Academic Hospital
THE BURDEN OF EARLY ONSET SEPSIS IN NEONATES WITH NEONATAL ENCEPHALOPATHY

Kathleen P. Car¹, Firdose Nakwa¹, Fatima Solomon²,³ Sithembiso C. Velaphi¹, Cally J. Tann⁴,⁵,⁶, Alane Izu²,³, Sanjay G Lala¹,⁷, Shabir A. Madhi²,³*, Ziyaad. Dangor¹,²,³*

¹Department of Paediatrics, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa. ²Medical Research Council: Respiratory and Meningeal Pathogens Research Unit, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa. ³Department of Science and Technology/National Research Foundation: Vaccine Preventable Diseases, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa. ⁴Department of Infectious Disease Epidemiology, School of Hygiene and Tropical Medicine, London, UK. ⁵Medical Research Council/Uganda Virus Research Institute and London School of Hygiene and Tropical Medicine Uganda Research Unit, Entebbe, Uganda. ⁶Institute for Women’s Health, University College London, London, UK. ⁷Perinatal HIV Research Unit, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, South Africa

Objective: Early-onset sepsis (EOS) is a risk factor for neonatal encephalopathy, a leading cause of neonatal deaths. We evaluated the association of EOS among newborns with neonatal encephalopathy in a low-middle income setting in South Africa; and evaluated for predictors of death in newborns with EOS and neonatal encephalopathy.

Methods: We undertook a retrospective study in newborns born from 1st January 2016 to 30th June 2018 with gestational age ≥35 weeks and/or birth weight ≥2,500 grams, who were diagnosed with neonatal encephalopathy by the attending physician. Overall, EOS (confirmed + probable) was defined as either culture-confirmed sepsis on blood and/or cerebrospinal fluid within 72 hours of birth; or in the absence of culture confirmation, a CRP > 32mg/L or an immature to total neutrophil ratio (I:T) ≥ 0.3 (i.e. probable sepsis).

Results: Of 10,182 hospitalized newborns, 1,027 (10.1%) were diagnosed with neonatal encephalopathy. One-hundred and eighty-one (17.6%) neonatal encephalopathy cases had EOS (confirmed + probable), including 52 (5.1%) that were culture-confirmed sepsis and 129 (12.5%) with probable sepsis. The incidence (per 1,000 live births) of EOS (confirmed + probable) in newborns with neonatal encephalopathy was 2.3 (95% CI: 2.0-2.7); including 0.70, 0.22, 0.13 and 0.06 for culture-confirmed, Group B streptococcus, Klebsiella pneumoniae and Escherichia coli, respectively. The case fatality risk (CFR) of EOS (confirmed + probable) in newborns with neonatal encephalopathy was 19.3% (95% CI: 13.9-25.9). Predictors of fatal outcome in newborns with EOS (confirmed + probable) and neonatal encephalopathy included moderate or severe neonatal encephalopathy (aOR 6.79), seizures (aOR 3.46) and in-utero HIV-exposure (aOR 3.72; p<0.05 for all predictors).

Conclusion: In this low-middle income African setting, EOS (confirmed + probable) was prevalent in 17.6% of neonatal encephalopathy cases. Our study highlights the need for preventative strategies against EOS as a strategy to reduce the burden of neonatal encephalopathy.

Kathleen Car is a paediatric registrar at the University of Witwatersrand
“CUT IT, DOCTOR” AUDITING A YEAR’S WORTH OF CAESARS AT ZITHULELE HOSPITAL
Dr CB Gaunt, Dr H Hendriks, Dr P Mans, Zithulele Hospital (Eastern Cape, South Africa)

ben@zithulele.org

Introduction

The art and science of obstetrics is about maximising maternal and neonatal outcomes. Achieving this in under-resourced settings where care is predominantly provided by non-specialist medical doctors can be challenging. Zithulele Hospital has, over the past decade, seen a substantial increase in the number of deliveries performed (now stable at around 2200 per year) and a corresponding drop in the perinatal mortality rate (sustained under 20 per 1000 >1000g for the past five years). Caesarean sections have been available 24/7 since 2006 and the Caesarean section rate has increased steadily over the years. This is consistent with data from across the country. In 2017 we decided that we needed more data to understand our decision-making process better. An initially paper-based system was converted to a Google form in September 2018. For this paper we decided to audit a full calendar year (2019) to understand the patients, decision makers, and the indications better. We also wanted to understand whether it was feasible to capture data in this way and whether we could improve the process or questions still further.

Method

We analysed the Google Form entries, captured by the doctors at the time of Caesar. Although we compared the overall number to what was captured in the theatre register, we did not attempt to find missing cases, nor correct any data that had been captured as the purpose was to see if the process itself presented opportunities for learning. The data was analysed using Microsoft Excel. CTG traces that had been captured when the indication was fetal distress were reviewed by the three senior doctors who supervise calls and categorised according to how confident they were that a Caesar had been indicated.

Results

- There were 2256 deliveries from 1 January to 31 December 2019.
- Our perinatal mortality rate was 18.6 per 1000 (all) and 16.0 for babies over 1000g. The neonatal mortality rate was 6.7 (all) and stillbirth rate 12.4 (all).
- We did 604 Caesarean sections (a rate of 26.8%) of which 532 (88.1%) were captured on our Google Form and available for analysis.
- The main indications for Caesarean section were recorded as: fetal distress (n=200, 37.6%), poor progress in labour (n=112; 21.1%), previous single CS where VBAC failed or was contraindicated (n=51; 9.6%), more than one previous CS (n=43; 8.1%), breech (singleton or leading twin) (n=28; 5.3%), failed vacuum (n=24; 4.5%), failed IOL (n=21, 3.9%) and fetal compromise pre-labour (n=17; 3.2%)
- In an initial analysis of 50 CTGs captured for CS where the indication was fetal distress, three senior doctors agreed with the interpretation 80% of the time. There were 4 (8%) cases felt not to be fetal distress. The reviewers disagreed in 6 (12%) of cases.

Discussion

The increasing Caesarean section rates in South Africa’s public sector have received attention in the news as well as from the health authorities. A few South African hospitals have published audits of their Caesar service, but publication lag means the most recent are from 2014 or 2015. Understanding the
profile at a deeply rural district hospital that has performed well in other indicators adds to our understanding of this phenomenon.

Fetal distress constitutes the single biggest indication. This may reflect a move towards defensive medicine, or uncertainty in CTG analysis, amongst other reasons, but the majority of CTGs appeared to have been correctly interpreted. After poor progress in labour, previously scarred uteri are the next biggest reason for caesar. This would be worth tracking over time – it reflects increased availability, but also drives Caesar rates.

Our experience of audit shows that accurate useful data can be collected relatively easily using simple digital tools. Clear guidelines as to who’s responsible for the recording and a plan for when there’s loss of internet connectivity improve uptake.

Our findings have resulted in expanded CTG training and more explicit guidance to nursing and medical staff, to standardise and improve interpretation and an expanded Google Form that will also capture decision to cutting times as well as anaesthetic or surgical complications experienced in theatre. The exercise has also provided reassurance as to the decisions being made in our non-specialist setting.

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Ben Gaunt is the Clinical Manager at Zithulele Hospital near Hole in the Wall in the old Transkei where he and his wife Taryn have worked since 2005. They have four children. Ben trained at UCT and Ngwelezana Hospital in Empangeni. He has diplomas in obstetrics, anaesthetics and HIV and an MSc in primary health care. One of his passions is developing high quality health services that are accessible to his rural community.
South Africa is classified as an upper middle-income country (UMIC) and our stillbirth rate places us 6th of 7 for African UMICS and 50th of 54 UMICS worldwide. The WHO gives our stillbirth rate as 17.4/1000 births for babies 1000g or more. The DHIS reports about 20,000 stillbirths and 10,000 early neonatal deaths per year for the last decade in South Africa. PPIP gives us about 16000 stillbirths and 9000 early neonatal deaths for babies 1000g or more. Stillbirths are a big, but ignored problem in South Africa.

Contrary to the rest of Africa, we have more antenatal stillbirths (60%) than intrapartum stillbirths; other countries report about 50% antenatal stillbirth rate. The top five major categories of perinatal death ranked from highest to lowest are unexplained stillbirth, hypertensive disorders in pregnancy, antepartum haemorrhage, intrapartum asphyxia and spontaneous preterm delivery. The most common basic pathology underlying these perinatal deaths is placental insufficiency. To make a difference to our perinatal mortality rate we need to identify and manage women with placental insufficiency.

Placental insufficiency can manifest in various clinical syndromes, the most recognisable one is hypertensive disorders of pregnancy. Increasing the detection of hypertension should reduce mortality. Increased antenatal contacts in the third trimester has led to a reduction in stillbirths between 33,34 weeks to 37,38 weeks in Mpumalanga and a significant reduction in perinatal deaths due HDP. Surprisingly detecting poor foetal growth using conventional ultrasound has not resulted in any reduction in perinatal mortality in LMICs.

The biggest category of perinatal deaths is unexplained stillbirths. The classic picture is a woman thought to be healthy presenting in labour with a macerated stillbirth whose birth weight is between 1-2kg. A portion of this group of women can be detected by the use of continuous wave Doppler ultrasound (Umbiflow), and its use in screening women classified as having low-risk pregnancies has led to a significant reduction in stillbirths, especially macerated stillbirths and an overall drop in perinatal mortality.

Introducing the extra antenatal contacts and Umbiflow has led to an increase in demand for neonatal services by increasing the number of iatrogenic preterm births. Increased resources (human with skills and equipment) and decentralisation of services is clearly needed, but this has budgetary implications. Constrained resources, in my view, means strong support the proposed protocol on managing foetuses and neonates at the limits of viability. This will ensure, within the resources available, the woman and her foetus will get appropriate level of care for their needs.

Ultimately, we need to research the causes of placental insufficiency which appears to be much higher in South Africa than other countries. Delineating the cause will help prevent placental insufficiency in the first place.
AUDIT OF MATERNAL DEATHS FROM SELF-HARM IN ETHEKWINI DISTRICT FOR THE PERIOD 2017-2019
Tasnim Ibrahim

Department of Health. KZN
tasnimibrahim123@gmail.com

Introduction

Deaths from self-harm especially suicide, is one of the commonest causes of maternal mortality in the developing world. There is limited information on suicide maternal deaths in South Africa. The prevalence of perinatal mental health disorders and, suicidal ideation, were reported to be 33% and 18% respectively in one South African Study. In a study at a regional hospital, 33% of the women admitted for an attempted suicide were pregnant. The Guidelines for Maternity Care in South Africa does not include screening and managing perinatal mental health disorders. The number of suicide deaths in eThekwini District has been higher than expected. The aim of the audit was to gain knowledge about underlying factors including psychosocial and clinical care. Knowledge of these issues could assist in prevention.

Methods

All maternal deaths as a result of suicide in eThekwini District KZN were reviewed for the period 2017 – 2019.

Results

There were 11 cases. 4.76% of all maternal deaths. 45.5% were booked. All age groups were represented equally. 1 Woman had a previous mental disorder documented. All deaths were during the antenatal period. 9 deaths were due to drug toxicity and 2 by violent means. 54.5% were considered to be possibly or probably avoidable from a clinical care perspective.

Discussion

There were many clinical lessons learned, including the importance of consultation, good history taking and the awareness that commonly prescribed and over-the-counter drugs can be extremely toxic. It is likely that many deaths in the postpartum period are not recorded as a maternal death. Clear policies on further care after a suicide attempt is needed.

There is a need to screen, diagnose and manage mental health disorders in pregnancy and the postpartum period.

Dr T Ibrahim
Current position as District Clinical specialist in eThekwini District KZN
**Introduction:** Perinatal death is a notifiable condition of special public health concern in Eswatini. However, perinatal deaths remain grossly under reported through the Immediate Disease Notification System (IDNS). The Ministry of Health through the Epidemiology and Disease Control Unit (EDCU) in collaboration with the Sexual Reproductive Health Unit (SRHU) implemented Perinatal Deaths Surveillance and Response (PDSR) since 2017. The aim was to bridge surveillance gaps on notification of perinatal deaths at all levels through IDNS.

**Methods:** Four regional hospitals were selected as sentinel sites and in total 18 health facilities have been enrolled in this project. Permission was granted from all health facilities. The project was in two phases; (1) pilot phase in 2017: PDSR data was collected weekly from the four regional hospitals and (2) post-pilot phase in 2018-2019: data was collected after results from the pilot were disseminated to stakeholders. PDSR was then rolled-out to 14 health facilities providing maternity services.

**Results:** The pilot study of PDSR has been launched in four regional hospitals in June 2017. During this period, only <1% (2/257) of perinatal deaths was reported through IDNS. In 2018, the project was rolled out to 14 health facilities providing maternity services around the country. Sensitisations and mentorship sessions based on the pilot results were conducted continuously after the pilot-phase. In 2018, 16% (102/633) of perinatal deaths were reported among 18 facilities through IDNS. In 2019, perinatal deaths notification increased to 32% (250/761), indicating a 50% improvement compared to 2018.

**Conclusion:** The ultimate goal of this PDSR project is to improve notification of perinatal deaths through IDNS, targeted at 100%. Looking at the results above, there was a gradual improvement on notification of perinatal deaths through IDNS, demonstrating the effectiveness of PDSR project. However, continuous sensitisations and mentorships for healthcare workers are needed and PDSR should be incorporated into the routine passive surveillance system for sustainability.

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Ms. Portia Makgolane a Surveillance Officer/ Maternal & Perinatal Deaths focal point from The Kingdom of Eswatini, in the Ministry of Health - Epidemiology and Disease Control Unit.
DEcision-Making Support for Improved Health Systems Performance for Perinatal Outcomes in South African District Hospitals

1. Ntombifikile Maureen Nkwanyana (Presenter)
   Discipline of Public Health Medicine, College of Health Sciences, University of KwaZulu-Natal
2. Anna Silvia Voce
   Discipline of Public Health Medicine, College of Health Sciences, University of KwaZulu-Natal
3. Benn Sartorius
   Discipline of Public Health Medicine, College of Health Sciences, University of KwaZulu-Natal

Nkwanyana@ukzn.ac.za

Background

The majority of preventable perinatal deaths in South Africa occur in district hospitals and are mainly related to the functioning of the health system. Decision-making, has been considered a key function in managing health system performance, is often not evidence-based in South African health facilities. The essence of the study was to develop and test a decision support model that would be the basis of a decision support tool to strengthen decision-making in the health system for perinatal care, at district hospital level in South Africa.

Methods

Delphi technique was used to develop a decision support framework for health systems performance applicable to South African district hospitals in relation to perinatal outcomes. Further, generalized structural equation modelling was used to evaluate how essential components of the health system, described in the decision support framework, associated with perinatal outcomes in district hospitals.

Results

The Facility Based Health System Framework for Perinatal Care (FBHSF-PC) comprising domains and indicators that are necessary to measure health system performance for perinatal care in South African district hospitals, was developed. The generalized structural equation modelling reflected that priorities towards strengthening health system should initially focus on leadership and governance, service delivery and health workforce, as they either have a direct or indirect effect on perinatal outcomes in district hospitals.

Conclusions

The developed FBHSF-PC can be an appropriate model to be used towards the development of a decision support tool to strengthen decision-making for improved health system performance for perinatal care in district hospitals. However, it requires further refinement before it can be translated to a decision support tool.

Fikile Nkwanyana is a bio-statistician in the Discipline of Public Health Medicine at the University of KwaZulu-Natal in Howard Campus
‘CLEVER Maternity Care’: Evaluation of the implementation process in Tshwane District, South Africa
Anne-Marie Bergh,1 Refilwe Malatji,2 Antonella Silver,1 Elizabeth Sithole,1 Sarie Oosthuizen1,2,3
1 UP Research Centre for Maternal, Fetal, Newborn and Child Health and SAMRC Maternal and Infant Health Care Strategies Research Unit, University of Pretoria, South Africa
2 Tshwane District Health Service, Gauteng Department of Health, South Africa
3 Department of Family Medicine, University of Pretoria, South Africa
anne-marie.bergh@up.ac.za

Background

‘CLEVER Maternity Care’ is a complex intervention that focuses on health-systems strengthening and quality, respectful obstetric care. It was piloted in Tshwane district in 2016 and is currently rolled out in all midwife-led obstetric units (MOUs) and district hospitals in the district. The rollout includes the implementation of the new intrapartum and hypertensive guidelines and a pilot of the new ‘interim’ partogram. Implementation of interventions are often described in vague terms. This study aims to give an overview of the implementation process with a view to enhance replicability.

Methods. Documents were reviewed, including field notes of implementation team members, attendance registers, miscellaneous reports, EOST topics and scores, and minutes of meetings. Numbers of attendance of meetings and EOST drill scores were calculated. In-depth key-informant interviews with facility and maternity managers were focused on their experience of the implementation of CLEVER. Three in-depth discussions with the CLEVER team members were also audio-recorded, transcribed and analysed.

Results. Results are preliminary. The rollout is currently taking place in the last 5 MOUs, i.e. those that had received the pilot intervention in 2016. The evaluation of overcoming the health-systems gaps is in process and ongoing.

For the 10 facilities receiving the CLEVER intervention in 2019, the CLEVER team conducted 147 visits, with 1167 person-contacts. The mean number of participants per visit ranged from 4.5 to 6.7 for MOUs (n=5) and between 3.0 and 15.1 per visit for district hospitals (n=5).

At least 78 EOST drills were conducted, of which 51 were scored. Drills with the lowest ‘before’ scores were maternal resuscitation, postpartum haemorrhage and shoulder dystocia (mean 48-50%). Mean ‘after’ scores improved to ≥80%.

Major emerging themes from the key informant interviews include improved clinical care, managers felt supported (by the DCST), teamwork that improved morale, improved staff attitudes and behaviour, increased patient satisfaction, health-systems strengthening, staff reception of CLEVER and relationships between doctors and nurses.

Conclusion. After initial resistance for a few weeks, health care providers developed a positive perception of ‘CLEVER Maternity Care’. Because CLEVER is embedded in the health system, district clinical specialist teams and maternal, child and women’s health coordinators are in the ideal position to lead the implementation process in districts and provinces.

Anne-Marie Bergh is a senior researcher as the UP Research Centre for Maternal, Fetal, Newborn and Child Health and the SAMRC Maternal and Infant Health Care Strategies Research Unit at the University of Pretoria. She is responsible for the process evaluation of the rollout of ‘CLEVER Maternity Care’.
PRELIMINARY RESULTS OF THE IMPLEMENTATION OF ‘CLEVER MATERNITY CARE’ IN TSHWANE DISTRICT, SOUTH AFRICA

Sarie J Oosthuizen,1,2,3 Antonella Silver,1 Anne-Marie Bergh,1 Refilwe Malatji,2 Elizabeth Sithole,1 Robert C Pattinson1

1 UP Research Centre for Maternal, Fetal, Newborn and Child Health and SAMRC Maternal and Infant Health Care Strategies Research Unit, University of Pretoria, South Africa

2 Tshwane District Health Service, Gauteng Department of Health, South Africa

3 Department of Family Medicine, Faculty of Health Sciences, University of Pretoria, South Africa
tonella.silver@gmail.com

Introduction

‘CLEVER Maternity Care’ is currently rolled out in all midwife-led obstetric units (MOUs) (n=10) and district hospitals (DHs) (n=5) in Tshwane District, after a pilot in 5 MOUs in 2016. The aim of CLEVER is to improve health-systems performance and quality, respectful birthing care with a view to improve safety, continuity and coordination of obstetric care for all women.

Methods

Implementation started with the following baseline measurements in all 15 facilities: key perinatal indicators (in-facility fresh stillbirths, birth asphyxia, and meconium aspiration); experiences of women who had recently given birth (n=700); and a health-systems functioning check list. This was followed by a staggered implementation of the core intervention that consisted of an intensive engagement period of weekly, structured coaching sessions at handover on site over 3-4 months. These sessions included a behavioural change intervention, clinical capacity building and collaboration with role players. Health-systems gaps and clinical governance were also addressed. End-line measurements to track effects are currently underway.

Results

Data collection for the perinatal indicators have been completed for all facilities until the end of December 2019. Data were aggregated for MOUs from January 2015 to December 2019 and for district hospitals from January 2018 to December 2019. In 2020 this activity will be continued to measure the sustainability of the effect. The table below shows the reduction rates in in-facility fresh stillbirths and perinatal morbidities over the time periods.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>MOUs (n=10)</th>
<th>DHs (n=5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-facility fresh stillbirths /1000 total births</td>
<td>8.35</td>
<td>2.72</td>
</tr>
<tr>
<td>Birth asphyxia /1000 live births</td>
<td>10.41</td>
<td>5.20</td>
</tr>
<tr>
<td>Meconium aspiration /1000 live births</td>
<td>7.95</td>
<td>3.96</td>
</tr>
</tbody>
</table>
End-line data for women’s experiences of child birth are in the process of collection and analysis. For 5 facilities the baseline and end-line measurements have been completed. Below are the preliminary results in key respectful care domains for these facilities.

<table>
<thead>
<tr>
<th>Domain</th>
<th>MOUs (n=3)</th>
<th>District hospitals (n=2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline (n=119)</td>
<td>End-line (n=90)</td>
</tr>
<tr>
<td>Attended to within 15 minutes</td>
<td>80%</td>
<td>96%</td>
</tr>
<tr>
<td>Consent asked for physical examination</td>
<td>73%</td>
<td>89%</td>
</tr>
<tr>
<td>All staff spoke nicely</td>
<td>70%</td>
<td>92%</td>
</tr>
<tr>
<td>Treated with a lot of respect</td>
<td>55%</td>
<td>78%</td>
</tr>
<tr>
<td>Completely satisfied with treatment</td>
<td>63%</td>
<td>90%</td>
</tr>
<tr>
<td><strong>TOTAL MEAN</strong></td>
<td><strong>68%</strong></td>
<td><strong>89%</strong></td>
</tr>
</tbody>
</table>

**Conclusion**

After the implementation of ‘CLEVER Maternity Care’, Tshwane District showed overall improved performance with regard to key perinatal key indicators. The baseline results for some of the respectful care domains were already high. District hospitals had more positive ratings from clients than MOUs at the baseline, with a significant improvement in the end-line scores of MOUs, outperforming the district hospital scores. The results indicate that implementation of the ‘CLEVER Maternity Care’ package is a potential strategy to prepare district-level facilities for the National Health Insurance.

Antonella Silver is a qualified obstetrician. She is one of the lead implementers of CLEVER Maternity Care and has an interest in respectful care.
THE PREVALENCE OF ABNORMAL DOPPLER AND USE OF DOPPLER TO PREVENT UNEXPLAINED STILLBIRTHS IN A LOW RISK PREGNANT POPULATION IN SOUTH AFRICA

TMAG Hlongwane (presenter): SAMRC-UP, Maternal and Infant Health Care Strategies Research Unit
T Cronje: University of Pretoria
BSS Nkosi: SAMRC-UP, Maternal and Infant Health Care Strategies Research Unit
RC Pattinson: SAMRC-UP, Maternal and Infant Health Care Strategies Research Unit
Tsakane.hlongwane@up.ac.za

Background: The assessment of fetal blood flow using Doppler waveform is an innovative method of foetal surveillance- it can be used to identify placental insufficiency. It is a tool to identify foetuses at risk of stillbirth due to foetal growth restriction. In South Africa the largest category of perinatal deaths is 'unexplained intrauterine death'. The majority of the mothers are clinically healthy. It is hypothesised that many of these deaths are due to undetected placental insufficiency.

Aim: To determine the prevalence of raised resistance indices (RI) of the umbilical artery in a low risk pregnant population and to determine if use of a Doppler apparatus can detect fetuses at risk of stillbirth and if the deaths can be prevented?

Design: Cohort analytic study

Setting: Four circumscribed sites in South Africa (Gauteng, North West, Northern Cape and Limpopo).

Method: Pregnant women from the same primary health care clinics and classified as having low risk pregnancies at 28 weeks gestation or more comprised the cohort. A continuous wave Doppler ultrasound (Umbiflow™) was performed between 28 and 34 weeks’ gestation on varying days of the week. Women who had an Umbiflow comprised the study group and those not having an Umbiflow comprised the control group. Women with foetuses identified with a raised RI were referred to a high risk clinic and were managed according to a standard protocol. The outcomes of all the deliveries in the primary health care clinics involved were recorded.

Results: An Umbiflow™ Doppler was performed in 2776 women (study group); of these the pregnancy outcome was available in 2644 foetuses (92.2%); 354 (13.4%) fetuses were regarded as high risk. AEDF was found in 27 (1.0%) of fetuses. There were 26 perinatal deaths in the Umbiflow™ screened group (low risk 22; high risk 4). There were 89 perinatal deaths in the 4664 women attending the same antenatal clinics who did not have an Umbiflow Doppler screening (control group). Their perinatal mortality was 19.1/1000 births, significantly higher than the Umbiflow group (9.8/1000 births) [Risk Ratio 0.50, 95% Confidence Intervals 0.1-0.9].

Conclusion: The prevalence of abnormal Doppler and absent end diastolic flow in this low risk population is 5-10 times higher than previously recorded. (Comparable to what other low risk study in Pretoria found). The Umbiflow screening information used enabled the prevention of a significant number of perinatal deaths.

Tsakane Hlongwane is a Obstetrician and Gynaecologist, working at University of Pretoria and the SAMRC/UP Maternal and Infant Health Care Strategies Unit
INFANT OUTCOMES IN PREGNANCIES ASSESSED AS LOW AND HIGH RISK USING THE UMBIFLOW™ DEVICE

Dr Helen Mulol1,2,3, Prof Ute Feucht1,2,3, Prof Robert Pattison1,2,4, Dr Valerie Vannevel1,2,4
1 Research Centre for Maternal, Fetal, Newborn and Child Health Care Strategies, University of Pretoria
2 Maternal and Infant Health Care Strategies Research Unit, South African Medical Research Council, Pretoria, South Africa
3 Department of Paediatrics, University of Pretoria, South Africa
4 Department of Obstetrics and Gynaecology, University of Pretoria, South Africa
helen.mulol@up.ac.za

Introduction

The Umbiflow™ device has enabled identification of placental insufficiency in pregnant mothers who were considered low risk according to South African antenatal guidelines and who were monitored at 28-34 weeks gestation as part of the UmbiFlow study. The UmbiBaby study is a follow up study to monitor infant growth, body composition and neurodevelopment. This presentation will give preliminary anthropometric and body composition data.

Method

Infant weight, length and body composition (% fat-free mass) were assessed at 6 weeks postpartum in 24 infants. Weight and length were measured and anthropometrical results were age- and sex-normalized using World Health Organisation growth charts. Infant body composition was carried out using the deuterium dilution technique. Of the 24 infants included in this preliminary data, all infants were full-term (gestation ≥ 37 weeks), 6 infants were classified as low risk and 18 infants were classified as high risk using the Umbiflow™ device. Means were compared in the two groups using the t-test.

Results

Mean weight at 6 weeks was higher for the low risk group of infants (4.94 kg) compared to the high risk group (4.49 kg) and length was greater for the low risk group of infants (54.9 cm) compared to the high risk group (53.3 cm), although these differences were not statistically significant. All infants had z-scores above the -2 curve, except for 1 low risk infant who had a length-for-age z-score < -2.

Mean fat-free mass (muscle mass) results were statistically different in the two groups: the low risk group of infants had a higher percentage mean fat-free mass, 87.0% compared to 82.3% in the high risk group (p=0.02).

Conclusions

Umbiflow™ screening has enabled identification of high risk pregnancies and the preliminary results have highlighted differences in the infant outcomes of the low risk and high risk pregnancies at 6 weeks.

Dr Helen Mulol has a Masters degree in analytical chemistry and completed her PhD in the field of Paediatrics. Her research focussed on the use of stable isotopes to determine breastmilk intake and infant body composition and she is currently involved in the follow up of infants born to mothers who were assessed for placental insufficiency using the Umbiflow™ device.
PREGNANCY OUTCOMES OF WOMEN CONCEIVING ON ANTIRETROVIRAL THERAPY (ART) COMPARED TO THOSE COMMENCED ON ART DURING PREGNANCY
Gerhard Theron for the PROMISE (Promoting Maternal and Infant Survival Everywhere) 1077BF and 1077FF Teams

Department of Obstetrics and Gynaecology, Stellenbosch University, Cape Town, South Africa
gbth@sun.ac.za

Background
Globally the number of HIV-infected women of child-bearing age conceiving on ART is increasing. Evidence of ART safety at conception and during pregnancy and adverse pregnancy outcomes are conflicting. The PROMISE 1077 breastfeeding (BF) and formula feeding (FF) international multisite trials provide an opportunity for a post-hoc analysis using robust data from varied settings of pregnancy outcome with subsequent pregnancies.

Methods
The PROMISE 1077BF/1077FF trials were open-label randomized trials designed to address key questions in the management of HIV-infected women who did not meet clinical guidelines for ART treatment during the time of the trial. Women who became pregnant during follow-up subsequent to the index pregnancy, including women with more than one subsequent pregnancy, remained in the study. The pregnancy outcomes of non-breastfeeding women randomized to receive ART following delivery (FF) or breastfeeding women randomized to receive ART following breastfeeding cessation who conceived while on ART (continue ART group) were compared to those commenced on ART when pregnancy was diagnosed.

Results
Pregnancy outcomes of 939 subsequent pregnancies of 826 mothers were recorded. The analysis by intention to treat showed significantly increased low birth weight in the continue ART group, relative risks 2.65 (95% CI 1.20, 5.81), p=0.02. The hazard ratio for spontaneous abortion, stillbirth, or neonatal death in the continue ART group was higher (HR=1.40 (0.99, 1.98), p=0.05).

Conclusions
An increased risk for adverse pregnancy outcomes in women conceiving on ART are reported emphasising the need for improved obstetric and neonatal care for this group.

Gerhard Theron worked in in Malawi rural Eastern Cape. He did his registrar training at Tygerberg Hospital and stayed on as a consultant in the Department of Obstetrics and Gynaecology until retiring as Head of Department in December 2015.
RETROSPECTIVE ANALYSIS OF BIRTH HIV PCR TESTING AND FOLLOW-UP OF POSITIVE HIV PCR RESULTS IN NELSON MANDELA BAY HEALTH DISTRICT
Dr Nomlindo MAKUBALO - Nelson Mandela Bay Health District

princessmakubalo@yahoo.com

BACKGROUND

HIV infection contributes significantly to infant morbidity and mortality, especially in high-prevalence, low-income countries. Early infant diagnosis (EID) and early initiation of combined antiretroviral treatment (cART) improve child survival. In view of this evidence-based knowledge, National Department of Health in April 2015 released the National Consolidated Guidelines of Human Immunodeficiency Virus (HIV) stipulating that all HIV exposed babies should have HIV Polymerase Chain Reaction (PCR) test performed at birth. Early diagnosis means early treatment initiation and reduction in the incidence of early infant HIV-related mortality. However, these guidelines can only be successful if implemented properly across all public sector healthcare institutions. Thus the research question was “How well has the Nelson Mandela Bay Health District implemented the EID”?

AIM

The aim of the study was to review the impact of the consolidated HIV guidelines on birth HIV PCR testing and initiation of treatment in the Nelson Mandela Bay Health District.

METHOD

A retrospective quantitative longitudinal non-experimental design was used. The study consisted of two components: Analysis of NHLS databases, particularly HIV birth PCR results of infants over a three-year period (June 2015 to June 2018) and, analysis of feedback received from the primary health care clinics. The feedback focused on infants with a positive birth PCR test, using a purpose-designed data collection tool that was used by the clinics for the duration of the same three-year period. The tool assessed antenatal care attendance, enrolment into the prevention of mother-to-child transmission (PMTC) programme and initiation of ART.

RESULTS

Over the three year period, there were approximately 13 096 live births to HIV positive women in the study area, and a total of 11 066 HIV birth PCR tests were done over the three year study period (84.5% of HIV exposed infants). The HIV birth PCR was negative in 10 909 (98.6%) neonates, 130 (1.2%) had positive birth PCR and 0.2 % had indeterminate results. The birth HIV PCR positivity rate reduced from 1.4% to 1% over the three year period. Out of the 130 infants with positive birth PCR, the files of 42 children were excluded, and further analysis conducted on the files of 88 infants. ARVs were initiated within 7 days in 9 of the 88 infants (only 10.2%). ARV initiation was delayed among 58 infants (65.9%) and 21 neonates (23.9%) were never initiated on combined ART. In this study population, more than one-third (38.6%) of pregnant women did not attend antenatal care, thus compromising their opportunity to be enrolled on PMTCT programme. Of those who did attend antenatal care, only 39.1% were reported to attend antenatal care before 20 weeks.

CONCLUSION AND RECOMMENDATIONS

The incidence of positive birth HIV PCR has reduced from 1.4% in 2015 to 1% in 2018 whilst there has been increase in HIV birth PCR testing. However, initiation of cART within seven days was done in only 10.2% of infants with positive birth HIV PCR. Implementation of point of care HIV birth PCR testing will ensure that results are immediately available and thus increase the proportion of infants initiated on cART within seven days.

Dr Nomlindo MAKUBALO is a district clinical specialist paediatrician in Nelson Mandela Bay Health District, Eastern Cape
MICROBIOLOGICAL PROFILE OF BLOOD CULTURE POSITIVE ISOLATES IN INFANTS ADMITTED TO THE NEONATAL UNIT OVER A 10 YEAR PERIOD

Claude Ondongo-Ezhet¹, Reenu Thomas¹, Nini Motsoaledi¹, Prenika Jaglal², Jeannette Wadula², Firdose Nakwa¹, Sithembiso Velaphi¹

¹Department of Paediatrics, Chris Hani Baragwanath Academic Hospital and School of Clinical Medicine, University of the Witwatersrand
²Department of Microbiology and Infectious Diseases, National Health Laboratory Services, Chris Hani Baragwanath Academic Hospital and School of Pathology, University of the Witwatersrand

BACKGROUND: Neonatal blood stream infections (BSI) are a major cause of morbidity and mortality. Few studies have reported on BSI in neonates from sub-Saharan Africa. This study aimed to determine the rates, causative pathogens, susceptibility profiles and trends of BSI in the neonatal unit from a hospital in a low- middle income country.

METHODS: This was a retrospective review of all positive blood culture isolates in neonates admitted at Chris Hani Baragwanath Academic Hospital from January 2010 to December 2017. Data on pathogens and their susceptibilities were collected and analysed. Rates and trends of BSI were assessed.

RESULTS: A total of 6413 organisms (excluding contaminants) were isolated from blood, giving a BSI rate of 14/1000 patient-days over this 8 year period. The BSI rate increased from 11.3/1000 patient days in 2010 to 18.2/1000 patient days in 2017. Gram-negative organisms accounted for 55% of all isolates, followed by Gram-positive organisms (26%) and fungi (20%). The BSI rates due to Gram-negative organisms increased over the years, while Gram-positive infections declined, and fungal infections remained unchanged. Common Gram-negative organisms were Acinetobacter baumannii (44%) and Klebsiella pneumoniae (38%). Among Acinetobacter baumannii isolates, 55% were carbapenem resistant, increasing from 13% in 2011 to 70% in 2017. Among the Klebsiella pneumoniae isolates, 91% were ESBL. Carbapenem resistant Klebsiella pneumoniae accounted for 2.6% of all Klebsiella pneumoniae and increased from 0% in 2010 to 9% in 2017. Staphylococcus aureus accounted for 57% of all Gram-positive isolates and 89% were methicillin resistant. The most predominant fungi were Candida parapsilosis (52.8%) and Candida albicans (36.4%).

CONCLUSION: There has been an increase in BSI rates over the years. Gram-negatives have remained the common organisms throughout, but there has been an increase in rates of multidrug-resistant Gram negatives over the years.

Claude Ondongo-Ezhet is a Pediatrician currently working in the department of neonatology and aiming to qualify soon as neonatologist
INFECTION AND ALL-CAUSE MORTALITY RATES DUE TO CARBAPENEM RESISTANT ORGANISMS IN INFANTS ADMITTED TO THE NEONATAL UNIT

Reenu Thomas¹, Claude Ondongo-Ezhet¹, Nini Motsoaledi¹, Prenika Jaglal², Jeannette Wadula², Firdose Nakwa¹, Sithembiso Velaphi¹

¹Department of Paediatrics, Chris Hani Baragwanath Academic Hospital and School of Clinical Medicine, University of the Witwatersrand.
²Department of Clinical Microbiology and Infectious Diseases, National Health Laboratory Services, Chris Hani Baragwanath Academic Hospital and School of Pathology, University of the Witwatersrand

reenu.thomas@wits.ac.za

Introduction: Healthcare-associated multidrug resistant bacterial infections, particularly due to carbapenem resistant organisms (CRO), has been on the rise globally. There are very few reports on the prevalence of CRO from low-middle income countries. This study aimed to evaluate the rates of infection and all-cause mortality due to CRO in infants admitted in a hospital from a low-middle income country.

Methods: Positive bacterial cultures from sterile sites in infants admitted in the neonatal unit in 2018, was retrieved from the microbiology laboratory and reviewed retrospectively. Type of organism, susceptibility results and outcomes were recorded. Among these, the Gram-negative isolates, including the CROs, were extracted. Rates and outcomes were analysed.

Results: In 2018, there was a total of 804 positive cultures (excluding CoNS) from sterile sites, giving an infection rate of 12.6/1000 patient days. Of these 539 (67%) were Gram-negative isolates. The common Gram-negatives were Acinetobacter baumannii (225/539; 42%) and Klebsiella pneumoniae (229/539; 42%). Hundred and seventy-six of the Acinetobacter baumannii isolates (78%) and 75 of the Klebsiella pneumoniae isolates (33%) were carbapenem resistant, accounting for 47% of all Gram-negatives. The rate of carbapenem resistant Acinetobacter baumannii (CRAB) was 2.8/1000 patient days and that for carbapenem resistant Klebsiella pneumoniae (CRE) was 1.2/1000 patient days. The all-cause mortality rate in infants with Gram-negative isolates was 20%. The mortality was 26% in infants with CRAB and 40% in infants with CREs. The all-cause mortality rate in infants with CRO was 30%. The mortality rate in infants with CRO was higher than those with non-CRO (30% vs 11%; p <0.05).

Conclusion: There was a high rate of positive cultures from sterile sites in 2018. Gram-negative organisms predominated, and among these carbapenem resistance was high. CROs were associated with high mortality rate.

Dr Reenu Thomas
Neonatologist working at Chris Hani Baragwanath Academic Hospital.
Special interest in Infectious Diseases
EPIDEMIOLOGY OF CANDIDA AURIS INFECTIONS IN A NEONATAL UNIT

Presenter: Alison van Kwawegen, Department of Paediatrics, Chris Hani Baragwanath Academic Hospital and the University of the Witwatersrand
Reenu Thomas, Department of Paediatrics, Chris Hani Baragwanath Academic Hospital and the University of the Witwatersrand
Sithembiso Velaphi, Department of Paediatrics, Chris Hani Baragwanath Academic Hospital and the University of the Witwatersrand,
Firdose Nakwa, Department of Paediatrics, Chris Hani Baragwanath Academic Hospital and the University of the Witwatersrand,
Elizabeth Motsoaledi, Department of Paediatric Nursing, Division of Infection Prevention and Control, Chris Hani Baragwanath Academic Hospital,
Jeannette Wadula, Department of Clinical Microbiology and Infectious Diseases, National Health Laboratory Services, Chris Hani Baragwanath Academic hospital and the University of the Witwatersrand
Prenika Jaglal, Department of Clinical Microbiology and Infectious Diseases, National Health Laboratory Services, Chris Hani Baragwanath Academic hospital and the University of the Witwatersrand

alison.vankwawegen@wits.ac.za

Background. Candida auris (C. auris) is a multidrug resistant fungal organism, which since 2009, has been known to cause invasive candidaemia in South African hospitals. Candida species cause significant late onset sepsis and mortality in the neonatal population, however there is limited data of the impact of invasive C. auris in the neonatal population. This study aimed to evaluate the rates and outcomes of C. auris blood stream infections (BSI) in neonates during an ongoing outbreak in the neonatal unit at Chris Hani Baragwanath Academic Hospital.

Methods. Sterile site cultures are sent to the laboratory in infants who are suspected to have late onset neonatal sepsis. As part of ongoing surveillance in the neonatal unit, statistics on multidrug resistant organisms are collected on a monthly basis. Among these, C. auris data was extracted and basic demographics, BSI rates and outcomes were analysed.

Results. In the period, June 2019 to January 2020, there were a total of 30 confirmed C. Auris isolates from blood, giving a BSI rate of 0.8/1000 patient days. C. auris accounted for 42 % of all candida species. Males and females were equally affected. The median birth weight of affected neonates was 1600g (630g-3950g) and the median age of onset of infection was 17 days (7-41days). All isolates were resistant to fluconazole with MICs of >256 ug/ml, warranting treatment with amphotericin B and/or micafungin. All-cause mortality was 53% (16/30), while 33% (10/30) of patients are still admitted and 13% (4/30) survived to hospital discharge.

Conclusions There is a high rate of C.auris BSI in the neonatal unit at CHBAH. C. Auris is inherently resistant to fluconazole and is associated with high mortality.
AUDITING USE OF ANTIBIOTICS IN ZIMBABWEAN NEONATES


1Department of Paediatrics and Child Health University of Zimbabwe College of Health Sciences, Harare, Zimbabwe
2UCL Great Ormond Street Institute of Child Health, University College London, London, UK
3Specialist Children’s and Young People’s Services, East London NHS Foundation Trust, London, UK

gwenchimhini@gmail.com

INTRODUCTION

Neonatal sepsis is a major cause of morbidity and mortality in low-income settings. As signs of sepsis are non-specific and deterioration precipitous, antibiotics are often used profusely in these settings where diagnostics may not be readily available. Harare Central Hospital, Zimbabwe, delivers 12000 babies per annum admitting ~4800 to the neonatal unit. Overcrowding, understaffing and rapid staff turnover are consistent problems. Suspected sepsis is highly prevalent, and antibiotics widely used. We audited the impact of a training and benchmarking intervention on rationalizing antibiotic prescription using local, World Health Organization-derived, guidelines as the standard.

Methods

An initial audit of admission diagnosis and antibiotic use was performed between 8th May - 6th June 2018 as per the audit cycle. An intern training programme, focusing on antimicrobial stewardship and differentiating between babies ‘at risk of’ versus ‘with’ clinically-suspected sepsis was instituted post-primary audit. Re-audit was conducted after 5 months.

Results

Sepsis was the most admitting diagnosis by interns at both time points but reduced at repeat audit (81% versus 59%, p<0.0001). Re-audit after 5 months demonstrated a decrease in antibiotic prescribing at admission and discharge. Babies prescribed antibiotics at admission decreased from 449 (98%) to 96 (51%), p<0.0001. Inpatient days of therapy (DOT) reduced from 1243 to 1110/1000 patient-days. Oral amoxicillin prescription at discharge reduced from 349/354 (99%) to 1% 1/161 (p<0.0001).

Conclusion

A substantial decrease in antibiotic use was achieved by performance feedback, training and leadership, although ongoing performance review will be key to ensuring safety and sustainability.

Gwendoline Chimhini, MBChB,MMED Paediatrics and Child Health, MPH. Lecturer Department of Paediatrics and Child Health, University of Zimbabwe. Neonatal Consultant Harare Hospital. Researech interests in Neonatal sepsis, neonatal jaundice antibiotic stewardship and multi drug resistance in gram negative enterobacteriae causing NNS
ESTABLISHING MINIMUM STANDARDS FOR SAFE LABOUR WARD CARE IN SOUTH AFRICA

Neil Moran

Neil.moran@kznhealth.gov.za

Background

Maternal Mortality remains high in South Africa despite a gradual decrease over the past 10 years. In response to the finding that caesarean section was contributing disproportionately to maternal deaths, a workshop was held at the Priorities in Perinatal Care conference in 2015 (held at Champagne Sports Resort, Drakensberg) where caesarean section safety was discussed. This led directly to the NCCEMD (National Committee for Confidential Enquiries into Maternal Deaths) establishing a set of minimum standards for safe caesarean section in South Africa, which any hospital providing a caesarean section service would be expected to comply with. By implementing a caesarean safety programme based on these minimum safety standards, some provinces have begun to successfully reduce the numbers of caesarean-related maternal deaths. Unfortunately, the number of deaths following vaginal delivery has not shown a corresponding decrease. This suggests that there also needs to be a focus on safety of care in labour wards during labour and immediately post-delivery.

It is not just maternal deaths that may be related to unsafe care during labour. The latest NaPeMMCo (National Perinatal Morbidity and Mortality Committee) report has shown no decrease in perinatal mortality rate, with labour-related birth asphyxia being the most common cause of perinatal death when the birthweight is greater than 2.5Kg. Furthermore, alleged substandard care during labour, leading to cerebral palsy is the most common reason for the escalating numbers of medico-legal claims being made against the health services in South Africa.

We encourage all women to deliver in health facilities rather than at home. The assumption is that this will be safer for the woman and her baby. We must then ensure that all designated delivery sites are safe places for women to deliver at. There is therefore a need to establish minimum safety standards for labour ward care in South Africa, in the same way that minimum standards for safe caesarean section have been established. All designated delivery sites would then be expected to comply with these standards. These standards will incorporate elements of respectful care during labour as respectful care is inextricably linked to safe care.

Workshop Outline

The workshop leaders will work through a list of issues relevant to safety during labour, one issue at a time. A list of suggested issues will be drawn up and circulated to all interested delegates at the start of the conference, so that delegates can prepare any inputs in advance of the workshop.

For example, one issue might be "should personal and/or professional companions for the woman in labour be allowed in all labour wards?"

A suggested minimum standard of care will be presented per issue. Then open discussion amongst all delegates will be encouraged with the aim of reaching consensus on that issue.
Issues on which consensus is reached at by the end of the workshop will be taken forward to inform a process of establishing a set of minimum standards for safe labour ward care in South Africa. This process will be overseen by the NCCEMD and NaPeMMCo.

**Workshop Details**

The issues selected for discussion will be limited to those which are felt to be most relevant to ensuring safe care and preventing adverse labour-related outcomes. The objective is to establish a small number of standards, which we know are not being complied with in some or many of our designated delivery sites, and where implementing measures to achieve compliance will improve safety and reduce adverse events. Furthermore, the chosen standards should be easy check on at a facility to confirm compliance.

The workshop is not intended to discuss the management of labour (protocols), but rather to look at the minimum systems including human resources that need to be in place to allow safe care during labour.

The reason for focusing on the “minimum” safety standards is because inevitably labour care in South Africa is provided in a range of different environments, including deep rural and remote facilities. It is not realistic to set standards that could only be achieved in the best resourced provinces and facilities. We must nonetheless determine what is the minimum acceptable standard that is feasible to achieve in all settings in South Africa. The implication is that a site should not be designated as a delivery site if it cannot meet this minimum standard.

The workshop will be a consultative process, which will only be valid if there is representation from a wide range of from clinical settings in different parts of South Africa and from different categories of health workers including nurses and doctors.
ENHANCING EARLY LANGUAGE DEVELOPMENT IN INFANTS BORN PRETERM AND WITH LOW BIRTH WEIGHT. BRIEF EVIDENCE-BASED MESSAGES FOR HEALTH CARE WORKERS TO SHARE WITH PARENTS

Alta Kritzinger, Department of Speech-Language Pathology and Audiology, University of Pretoria
alta.kritzinger@up.ac.za

Introduction: Since the 1990s behavioural research gradually showed that infants born preterm and with low birth weight are particularly at risk of delayed language development. The lower the gestation age and birth weight of the child, the greater the risk. There now exists in vivo evidence that the non-primary auditory cortex, involved in processing of complex sound such as language, matures rapidly between 26 and 42 weeks postmenstrual age. This brain area which is part of Heschl’s gyrus, shows vulnerability for injury and delayed maturation in infants born preterm, and is associated with delayed language development at two years of age (Monson et al., 2018). It therefore appears that the lost auditory processing maturation period in the protective environment of the womb matters greatly in preterm infants. Language impairment is also not the only developmental difficulty that preterm infants are at risk for. Early intervention and parent coaching are effective strategies to prevent or minimise delays in infants. In the absence of speech-language therapists, health care professionals often have the opportunity to share information with parents.

Aim: The aim of the interactive workshop is to focus on short preventative messages that health care workers may share with parents in order to inform families of risks and what they can do about it. The latest evidence in early language learning will be discussed with participants.

Method: During the workshop, the following questions will be considered: Why do preterm babies need extra help with language learning? Which are effective ways of talking to parents about their baby’s language learning? When do babies start learning language? How do they learn language? What is the role of skin-to-skin care in language learning? What is the best way to talk to babies to facilitate language development? Which factors enhance early language learning? What should be avoided? Why and when should preterm babies undergo a hearing screening test? What about bilingual learning? Which professionals can be consulted for further information? Hand-outs with key messages will be available.

Alta Kritzinger is a registered speech-language therapist, volunteering once a week at Kalafong hospital’s Kangaroo Mother Care unit to coach parents. She is a research associate and professor emeritus at the Department of Speech-Language Pathology and Audiology, University of Pretoria. Her interests are early language development, early communication and feeding intervention, and parent coaching. She supervises postgraduate students and has published more than 50 articles.
INTRODUCTION TO CLEVER MATERNITY CARE

Anne-Marie Bergh, Refilwe Malatji, Antonella Silver, Elizabeth Sithole, Sarie Oosthuizen
UP-SAMRC Centre for Maternal, Fetal, Newborn and Child Health, University of Pretoria and Tshwane District Health
Anne-marie.bergh@up.ac.za

Background
The CLEVER Maternity Care is a multi-level intervention developed in South Africa to address respectful, high-quality obstetric care through a health-systems strengthening approach and behaviour change based on insights from neuroscience and cognitive psychology.

Aim
To introduce participants to the CLEVER Maternity Care package.

Objectives
• To introduce participants to the principles of CLEVER Maternity Care
• To demonstrate how CLEVER complements other interventions
• To share experiences of the rollout of CLEVER in Tshwane district and lessons learned
• To share tools developed as part of CLEVER Maternity Care
• To stimulate interest in the implementation of CLEVER in other parts of the country

Who should attend this workshop?
• Health facilities: midwives, obstetricians and medical officers
• Districts: MCWH coordinators and DCST members
• Provinces: Maternal health coordinators
ASSESSMENT AND ACCREDITATION OF NEONATAL SERVICES IN KWA-ZULU NATAL SOUTH AFRICA

Ruth Davidge, KZN Dept. of Health
rdavidge@gmail.com

Background: Despite an understanding of the cause of neonatal deaths and targeted programs to improve clinical care rendered, neonatal mortality remains stubbornly unchanged in South Africa.

Objective: To develop and roll out a neonatal accreditation program aimed at strengthening clinical governance processes and standards of neonatal care in 51 hospitals in Kwa-Zulu Natal province and to acknowledge the best performing facilities. In this way more focused interventions and support can be given to poorly performing facilities and facilities are motivated to improve their own services.

Methods: Multiple tools were used to assess input, process and output components of neonatal care including: infrastructure and equipment; support services; human resources; systems; unit audits; record/clinical reviews, assessment of staff skills and interviews with mothers. Accreditation was based on scores achieved in 15 domains, sub minimums and critical items.

Results: Overall scores for accreditation ranged between 57-93%. Gaps in input, process and output indicators were easily identified. Mothers reported high levels of satisfaction with care received. Record reviews identified shortfalls in care provided, and skills assessments showed poor resuscitation skills in labour wards in some hospitals. Of 51 hospitals, 11 were awarded silver and 9 were awarded gold accreditation status. None achieved platinum status.

Conclusions: This accreditation of newborn care provides a workable model for undertaking assessment of neonatal services in developing countries and can be used by managers to identify and address shortfalls in care. Regular accreditation would support ongoing quality improvement in neonatal care and such a process could be applied to other aspects of care in health facilities. (259)

Ruth Davidge is a neonatal nurse currently employed as the Neonatal Program Manager by the KZN Dept. of Health. She is the founding President of the Neonatal Nurses Association of Southern Africa.
DEVELOPMENT OF AND SUPPORT FOR IMPLEMENTATION OF AN ESSENTIAL PACKAGE OF NEONATAL CARE IN KWA-ZULU NATAL (KZN) SOUTH AFRICA

Ruth Davidge, KZN Dept. of Health
rdavidge@gmail.com

**Background:** In 2015 the quality of neonatal care in 51 hospitals in KZN was assessed with a wide range in achievement. The impact of the assessment was quite short term and it was evident that standards of care slipped over time. The National Dept. of Health introduced District Clinical Specialist Teams (DCSTs) to support Hospitals with improving standards of Maternal, Neonatal and Child Health and recommended regular facility assessments by these teams.

**Objective:** To develop and roll out a system of standardised facility self-assessment and support tools based on national recommendations and previous accreditation tools and a provincial reporting structure based on these assessments.

**Methods:** Task teams were established to review existing tools/records and to compile standardised records, systems, audit tools and a reporting framework for use at all 51 hospitals. This process occurred over about 3 years. Orientation workshops were held for all facilities and weeklong training for the DCSTs. The tools are being rolled out over an 18 month period and a staged implementation of scoring and reporting will occur from April 2019.

**Results:** 14 assessment, multiple systems tools, record and skills audits and maternal interviews et al were developed. Assessment tools ranged from Infrastructure and equipment to monitoring and evaluation. Systems tools included Equipment and Procurement registers et al.

**Conclusions:** Despite initial resistance and severe staff shortages the systems have, in general, been well accepted particularly from the nursing staff. Greater integration of care and appreciation of respective roles and responsibilities is occurring particularly by medical staff. Ongoing implementation and monitoring will be supported through standardised reports from Outreach doctors and DCSTs. The use of a standardised Dashboard for scoring each facility will assist districts and the province to identify and support poorly performing hospitals and acknowledge high performers. This system will hopefully improve neonatal outcomes. (299)

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Ruth Davidge is a neonatal nurse currently employed as the Neonatal Program Manager by the KZN Dept. of Health. She is the founding President of the Neonatal Nurses Association of Southern Africa.
KANGAROO MOTHER CARE TRANSPORTATION OF THE NEWBORN BY EMERGENCY MEDICAL SERVICES IN JOHANNESBURG DISTRICT

Ramatsimele Mphahlele, Johannesburg Health District
Mimie Jordaan, Johannesburg Health District
Denver Ramnarain, Lebone College of Emergency Care
Naseerah Raymond, Johannesburg Health District
Werner Van Der Westhuizen, Lebone College of Emergency Care
Sandile Gwayi, Johannesburg Health District

Shadi.tsitsi@gmail.com

Introduction. Newborn infants transported by the Emergency Medical Services (EMS) often arrive cold at referral hospitals or Midwife Obstetric Units in our district. The use of the Kangaroo position (skin-to-skin) has been found to be very useful in transporting particularly small infants, especially if a transport incubator is not available, to prevent infants from becoming cold. This was conceptualised as an MEC’s 100 Days Project.

Method. Study Type: A proof of concept quality improvement project with collaboration from Lebone College of Emergency Care and Johannesburg District EMS.

Aim. To train the paramedics in Johannesburg to implement Kangaroo Mother Care Transportation for low birth weight and Born Before Arrival babies who are transported from home or between facilities in the Chris Hani Baragwanath Cluster of the district in order to reduce the number of infants arriving at referral facilities cold. This was subsequently broadened to include paramedics across the 5 districts in Gauteng Province.

Objectives:

1. To train 400 paramedics in Gauteng on transportation of the newborn in the kangaroo position in approximately 90 days.
2. To conduct a baseline, intermediate and final audit on the number of newborns arriving hypothermic after transportation by EMS to Chris Hani Baragwanath Neonatal Unit.
3. To conduct a Community Education campaign on Kangaroo Mother Care with the district's Communications Unit.

Results 535 Paramedics from all districts in Gauteng were trained in 13 weeks. 38% of newborns transported by paramedics were hypothermic prior to the intervention; 33% after 6 weeks and 20% at final analysis. Limitations include infants with no documented temperatures and no way to document evidence of use of kangaroo transportation.

Conclusion. Proportions of newborns with hypothermia decreased across the period of analysis. Coverage of trained paramedics still needs to be increased and follow up documentation of practice is planned.

Dr Mphahlele is a member of the District Clinical Specialist Team in Johannesburg District and has worked in the team since 2012.
CLINICAL OUTCOMES OF MAGNESIUM SULPHATE ON LOW BIRTH WEIGHT BABIES
Drs T’Odubunni, F. Nakwa, L Sepeng
Department of Paediatrics
Chris Hani Baragwanath Academic Hospital
teeboy976@yahoo.com

INTRODUCTION:-
Magnesium sulphate (MgSO4) has been used for neuroprotection in the management of pre-eclamptic (PET) mothers at a lower gestational age and is recommended for use in preterm deliveries less than 30-32 weeks of gestation.

AIM:-
The aim of the study was to assess if the administration of magnesium sulphate improved the neonatal outcome in LBW infants whose moms received magnesium sulphate as part of clinical care.

METHODS:
A retrospective case-control record review over a two-year period (2016-2017). Data was collected and entered into a REDCAP database. Low birth weight (LBW) preterm infants admitted to the neonatal unit, whose moms either received magnesium sulphate were identified. Infant characteristics and outcomes were analysed using STATA.

RESULTS:
A total of 484 (7.3%) LBW infants whose moms received magnesium sulphate were admitted. 144 (28%) mothers were HIV positive; 343 (72%) received antenatal steroids.

Pre-eclamptic toxaemia and imminent eclampsia 231(48%) were the main indications for MgSO4 administration. There were 9 (2%) multiple pregnancies. 90% of patients delivered by Caesarian section, due to fetal distress (41%). Ten percent (48) were hypotonic and median 5 minute Apgar score was 9 (8-10). 168 (35%) were ventilated with positive pressure ventilation. Median birthweight and gestational age was 1415 (1085 -2950) and 31 (29-33), respectively. Respiratory distress syndrome (RDS) was the main diagnosis, 399 (82%). Magnesium levels were collected in 34 (7%) infants.

Bronchopulmonary dysplasia was reported in 3 (0.21%) infants, 2 (0.2%) had Grade 1 IVH, NEC was diagnosed 8 (1.7 %) and 23 (4.85%) infants demised.

CONCLUSION:-
Magnesium sulphate was given as per protocol. A small proportion of infants were hypotonic at birth. A third required positive pressure ventilation. Magnesium levels were inconsistently taken and numbers too small to analyse. Comparisons between the infants whose moms did not receive magnesium sulphate needs to analysed.

Dr Temitope Odubunmi is currently a registrar in the department of paediatrics at the CHBAH.
Review of Neonatal Mortality Rate and Avoidable Factors in Edendale Hospital

Dr P Seonandan. Edendale Hospital; Pietermaritzberg Complex; Kwazulu Natal

pratheeshas@gmail.com

Background:

Neonatal mortality rates (NMR) in sub-Saharan Africa have failed to show a significant decline despite interventions/strategies instituted to overcome this. There may be numerous reasons for this, including the fact that more deaths are reported even if they do not occur within a facility. However, another possibility is that the current strategies may not be practised by all.

Objectives:

1. To review the trend in NMR at Edendale Hospital
2. To review the avoidable factors associated with neonatal mortality at Edendale Hospital

Methods:

Neonatal mortality rates for the period between 2011 and 2018 were reviewed. Data was extracted from the PPIP database. Further review of avoidable factors was done to ascertain any obvious trends.

Results:

Neonatal mortality rates varied from 12.6 per 1000 live births at its lowest in 2011 to 15.7 in 2015. When data was adjusted to exclude all neonates below 1000g, the NMR showed significantly lower results. The perinatal care index (PCI) at Edendale Hospital remained between 2 and 2.5. However, the PCI when analysed for all neonates above 1000g has remained consistently below 2. Analysis of avoidable factors revealed patient associated factors made up anywhere between 53% to 83% of avoidable factors. Recurrent factor among the medical personnel associated factors was nosocomial infection. In terms of avoidable factors, data input in the PPIP program was suboptimal.

Conclusion:

Neonatal mortality rates in Edendale Hospital are very similar to national NMR. In terms of avoidable factors, more effort needs to be placed on better input of data into the PPIP program. However, from the data available, areas of concern can be addressed. Apart from interventions within Edendale hospital, community education has to occur to affect any major changes.

Pratheesha Seonandan is neonatologist working at Edendale Hospital
TRENDS IN NEONATAL MORTALITY IN A REGIONAL HOSPITAL IN THE EASTERN CAPE: QUALITY IMPROVEMENT IN ACTION

Mackay CA, Khan F, Maharaj S, Smit JS, Jeziile N
cmackay@mweb.co.za

**Background:** Dora Nginza Hospital in Nelson Mandela Bay had one of the highest neonatal mortality rates (NMRs) in South Africa in 2016 with an institutional NMR of 32.5/1000 live births. Several quality improvement strategies were introduced between 2016 and 2020 in order to improve neonatal outcomes.

**Aims and Objectives:** The aim of the study was to report changes in neonatal mortality at Dora Nginza Hospital in the Eastern Cape, using available data from 2016 as baseline.

**Methods:** A retrospective review of monthly unit-based neonatal statistics and morbidity and mortality audits was conducted. The primary outcome of the study was neonatal death rates (NDR) by month and year from 1 January 2016 to 31 December 2019. Secondary outcomes included early (ENDR) and late neonatal death rates (LNDR) by year, annual neonatal death rates according to birth weight categories ≥500g and ≥1000g, and major causes of neonatal deaths annually. Chi square test and relative risk were used to compare differences in outcomes and \( p < 0.05 \) was considered statistically significant. Ethics approval for the study was granted by Walter Sisulu University (001/2020) and Eastern Cape Department of Health (EC_202002_003).

**Results:** NDR declined at a rate of 4.5 deaths per 1000 live births annually from 32.5 / 1000 live births in 2016 to 19.0 / 1000 in 2019 (\( p < 0.005 \)). Reduction in ENDR was statistically significant for infants of all birth weight categories (\( p < 0.005 \)) but was not significant for LNDR (\( p (LNDR\geq500g) = 0.167 \) and \( p (LNDR\geq1000g) = 0.87 \)). Relative risk of early and/or late neonatal death was 0.59 (0.48 – 0.72) in the ≥500g birth weight category (\( p <0.005 \)) and 0.69 (0.53 – 0.91) in the ≥1000g birth weight category (\( p \approx 0.008 \)). The total number of deaths due to prematurity decreased by 63.9% from 108 in 2016 to 39 in 2019 (\( p<0.005 \)). There was a 12.5% increase in deaths due to congenital abnormalities from 24 in 2016 to 27 in 2019 but this did not reach statistical significance (\( p = 0.051 \)). There was no significant difference in the number of deaths due to infection, intrapartum events or other/uncategorised causes.

**Conclusion:** There has been significant improvement in neonatal survival at Dora Nginza Hospital over the last four years, mainly due to a decrease in early neonatal deaths related to prematurity. Strategies to improve infection prevention and control (IPC), reduce adverse intrapartum events and streamline organisation and integration of district and regional neonatal services will be fundamental to ongoing quality improvement.

Cheryl Mackay is a paediatrician and neonatologist from Port Elizabeth. I completed by undergraduate and postgraduate training at WITS and now the head of the neonatal unit at Dora Nginza Hospital in PE.
Mediclinic Southern Africa (MCSA) has 27 Neonatal units, with a total of 293 beds, submitting data to the Vermont Oxford Network (VON), with two units submitting since 2001. There are currently > 50 000 babies loaded on VON for MCSA. Data from 2014-2019 from the very low birth weight database will be retrospectively reported. During this time 3930 babies were captured - a total of 14% of all NICU admissions. The VON VLBW database captures information on all babies admitted to NICU weighing less than 1500g or ≤ 29 weeks and 6 days gestation.

Data for the following key performance areas will be discussed - mortality, chronic lung disease, retinopathy of prematurity (ROP) screening and severity, late infections, and necrotizing enterocolitis (NEC). Outcomes will be compared to the VON database, and comparison variations between individual MCSA units shown. Very few MCSA units show sustained improvement and generally there is huge variation year on year. This can be attributed in part to nursing staff leadership and experience, doctor treatment plans and lack of uniformity and current best practice being followed.

Mortality data for the extremely low birth weight premature baby in the 24-26 weeks gestational age group shows a median of 51 compared to VON at 21. In the 27-29 weeks gestational age group the median is 15 compared with VON at 5.3. In the older population from 30 weeks up there is little difference between MCSA and VON mortality.

Qualified with the certificate in Neonatal Intensive Care from Johannesburg Hospital in 1991. Worked in a large private neonatal unit for 27 years being unit manager for the last 15. Was part of the first neonatal units to submit data from Africa to the Vermont Oxford Network. For the past 5 years have overseen all mother and child nursing matters, including risk management in MCSA.
KNOWLEDGE LEVELS AND THE VIEWS OF EASTERN CAPE PROVINCE TEACHERS REGARDING THEIR TEACHING OF THE REPRODUCTIVE HEALTHCARE SUBJECT

T. Hendricks; S. James & B. Sonti
Nelson Mandela University. Port Elizabeth 7000
thenjiwehendricks@gmail.com

One of the focus areas for teaching responsibility is development of the individual learner to be a competent community member, either as a professional or as an otherwise-skilled person. It is therefore for that reason that the South African government introduced into the curriculum at school level a subject that is directed at life orientation to empower learners. Teachers bear the responsibility of teaching this subject. One of the topics in the Life Orientation subject is Reproductive Healthcare, which is supposed to empower the learners especially with matters of sex and sexuality, diseases included. Despite the teaching of this topic in schools, the rate of teenage pregnancies and occurrence of sexually-transmitted infections remains on the increase in the country.

This study aimed at exploring and describing the knowledge and views of teachers regarding their responsibility of teaching reproductive healthcare to school going teenage girls. A qualitative, exploratory, descriptive and contextual research design was utilised. Fourteen semi-structured digitally voice captured focus group interviews and four narrative questionnaires were undertaken for data collection purposes. Twenty teachers working in the Sarah Baartman, Makana district and Nelson Mandela Bay Municipality areas of the Eastern Cape Province were purposively selected to participate in the study. The study was conducted from March to December in 2017. The collected data was analysed following the spiral data analysis method and three main themes emerged.

Findings indicated that despite the teachers relating positively to the need of teaching the topics about reproductive healthcare at schools, their limited knowledge on the subject was found to be significantly affecting teaching. The information generated together with the Health Promotion Model adopted for this study, assisted with the recommendation and development of guidelines to assist school teachers on how best to meet their responsibility of teaching the reproductive topic to teenage girls in the Eastern Cape Province

Thenjiwe Hendricks ADM: Bcur Hons in midwifery and neonatal Science- Master of Nursing in Research
STRENGTHENING RESPONSIVE CARE IN THE HEALTH SYSTEM: THE 1ST 1000 DAYS IBHAYE LENGANI BLANKET SYMBOL PROJECT – A HOME VISITING PROGRAM FOR HIGH RISK MOTHERS IN PREGNANCY AND AFTER BIRTH IN THE WESTERN CAPE

*Malek, E. **Goeiman H.***Pegram E. ***Rozenthal-Thresher R.

*Dept Paediatrics & Child Health, Tygerberg Hospital, University of Stellenbosch

**Western Cape Provincial Health, Service Priorities – 1st 1000 Days Initiative.

***CEO, Dhlalanathi

Elmarie.Malek@westerncape.gov.za

INTRODUCTION

*Ibhayi Lengane* (meaning *baby’s blanket*) is designed as an ‘add-on’ intervention, to augment the existing program of health care and nutritional interventions currently being delivered by Community Health Workers (CHW’s) working for the Department of Health in South Africa. The *Ibhayi Lengane* intervention proposes that the quality and effectiveness of a mother’s responsive care for her baby is influenced primarily by her emotional well-being, her skills, confidence and capacities, as well as by the support of those close to her (in most cases her partner and family). This is even more so in families facing many cumulative and concurrent risks that may reduce their capacity to engage in out-of-home activities. Without a supportive relationship between a home visitor and a mother, and mother and family, interventions delivered in the home are unlikely to be effective. The central principle guiding *Ibhayi Lengane* is that fostering the responsive care framework which is needed for child development, requires at its core, that the helper or home visitor should role model the same sensitive and caring approach towards the mother that they expect a mother to provide to her child. A pilot study in the Kwa-Zulu Natal Province demonstrated the feasibility of the program to be successfully implemented within Provincial Health structures. *Ibhayi Lengani* has the potential to increase the quality of CHW work at a community level, to improve maternal mental health, and also acts as an important early warning system for highly vulnerable families. Intervening in these highly vulnerable populations has large potential to improve maternal and child health, reduce morbidity and mortality, and in the longer term to improve child development. Furthermore, the levels of risk amongst these families also make the delivery of *Ibhayi Lengani* achievable at a reasonable cost, relative to the expected gains. The Western Cape Provincial Health Department (South Africa) has prioritised the 1st 1000 Days Initiative within a broader Whole of Society Approach, with the aim of ensuring that pregnant women and mothers are physically and mentally healthy, nurtured and supported and that children at 2 years are resilient and able to reach their full potential. Through its partnership with Dhlalanathi, the Western Cape Provincial Department of Health is incorporating the *Ibhayi Lengane* Relationship add-on Tool package for CHW’s within its 1st 1000 days Parent and Caregiver Support package.

AIMS/PURPOSE

The aim of this project is to ensure the provision of psychosocial and emotional support to high risk mothers in pregnancy and the 1st 2 years of their child’s life by community health workers through structured home visits. The implementation adopts a collaborative learning and partnership process and is framed within a broader aim of building capacity for relational competency in the 1st 1000 Days.

DESCRIPTION

Using a relationship-based approach, the intervention targets change in both the CHW and in the mother. The methodology for this change is operationalised through experiential learning and activity. The *Ibhayi*
Lengane add-on includes two components: (i) Firstly, it provides *training and appropriate supervision for CHWs* to enable and empower them to work from within a relationship-based approach to deliver maternal and child health care, responsive care and stimulation training, (ii) Secondly, it provides *curriculum for 12 home-based sessions* with activities and materials to support the CHW to deliver programming content in support of the first 1,000 days in a community setting context.

**CONCLUSIONS.** The partnership between Dlalanathi and the Western Cape Department of Health has provided both a platform and a process of exploring the fit and feasibility of Ibhayi Lengane for the Western Cape setting. Training has been completed and implementation is underway. Findings confirm that integration into Western Cape Department of Health structures is not only feasible but also highly acceptable to both provincial and district health stakeholders and to the community health workers delivering it.

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Elmarie Malek is the Head of General Paediatrics and Newborn Specialist Services at Tygerberg Hospital in the Department of Paediatrics at Stellenbosch University. She is a core member of the WCape Provincial Health 1st 1000 Days Executive Committee.
ANTENATAL INTERVENTIONS TO PROMOTE EARLY CHILD DEVELOPMENT: A SCOPING REVIEW

Camden-Smith, TEC; Slemming, W
1School of Public Health, University of the Witwatersrand, Johannesburg, South Africa
2Department of Paediatrics and Child Health, School of Clinical Medicine, University of the Witwatersrand, Johannesburg, South Africa

taryncamdensmith@gmail.com

Background: Forty three percent of children in low and middle income countries are not reaching their developmental potential. The first 1000 days of life (including pregnancy to two years old) is a critical period for child development. A window of opportunity to start promoting this may lie in routine antenatal care visits. This scoping review aimed to identify antenatal interventions that promote early child development to inform policy, practice and research.

Methods: The scoping review utilised the Arksey and O’Malley methodology with refinements by Levac, Colquhoun and O’Brian. Databases (PubMed, Cumulative Index of Nursing and Allied Health Literature (CINAHL), MEDLINE and PsycINFO), grey literature databases (OpenGray and WorldCat) and relevant websites were searched for key terms. Inclusion/exclusion criteria were applied to select relevant articles. Data were captured using a chart developed by the researcher.

Results: Of 14094 articles found using the search strategy, 17 articles met all the inclusion criteria. Themes that emerged are (i) group antenatal educational programmes, (ii) foetal awareness programmes, (iii) prenatal sensory stimulation programmes and (iv) home visits.

Discussion: Group antenatal education sessions mostly targeted maternal-foetal attachment, with paternal-foetal attachment being an emerging topic area. Significant improvements in parental-attachment were found but not when the antenatal curriculum had numerous topics. Foetal awareness programmes such as foetal movement counting, Leopold manoeuvres and “Qi” improved maternal-foetal attachment and post-natal mother-infant interactions, however not consistently. Prenatal sensory stimulation (such as listening to music and dancing during pregnancy) did not enhance attachment, but mothers singing lullabies improved maternal-foetal attachment. Antenatal home visits may be promising following further research. Currently, there are missed opportunities in the health system, given the eight antenatal visits and one routine ultrasound encounter, to promote early child development during pregnancy. However, the evidence is not clear on which types of interventions would be most beneficial. Further research on this topic is warranted, as well as research with a particular focus on high risk groups and including fathers in care.

Keywords: antenatal; pregnancy; child development; attachment; bonding; responsive caregiving

Taryn is a Physiotherapist and 3rd year Masters of Public Health student at Wits. She is within the Maternal and Child Health MPH stream. One of her areas of interest is public health approaches to early childhood development.
A DESCRIPTIVE STUDY OF THE OBSTETRIC AND NEONATAL OUTCOMES OF ADOLESCENT PREGNANCIES AT A TERTIARY ACADEMIC HOSPITAL (PRELIMINARY RESULTS)

E. Cremona 1, J. Jeebodh 2,3, F.L. Nakwa1,3
1 Department of Paediatrics, University of the Witwatersrand
2 Department of Obstetrics and Gynaecology
3 Chris Hani Baragwanath Hospital and the University of the Witwatersrand
lorentz.elena@gmail.com

Introduction: Adolescent mothers tend to have a high risk of maternal morbidity and mortality and poorer perinatal outcomes.

Objectives: To describe the demographic parameters and obstetric and neonatal outcomes of adolescent females at a tertiary academic hospital in 2015. Furthermore, to determine predictors of maternal, perinatal and neonatal death within the study population.

Methods: This was a retrospective study of adolescent (12-19 years old) antenatal and maternal records, who delivered at a tertiary academic hospital or who were referred in the perinatal period. Relevant neonatal records were reviewed.

Results: One thousand six hundred adolescent maternal records were reviewed, accounting for 7.87% of all births. 18-year-olds were the most frequent at 460 (28.75%). 987 (61.69%) were attending formal education, and 564, 35.25% were unemployed. 804 (50.25%) accessed antenatal care following 20 weeks’ gestation. 183 (11.44%) had previous pregnancies. 143 (8.94%) mothers had Human Immunodeficiency Virus (HIV) and 85 (59.44%) were newly diagnosed. Gestational hypertension was diagnosed in 199 (12.44%) adolescents and hypertension related complications occurred in 109 (6.81%). Post-partum haemorrhage (PPH) complicated 98 (6.12%) of deliveries. 30.88% deliveries were by caesarean section. There was a high rate of perineal injuries. There were no maternal deaths.

Of the 1604 babies born, 2.37% were stillborn and 16.02% required admission and of admissions, 11 (9.65%) are known to have demised. Premature births accounted for 410 (25.56%) and 279 (17.39%) weighed less than 2500g. The most prevalent indication for neonatal admission comprised respiratory causes, 75 (29.18%), sub-aponeurotic haemorrhage (SAH), 15 (5.84%) and neonatal encephalopathy (NNE), 13 (5.06%).

Conclusion: Twenty percent of neonates born to adolescent mothers had adverse outcomes or required admission. A significant proportion of premature births and low birthweight neonates are born to this vulnerable maternal age group. Numerous school-going pregnancies and adolescents in their second or third pregnancies require a social intervention addressing sexual education and contraception.

Elena Cremona has recently completed her paediatric training at the University of the Witwatersrand. She currently works at Thelle Mogoerane Regional Hospital. Her interests include community and ambulatory pediatrics.
Providing preterm infants' parents with BILS knowledge and skills could empower them to save their infants' lives after discharge. Smaller preterm infants are discharged in a clinically stable condition. However, these infants still have immature systems which put them at risk of apnoea, infections, and sudden infant death syndrome (SIDS). They are discharged to socioeconomic circumstances that pose risks of smoke inhalation and unhygienic circumstances, which could result in death within the first week after discharge. The purpose of this study was to explore the perspectives of preterm infant's caregivers about the pre-discharge BILS skills training at Mowbray Maternity Hospital (MMH).

The study was conducted as a qualitative descriptive single case study with two embedded units of analysis. Multi-method data collection included Individual semi-structured in-depth interviews with four parents and four health care professionals and two focus group discussions with midwives. The participants were sampled purposively at MMH. Qualitative data analysis was done through coding categorising and theme formation. Three themes emerged from the first unit of analysis were: importance of BILS training, discharge information and development factors identified. Three themes that emerged from the second embedded unit of analysis included: Rationale for BILS training before discharge, BILS training provided and supporting factors.

**Conclusion**

The HCPs perspectives are that preterm infants are still at risk of life-threatening events which could result in death soon after discharge. The BILS training empowered preterm infant parents to save their infants lives after discharge. Recommendations were made to improve the BILS training programme at the hospital.

**Key words:** Preterm infants, caregivers, basic infant life support, training, pre-discharge planning

Beatrice, holds a Master's Degree in Nursing. She found her niche in Neonatology and is currently the Head of the Nursing Education Department at Mowbray Maternity Hospital.
'What happens when we separate a mother and baby?  MATERNAL INFANT SEPARATION…….THE NEUROSCIENCE OF NEONATAL CARE. THE IMPORTANCE OF THE PRESENCE OF THE MOTHER FOR THE FIRST THREE YEARS IN A CHILDS LIFE…..BUILDING AN EMOTIONAL SOLID SOCIETY

Vanessa Booysen.

Neonatal Nursing Specialist. Lecturer UFS. Master Trainer in Newborn Care.
vanesooyen@gmail.com

BACKGROUND

"Kangaroo Mother Care is a Basic Right of the newborn, and should be an integral part of the management of low birth weight and full term newborns, in all settings and at all levels of care, in all Countries." – Bogota Declaration 1989.

KMC, skin to skin of a mother and a baby, has been widely accepted and adopted as an interim practice, directly after birth…but this practice needs to be prolonged and implemented even in our affluentual societies.

The newborn is emotionally, physically, nutritionally and security/safety wise 100% dependant on the mother’s presence 24hrs a day for the first 3 years of life.

Maternal separation (nurseries in hospitals, caesarean section separation, babies sleeping away from their mothers, own bed, own bedroom) is a major stress factor for the vulnerable newborn, which increases cortisol and disrupts the development of new neural pathways.

THE MOTHER is the key to neurodevelopment ...... because she is the RIGHT PLACE!!

It matters how we are born! It influences our emotional and social development, our future Emotional Quvalance and our life long emotional wellbeing.

"It is easier to build strong children than to repair broken men."

Frederick Douglass (1817–1895)

Vanessa Booysen is a Neonatal Nursing Specialist with 25 year's experience in both Private and Public Health Care, supporting the NDoH on life saving strategies as MSSN and HBB doing training and scaling up hospital practices. She is currently a Lecturer at the UFS
IDENTIFYING THE TARGET GROUPS FOR EDUCATIONAL OUTREACH TO REDUCE BBAs IN MANGAUNG

S. Dywili¹ and Prof. W. J. Steinberg²
¹Free State Department of Health, FSCoEC, ²Department of Family Medicine, UFS

sidney.dywili@gmail.com

Introduction: Pre-hospital emergency care personnel, well known as Emergency Medical Services (EMS) personnel, provide emergency medical care and transportation of ill and injured patients, including pregnant mothers to hospital. They would arrive at these pregnant mothers’ homes and find them already in labour and would have to deliver babies at patients’ homes or in the back of an ambulance on the way to hospital or the maternity clinic. Some of these Births Before Arrival (BBAs) tend to have adverse neonatal and maternal outcomes.

Aim: The aim of this study was to investigate the local causes or contributing factors leading to BBAs in the Mangaung area to identify the target groups for educational possibilities to reduce and/or prevent further unnecessary BBAs.

Design and Method: The study was conducted over a period of six months in order to establish the local causes of BBAs so as to identify the target groups for educational outreach to reduce BBAs in the Mangaung area. All births that occurred outside of or before arriving at the health facility in the Mangaung area were transported to National District Hospital with the assistance of EMS, including those who used private transport. A data collection tool was utilised for data collection with a number of open-ended questions. This was a quantitative study with qualitative elements and consisted of 240 participants.

Results: BBA participants were more frequently multiparas than the control participants. About 10% of BBA mothers did not attend the antenatal clinic (ANC) check-ups in comparison to only 2.5% of the control participants. There were more BBA participants that delivered at a gestation period of less than 37 weeks. It was discovered that very few ambulances had responded within the first hour of being called, in the BBA participants’ group compared to the control participants. This thus suggested that the delay of the ambulance arrival contributes significantly to BBAs. The other contributing factor to BBAs was distance from the health facility, about 42.5% of all participants lived within 19.9 km to the health facility, while 3.8% lived between 20 and 39.9 km and more than 40% lived further than 60 km.

Conclusion: BBAs are associated with “unbooked” status, preterm births, distance to health facility and delayed transportation. The target groups for educational outreach included ambulance personnel, antenatal health care personnel and the pregnant mother.

Deputy Principal at the Free State College of Emergency Care
QUALIFICATIONS:
MASTER’S IN HEALTH PROFESSIONS EDUCATION
BTECH EMERGENCY MEDICAL CARE
HIGHER CERTIFICATE IN MANAGEMENT
CERTIFICATE IN THEOLOGY.
PREVENTING CHILDHOOD INJURIES THROUGH EDUCATIONAL POSTERS

Mtambeka P, du Toit N, Schulman D, van As AB
Childsafe South Africa, Red Cross Children’s Hospital
Pumla.Mtambeka@westerncape.gov.za

BACKGROUND: Since 1991, Childsafe South Africa has gathered available statistics on childhood injuries and deaths presenting at Red Cross War Memorial Children’s Hospital Trauma Unit in Cape Town, South Africa. This database serves as a surveillance system on childhood injuries and it is considered to be one of the biggest paediatric injury databases. The database has been systematically analysed for a large number of clinical and epidemiological studies as they relate to childhood injuries. Childsafe South Africa collaborated with relevant stakeholders and developed educational posters that convey universal safety information and recommendations for families, crèches, and care givers, based on the statistics from the database.

METHODS: A series of three educational posters (1) “Growing Safely” (2008), (2) “Living Safely” (2010), and (3) “Travelling Safely” (2011) were developed encompassing the various characteristics of children throughout their development and providing corresponding harm reduction principles. These posters identify the early developmental limitations of the children; recognize typical injuries within specified age groups (from the database); illustrate the best practice scenario and best prevention are organized by age and are coloured with detailed pictures of accident precautions and suggestions.

RESULTS: “Growing Safely” is an international award winning poster and depicts the child from birth until age six. It raises crucial awareness by providing safety recommendations, by age, for fall prevention, drowning risks, car safety, and the dangers of common household items. The “Living Safely” poster was designed in response to a growing number of hot water burns and flame burns. Thus, “Living Safely” is formatted in the same award winning design and addresses burn risks and fire safety. The topics portrayed in “Living Safely” include; sunburn protection, hot water burn prevention, electrical cord/outlet recommendations, and proper fire extinguishing directions. The most recently developed poster, “Traveling Safely” illustrates age appropriate vehicle restraints, helmet and safety guard suggestions, street crossing advisory, and tips for proper bicycling. To provide such imperative information, the three posters have been translated into local languages.

CONCLUSION: The Childsafe South Africa posters have been well received and regarded as best educational tool not only in South Africa but around the world. People are able to connect with messages as it’s extracted from simple situations that take place on daily basis. Images of real people (children) are being used and the pictorial depictions overcome literacy levels.

KEYWORDS: Educational poster, growing safely, living safely, travelling safely, childhood injuries, database

Pumla Mtambeka-Nyakaza. Obtained a degree in Social Sciences at the University of the Western Cape in 1997. Is a registered social worker and has been in practice for more than 20 years. Currently doing Masters in Public Health at UWC(final year)
A MATERNAL MENTAL HEALTH WORKSHOP
Prof Salome Maswime, Obstetrician and Gynaecologist, University of Cape Town
Dr Anusha Lachman, Psychiatrist, University of Stellenbosch
smaswime@gmail.com

The desire to become pregnant and going through a normal pregnancy can be very overwhelming for many women. Previous pregnancy, trauma and childbirth experiences influence the expectations of future pregnancies. These experiences also affect how family’s bond with their babies and how they deal with any complications or unexpected outcomes from their pregnancy. Mental health disorders are common, and some women suffer from undiagnosed mood and anxiety disorders even prior to and during pregnancy. Pregnancy may trigger depression or anxiety. Whilst some women may be struggling to deal with the failure to conceive, some are struggling with the adjustment and balancing expectations of their roles as mothers and working women. The postpartum period following the birth of a child is considered a period of high risk and challenge for women from the immediate days post-delivery up to the first year of an infant’s life. Many women also struggle with difficult pregnancy outcomes and require emotional support and medical interventions. Maternal health teams need to be trained to screen, diagnose and treat women who need mental health support during pregnancy.

This workshop is organized by a team of Obstetricians and Gynaecologists, and Maternal Psychiatrists, and will focus on:

- An approach to mental illness during pregnancy
- Risk Benefit assessment in pregnancy
- Simple screening for maternal mental illness
- Developing a maternal mental health team

Organisers

• Prof Salome Maswime, Obstetrician and Gynaecologist, University of Cape Town
• Dr Anusha Lachman, Psychiatrist, University of Stellenbosch
BIRTH INJURIES: UNDERSTANDING THEIR CONTEXTS TO FORMULATE COMPREHENSIVE RESPONSES

Dr. Mark Richards, New Somerset and Red Cross Children’s Hospitals

Mark.richards@uct.ac.za

Birth injuries can be devastating to families and are increasingly threatening the financial integrity of health systems in South Africa. Their occurrence can reasonably be understood as isolated sentinel events or those occurring in highly complex and dependent systems. There is a pressing need to have a systematised, protected and broadly accepted methodology to understand and respond to these events.

This workshop will present some of the audit tools in current use in South Africa and the UK and will afford delegates an opportunity to reflect on their own obstetric service experiences and contribute to the design of a national audit tool as one of the ways to formulate a constructive response.

Mark Richards is a neurodevelopmental paediatrician with experience in implementing and supporting the death audit tool designed for the Child Problem Identification Programme. He has collaborated with hospital and regional obstetricians in formulating responses to improving obstetric risk and litigation.
POSTPARTUM HAEMORRHAGE MANAGED WITH ELLAVI UBT FREE FLOW PRESSURE CONTROLLED UTERINE BALLOONS BY MIDWIVES

Marvina Johnson1, Gerhard Theron1, Chris de Villiers2, Nico Smit2, Adele de Villiers2, Nardus Koekemoer2

1Department of Obstetrics and Gynaecology, Faculty of Medicine and Health Sciences, Stellenbosch University, 2Sinapi biomedical (Pty) Ltd, Lelie Road, Stellenbosch
marvina.johnson@webmail.co.za

Background

Uterine balloon tamponade (UBT) is accepted management for refractory postpartum haemorrhage (PPH). Sinapi biomedical (Pty) Ltd developed a free flow pressure controlled uterine balloon (Ellavi UBT). A case series was conducted Cape Town with the use of Ellavi by doctors. The overall success rate was 78.9%. The need to roll out the skill and the use of UBT by midwives in Midwife Obstetric Units (MOU) was evident.

Patients and Methods

A case series of Ellavi UBT use by midwives in 6 MOUs in Metro-East, Cape Town was conducted. Hands-on training workshops and one-on-one training were continued throughout the study period aimed at 80% coverage. A WhatsApp group was formed to strengthen communication. Structured interviews are conducted with midwives that intended to use or used an Ellavi device.

Results

The study commenced in October 2018 and was concluded in December 2019. A total of 36 workshops and one-on-one training sessions were conducted. Training saturation ranged between 92% and 100%. A total of 12 cases were included in the case series with 10 attempted Ellavi placements, off which 8 were done by midwives. In all 8 cases the bleeding stopped following inflation of the uterine balloons and the midwives thought the placements were easy.

Conclusions

Using the Ellavi for treatment of PPH due to uterine atony and placental bed bleeding is well accepted by midwives. Saturation training is a challenge and one-on-one training is required to reach the goal. The additional management option for PPH was accepted with enthusiasm by midwives.

Marvina Johnson is a Registered Nurse (Midwifery/Intensive Care/Nursing Education and Community Nursing Science/Nursing Administration) with experience in midwifery. I served as a Deputy Director in the Boland/Overberg and Cape Winelands region in Worcester
AUDIT OF THE MANAGEMENT AND OUTCOMES OF WOMEN WITH RETAINED PLACENTAE REFERRED FROM MIDWIFE OBSTETRIC UNITS TO HOSPITALS IN METRO WEST, CAPE TOWN

1. Dr. Emmanuel Arthur-Baiden, (MBChB, FCOG(SA)) - Ridge Hospital, Obs & Gynae department, Accra, Ghana
2. Prof Sue Fawcus, (MBChB, FRCOG), Groote University of Cape Town, Obs & Gynae department, Cape Town

arthur2bee@yahoo.com

BACKGROUND: Retained placenta (RP) refers to a placenta that has not been delivered within 30 mins of delivery, when active management of the third stage of labour (AMTSL) has been performed. It affects 1-2% of all deliveries and may cause severe Postpartum Haemorrhage (PPH). Metro West and SA National protocols recommend referral for manual removal of placenta (MROP), whereas ESMOE teaching emphasises MROP should be done on site at the primary care unit.

AIM: The aim of the study was to audit the management, outcomes and health system factors in women with retained placenta referred from primary level maternity facilities to their referral hospitals

METHODOLOGY: This was a retrospective observational study of women with retained placenta following an MOU delivery, who were referred to MMH or GSH in 2016.

RESULTS: A total of 80 subjects were referred for RP were identified in the MOU referral register, folders were retrieved from the referral hospital, and sixty-seven (n=67) met the inclusion criteria. The average age and BMI of subjects was 29.7 (±6.7) years and 27.8 (±5.8) kg/m² respectively. The median parity was two.

The rate of severe maternal outcome was 3% (one maternal death and one near miss. In addition, 47.8% required blood transfusion and 21% required High care or ICU care. The shock index deteriorated significantly during referral with 47% having signs of hypovolaemic shock on arrival, and 4.5% severe shock. Sixty-five subjects arrived with retained placenta at the referral hospital of which 42 (64.6%) required MROP. MROP was done in labour ward for 31 (73.8% of 42) and theatre for 11 (26.2% of 42). Eleven (26.2%) MROPs were successfully done at referral hospital by midwives. Of note, only 3 (9.7%) out of 33 labour ward MROPs were given analgesia for the procedure. All the 65 MROP procedures were uneventful with no patients requiring laparotomy, balloon tamponade, or hysterectomy. In terms of transfer times, the ambulance arrived to collect the patient from the MOU in less than 30 minutes for 72.8% subjects. The mean time interval from RP diagnosis at MOU to MROP was 137 minutes (+/- 66 mins).

CONCLUSION

The study findings indicate that it is feasible and might reduce severe outcomes if MROPs are done at MOUs prior to referral. Metro West policy should be changed accordingly. Attention to appropriate analgesia for MROPs done outside of theatre is a priority

Emmanuel Arthur-Baiden is Obstetrician/Gynaecologist with special interest in Community Obstetrics/Gynae-oncology and currently practising in a tertiary level facility in Accra, Ghana
PREIMPLANTATION GENETIC DIAGNOSIS (PGD) IN WOMEN WITH ADVANCED MATERNAL AGE: A LITERATURE REVIEW

Dr Constant NDJAPA-NDAMKOU, gynecologist & obstetrician
ndjapa@gmail.com

Aim: Pre-implantation genetic diagnosis (PGD) in women at advanced maternal age (AMA) is a test of genetic status performed on the genetic material obtained from a biopsy of the oocyte or embryo of women who are at risk of aneuploidy associated with their AMA.

Method: This process is performed in conjunction with in vitro fertilisation (IVF) whereby, after ovulation induction, the embryo is biopsied.

The biopsy technique can be performed at three different stages, on oocytes or zygotes (polar body biopsy), on 6–10-cellembryos (cleavage stage biopsy), or on blastocysts (blastocyst biopsy). Regardless of the procedure chosen, a biopsy involves two steps: zonapellucida drilling, which can be performed mechanically, chemically, or by laser energy, and cell removal for analysis of the genetic material to transfer only healthy euploid embryos.

Results: However, misdiagnosis remains an issue and these women as well as their partners and family need to be counselled.

Conclusions: This article reviews PGD in women with AMA, with its positive and negative forecast as well as the ongoing debates concerning associated ethical issues.

Keywords: Aneuploidy, Embryo, Maternal age, Preimplantation genetic diagnosis, Zona pellucida
EXPERIENCES AND LESSONS LEARNT FROM IMPLEMENTING THE SAFE CAESAREAN SECTION PLAN IN THE EASTERN CAPE

Dr SD Mandondo DCST O&G Amathole EC
Sibongile.mandondo@gmail.com

Abstract  In Eastern Cape the safe caesarean section implementation plan was adopted in line the medico-legal strategy to comply with minimum standards for safe caesarean. The plan was work-shopped by NDOH and MRC and accepted by Regional and Tertiary HODs and DMT members. The Superintendent General approved 26 hospitals which will provide 24-hour safe Caesarean Section procedures in health facilities across the province. These hospitals were resourced with equipment and human resource to offer the service failing which extra overtime approved for an anaesthetic doctor on standby. Other district hospitals continued to offer CD during the day.

Background

Currently many hospital still have staff complements of 3-5 full time doctors in small district hospitals and average of 10 in medium district hospitals. Family physicians are employed in 2 DH which have now been HPCSA approved for registrar training. IN EC we conduct on average 108 720 deliveries per year with of 29 000 CD per year, with 25 % caesarean rate.

• 505 maternal deaths notified by NCCEMD in 2014 -2016 Triennium.
• 150 of maternal deaths had CD.

Of the 87 deaths due to obstetric haemorrhage, 20 (26%) occurred after caesarean section. There were 13 anaesthetic deaths and 17 deaths from pulmonary embolism. Use of DVT prophylaxis post CD was limited. Uptake of LARC was low with IUCD at CD not offered.

Interventions

In 2019 all priority district hospitals conducted self assessment's using the NCCEMD tool for assessing facility for compliance with minimum standards. Few facilities scored bronze status accreditation: complied with all but 2 of the standards and majority failed. Main challenges identified was lack of FDP, lack of protocol on how to access blood from the fridge, and on replenishing used stock immediately and lack of caesarean section audits.

A caesarean section audit tool was developed which will be presented which was piloted in Amathole and subsequently was adapted for provincial monthly maternity reporting. These audits have improved compliance to protocols and minimum CD standards and improved governance and professionalism among doctors. Findings will be presented.

Recommendations

Facility accreditation for compliance to minimum standards for safe CD needs to be included in NCS and Ideal Hospital assessment’s as well as OHSC standards.
MEASURES TO ENHANCE COOPERATION OF PRIMIGRAVIDA PATIENTS DURING VAGINAL EXAMINATION IN THE FIRST STAGE OF LABOUR

Mrs Ntsoaki Margaret Tshabalala (Author)  
Prof Neltjie Van Wyk (Supervisor)  
Mrs Seugnette Rossouw (Co-Supervisor), University of Pretoria  
ntsoakit1@gmail.com

Introduction

Vaginal examinations are performed during the first stage of labour to monitor the process and to determine the need for surgical intervention in case of complications. The researcher observed at a midwives obstetric unit that an average two out of five primigravida patients per week refuse vaginal examinations. The progress of labour cannot be determined, and the midwives have no choice than to refer them to a nearby tertiary hospital for monitoring and further management.

Methodology

A descriptive and contextual study was done. Data was collected through semi-structured individual interviews with 10 midwives from a Midwives Obstetric Unit in a selected community health centre in Tshwane District in Gauteng Province of South Africa.

Results

Three categories emerged namely: 1) Create a conducive environment, 2) Render support during the procedure, 3) Enhance patient involvement. The subcategories refer to how to create a good nurse-patient relationship, gain the trust of the patient, overcome language barriers, Obtain a verbal consent for procedure, ensure privacy during the procedure, enable peer support and involve the patients in decision making.

Conclusions

Primigravida patients are scared of vaginal examination due to a lack of information with regard to the procedure. Early preparation, family support and the involvement of the patients in decision making can enhance their cooperation.

Mrs Ntsoaki Tshabalala is an advanced midwife working in Midwives Obstetric Unit Laudium community health centre and part time working as a preceptor for midwifery students at University of Johannesburg.
ARE VACUUM-ASSISTED DELIVERIES A GOOD IDEA IN THE SOUTH AFRICAN CONTEXT?
Dr Nadishani Meyer & Dr Ben Gaunt, Zithulele Hospital (Eastern Cape, South Africa)
nadishanip@gmail.com

Introduction
The art and science of obstetrics is about maximising maternal and neonatal outcomes. Achieving this in under-resourced settings where care is predominantly provided by non-specialist medical doctors can be challenging. Vacuum-assisted deliveries (VAD) are generally considered a safer alternative to emergency Caesarean section delivery (CD) in the second stage of labour, especially for mothers. Institutional VAD rates, however, are low (~1%) in sub-Saharan Africa (SSA). Low rates of VADs may be related to concerns around the occurrence of other adverse outcomes and fears over litigation dissuading the widespread use of this procedure as well as skill atrophy. Locally relevant information on VAD outcomes is required to guide doctors practicing in South Africa (SA) and the SSA region, in improved rational use of VADs, especially in the context of simultaneous concerns about rising CD rates.

Method
All attempted VADs, both successful and unsuccessful, that were performed at Zithulele Hospital between 1 January 2014 and 31 December 2018 were eligible for analysis. 645 cases were identified from the delivery registers. The minimum sample size to identify statistical significance in outcomes was calculated as 369. 586 records were located of which 554 were included in the analysis. Exclusion criteria were records missing more than 50% of data and any records where outcomes were not recorded. In addition to baseline characteristics of the women, we recorded features of the vacuum attempt (cup type, duration, experience of the provider etc.), foetal Apgar score, and any maternal or foetal adverse outcomes. We regarded a failed VAD attempt proceeding to CD as an adverse maternal outcome. An unfavourable outcome was defined as any attempted VAD that was associated with any adverse maternal outcome and/or any major adverse foetal outcomes.

Results
• 554 attempted VADs were assessed. 460 were successful VADs and 94 (17%) failed.
• In the successful group, 105 women had at least one adverse outcome. The most common AOs were 3rd and 4th degree tears (n=64; 13.9%), postpartum haemorrhage (n=42; 9.1%) and sepsis (n=8; 1.7%) In the failed group, all 94 of which were considered to be adverse outcomes, there were 80 women whose only AO was requiring a CD. The main AOs in the other 14 women were 7 (7.4%) post-partum haemorrhages and 4 (4.2%) cases of sepsis.
• 7.9% (n=44) of all neonates had a minor AO (cephalhaematomas and minor scalp lacerations) with no differences between the groups.
• Major AOs (5 min <7, seizures, IVH, subgaleal haemorrhage, stillbirths and early neonatal deaths) occurred in 7.6% (n=35) of successful vacuums and 18.1% (n=17) of failed VADs (p=0.002). The occurrence of stillbirth (n=4) and ENND (n=9) was not significantly different between the two groups.
• Multivariate analysis showed birth weight, head circumference and failed VAD to be significantly associated with an unfavourable outcome.
Discussion

Previous data on VAD outcomes from a two-year period at Zithulele Hospital were presented at Priorities 5 years ago. This study looks at a longer period of time, examined more variables and added a statistical analysis of the outcomes from a public health perspective. It is important to note that most of the NSMDs in this study were not specifically trained in VAD provision, however, were verbally encouraged to attempt VADs where indicated.

This study demonstrated higher VAD failure rates and Obstetric Anal Sphincter Injury (3rd and 4th degree tears) rates than those reported by specialist-led obstetrics units from other parts of SSA; however, foetal outcomes were comparable.

Increased efforts at training NSMDs in the provision of VADs as well as creating an environment to increase routine use of this skill may reduce the occurrence of these adverse effects and have the desired benefit of avoiding unnecessary CDs that have been shown to be significantly associated with maternal deaths.

Nadisha Meyer...a part-time MO/MPH student/wife/mother of 4/clinical quality improvement enthusiast
IS THE KMC UNIT... A HOME AWAY FROM HOME OR EXTENDED HOSPITAL STAY/ EXPRESSING FEELINGS THROUGH COLLAGE

Vanessa Booysen.

Neonatal Nursing Specialist. Lecturer UFS. Master Trainer in Newborn Care.
vanesbooysen@gmail.com

Midwife means "with woman". According to the ICM Key midwifery concepts the unique role of midwives are:

- Partnership with women to promote self-care and the health of mothers, infants, and families,
- Respect for human dignity and for women as persons with full human rights,
- Advocacy for women so that their voices are heard,
- Cultural sensitivity, including working with women and healthcare providers to overcome those cultural practices that harm women and babies.

One of the Child Survival Strategies is the Promotion of Kangaroo Mother Care (KMC) for stable low birth weight babies at all levels of care, thus also for the well, growing premature infant. How compliant are we as midwives and our KMC Units, to the ICM critical concepts?

Intervention: This presentation will discuss the psychological effects of healthy mothers' long-term "admission" into a hospital environment.

Students working in KMC asked mothers to take a magazine and cut out pictures that they can identify with. A collage of pictures was then made. Through this non-threatening discussion between KMC mother and student, mothers share their positive and negative experiences while staying for long periods in the KMC Unit and her true emotions are revealed

This presentation will share these raw feelings of depression, despair and longing with delegates.

Are there specific standards a KMC Unit has to adhere to, or can we accommodate these mothers and babies in a hospital environment and just prolong her hospital stay?

Is our focus primarily on the pre-term baby....and his/her physical condition, and have sadly neglected the baby's primary care giver....the mother's emotional well-being.

Vanessa Booysen is a Neonatal Nursing Specialist with 25 year's experience in both Private and Public Health Care, supporting the NDoH on life saving strategies as MSSN and HBB doing training and scaling up hospital practices.

She is currently a Lecturer at the UFS
A SAFER CANDLE PROJECT – SOUTH AFRICA

P.P Mtambeka, D. Schulman, N. du Toit, H. Rode, AB. Van As
Childsafe South Africa, Red Cross Children’s Hospital

Pumla.Mtambeka@westerncape.gov.za

Background
There are two main causes of shack fires in South Africa: Fallen candles and paraffin-related burns. These fires lead to devastating consequences and huge economic losses.

Aim/Goal
The goal of this project is to facilitate and promote safer use of candles in a glass jar, with the ultimate aim to prevent fires, burn injuries and deaths caused by fallen candles, targeting individuals and families who live in informal homes.

Material and Methods
Childsafe South Africa personnel conducted a number of trials to test the “Candle in a glass jar” concept. In 2006, the project was piloted in an informal area that exclusively uses candles as source of light. Further demonstration and educational sessions have taken place and over 100,000 jar units have been distributed to various communities to date.

Results
The Safer Candle Project is six years old, and has become one of Childsafe’s established programmes. It has been widely accepted and been approved by World Wide Fund for Nature SA (WWF) for Earth Hour 2011 & 2012.

Significance
The idea of candle in the glass jar is recommended as its very simple and preventative measure to reduce fires mainly caused by candles tipping. One of its advantages is that it places no financial burden on families, as there are virtually no costs involved.

Pumla Mtambeka-Nyakaza. Obtained a degree in Social Sciences at the University of the Western Cape in 1997. Is a registered social worker and has been in practice for more than 20 years. Currently doing Masters in Public Health at UWC (final year)
"THE OPERA AIN'T OVER TILL THE FAT LADY SINGS"….INTACT UMBILICAL CORD RESUSCITATION

Vanessa Booysen.

Neonatal Nursing Specialist. Lecturer UFS. Master Trainer in Newborn Care.
vanesbooysen@gmail.com

Almost half of all newborn deaths are in the first 24 hours after birth, the majority resulting from intrapartum hypoxia, also known as birth asphyxia. This condition, manifesting as the failure of the newborn to establish breathing after birth, kills 814,000 newborns worldwide every year, accounting for almost a quarter of newborn deaths. Additionally, there are an estimated 1.02 million intrapartum stillbirths every year, an unknown number of them may be live born but misclassified as fresh stillbirth when no resuscitation has been provided. Many of these deaths could be easily prevented with basic neonatal resuscitation which requires tactile stimulation, a neonatal bag and mask, suction device, and a resuscitation training mannequin.

In 2010, the AAP launched Helping Babies Breathe (HBB), a simplified evidence-based resuscitation training program to address lack of neonatal resuscitation skills in resource-limited areas. In SA HBB training and role out has been done in many districts throughout SA. But are midwives convinced that HBB is better, and is it done correctly??

2018 Research has revolutionised newborn resuscitation

Intact cord resuscitation versus early cord clamping in the treatment of depressed newborn infants during the first 10 minutes of birth (Nepcord III) – a randomized clinical trial Ola Andersson, Et Al.

"We conclude that in term infants, resuscitation with an intact umbilical cord did not raise any safety concerns and was associated with a better recovery than routine resuscitation after clamping and cutting the cord, in concordance with experimental studies."

This presentation will discuss, explain and demonstrate the evidence based studies ....the "WHY" behind the steps in the HBB Action Plan, especially keeping the placenta attached.

Vanessa Booysen is a Neonatal Nursing Specialist with 25 year’s experience in both Private and Public Health Care, supporting the NDoH on life saving strategies as MSSN and HBB doing training and scaling up hospital practices.
She is currently a Lecturer at the UFS
PREVALENCE OF CONGENITAL BIRTH DEFECTS (CBD) AND ASSOCIATED RISK-FACTORS OF BABIES DELIVERED AT UNIVERSITAS ACADEMIC HOSPITAL

Mbongifa Booi¹, and Shisana Baloyi²

BaloyiSM@ufs.ac.za

Background:

Congenital birth defects are important cause of stillbirths and neonatal mortality, chronic illness and disability. The prevalence of congenital anomalies may vary over time or with geographical location.

Aims and Objectives:

The aim of this study is to determine the proportion and types of congenital birth defects in live newborns and to study maternal and perinatal risk factors.

Methods:

This cross-sectional descriptive study was carried out in the maternity unit of Universitas Academic Hospital, Bloemfontein, South Africa, during January 2007 to December 2017. All the live born babies born in this hospital during this period were included. The newborns were examined for the presence of congenital anomalies and mothers were interviewed for socio-demographic variables.

Results:

During the study period, 12,896 babies were born, of which 215 had congenital malformations, making the prevalence 2.22%. Most of the women (55.7%) belonged to the age group between 18 and 45 years. Congenital anomalies were seen more commonly (30%) in the multiparas in comparison with primiparas (1.6%). The predominant system involved was Neurodevelopmental (CNS) system (30.0%) followed by gastro-intestinal (GI) system (11%). Intracranial defects (18.0%) was the most common one in the CNS system group. CBD were more likely to be associated with low birth weight, prematurity, multiparity, and cesarean delivery. In this study, the burden of potentially modifiable risk factors included high rates of diabetes (7.3%, OR 1.98, 95% CI 1.04 to 2.12), maternal age >40 years (7.0%, OR 2.1, 95% CI 1.35 to 3.3),

Conclusion:

This study documented specific opportunities to improve primary prevention and care. Public awareness about preventable risk factors is to be created and early prenatal diagnosis and management of common anomalies is strongly recommended. Folic acid supplementation, preconception diabetes screening related counselling could have significant and broad health benefits in this cohort and arguably in the larger South African population.

Keywords: Congenital anomaly, prematurity, prevalence, risk factors, types

| Universitas Academic Hospital Chief Specialist Obstetrician and Gynaecologist
| Chair and Academic Head of Department Obstetric and Gynaecology, University of the Free State |
NEONATAL JAUNDICE IN A LOW RESOURCE TERTIARY NEONATAL UNIT- HARARE ZIMBABWE

G Chimhini¹, H Mujuru¹, G Powell², S Rusakaniko³
¹University of Zimbabwe College of Health Sciences ,Department of Paediatrics and Child health, Parirenyatwa Hospital Complex ,Mazowe Street ,Harare Zimbabwe
²The Children’s Rehabilitation Unit, Harare Central Hospital Box St 14 Southerton,Harare, Zimbabwe
³University of Zimbabwe College of Health Sciences , Department of Community Medicine Parirenyatwa Hospital Complex ,Mazowe Street ,Harare Zimbabwe

gwenchimhini@gmail.com

INTRODUCTION

Introduction

Neonatal jaundice (NNJ) is an important cause of morbidity and mortality in the first 2 weeks of life (1). Survivors of severe NNJ are at risk of life-long neurodevelopmental disabilities including cerebral palsy and deafness. Early identification of signs of encephalopathy is important for instituting early interventions. We set to characterize severe hyperbilirubinemia at Harare Hospital Neonatal Unit.

Methodology A cross-sectional study was conducted on all infants with severe jaundice over a 12 months period. We excluded the < 34weeks gestation, low birth weight and severe birth asphyxia. Information on demographics, clinical, management and hospital outcome was abstracted from hospital records.

Results

383 neonates were enrolled, with 243 (63.5%) males. Most mothers (96.9%) did not receive NNJ counselling in the antenatal period despite 319(83%) attendance. 30% of the mothers had blood group done of whom 79/114 (69%), 35/114(31%) and 9 (8%) were blood group O, then A, B or AB and Rhesus negative respectively. Majority had moderate jaundice and managed on phototherapy. Exchange transfusion was performed on 4 patients only. Significant comorbid conditions were sepsis (92%) and hypernatraemic dehydration ( 56%). Seven babies (2%) had signs of bilirubin encephalopathy on discharge and 16 (4%) died. Factors associated with mortality were: being outborn compared to being born at Harare hospital OR 8.9[2.19 36.37], low 5 minute Apgar Score OR 4.38 [1.38 13.9] and having intravenous fluids OR 19[2.47 14.7] Jaundiced neonates of 34-36 weeks gestational age were 5.04 times more likely to decease compared to the full-term.

Conclusion

Blood group O Rhesus positive was common. Sepsis and dehydration were common comorbidities. Being outborn ,having a low 5 minute Apgar score and being managed with intravenous fluids increased the risk of mortality in jaundiced neonates, whilst increase in gestational age was protective.

Gwendoline Chimhini, MBChB,MMED Paediatrics and Child Health, MPH

Lecturer Department of Paediatrics and Child Health, University of Zimbabwe. Neonatal Consultant Harare Hospital.

Research interests in Neonatal sepsis, neonatal jaundice antibiotic stewardship and multi drug resistance in gram negative enterobacteriae causing NNS
THE ROLE OF THE BIRTH ATTENDANTS AND THE IMPORTANCE OF NEONATAL INTESTINAL MICROBIOMS AT BIRTH. TRANSLATING LABOUR WARD AND POST-PARTUM PRACTICES INTO LIFE LONG HEALTH

Vanessa Booysen. Neonatal Nursing Specialist. Lecturer UFS. Master Trainer in Newborn Care.

vanescooysen@gmail.com

There’s the obvious main event, BIRTH, which is the emergence of a new human being into this world. But there’s another event taking place simultaneously, a crucial event that is not visible to the naked eye, an event that could determine the lifelong health babies and our community. This is the intestinal seeding of the baby's microbiome, the community of “good” bacteria that we carry with us throughout our lives.

Intestinal bacteria have a key role in promoting the early development of the gut's mucosal immune system, both in terms of its physical components and function, and continue to have a role later in life. It is becoming increasingly evident that the microbes of the intestine may be involved in the so-called 'hygiene hypothesis', where there is a lack of exposure to a variety of microorganisms, especially during early life.

Microbiome seeding, along with breastfeeding and skin-to-skin contact, kick-starts the baby's immune system and helps protect the infant from multiple chronic diseases childhood such as type 1 diabetes, asthma, allergies, celiac disease, inflammatory bowel disease and obesity, across a lifetime.

Researchers are discovering, however, that interventions such as the use of synthetic oxytocin, antibiotics, C-sections, and formula feeding interfere with, or bypass completely, the microbial transfer from mother to baby.

This presentation will explain what microbiomes are and the important role birth attendants, midwives, obstetricians, etc have to play ensuring infant gut colonisation with "good bacteria" at birth and the critical neonatal period, translating evidence based practice into lifelong health

IT MATTERS HOW WE ARE BORN!!!
A THEORETICAL FRAMEWORK TO UNDERSTANDING BARRIERS TO RESPECTFUL MATERNITY CARE: THE EXPERIENCE OF NURSES AND MIDWIVES IN 3 CAPE Town MOUs.

Jessica Dutton (presenter), Lucia Knight
1School of Public Health; 2University of Western Cape

jessi.dutton@gmail.com

This poster presentation offers a theoretical framework to understanding health system barriers to respectful maternity care within 3 MOUs located in Cape Town.

As part of the ongoing research for my PhD, which considers midwives perspective on quality of care, I have developed a theoretical framework for the conception and analysis of barriers to respectful maternity care. In 2019, The NGO White Ribbon Alliance published a revised respectful maternity care charter, which articulates the universal rights of women and newborns during childbirth and postpartum care. The respectful maternity care charter highlights women’s autonomy and states that care during childbirth "needs to encompass basic human rights, including the rights to respect, dignity, confidentiality, information and informed consent, the right to the highest attainable standard of health, and freedom from discrimination and from all forms of ill-treatment.” The charter offer 10 separate, yet interconnected, human rights to achieve the above standards of healthcare.

This poster visualizes a framework to understanding the barriers nurses and midwives face based on observations of the clinic, interviews with nurses and midwives and existing research on the issue. The interlinking concepts and experiences that build the framework offer ontological epistemological, and methodological understandings, which translate into an approach to understanding the social reality of maternity care within the MOUs. Materiality of care, patient neglect, and emergency transport failures are examples of health system barriers that will be considered. This theoretical framework works to conceptualize an approach that can inform maternal health care in a variety of ways, such as curriculum development, improvements to the implementation of policy and guidelines at a local level, and further research initiatives in the field.

Jessica is a PhD student at the School of Public Health, University of Western Cape and her study focus is on barriers to quality of care within Cape Town MOU's from the perspective of nurses and midwives. Jessica trained as a midwife in Canada
IMPLEMENTATION OF NEURODEVELOPMENTAL SUPPORTIVE CARE – THE INDESC STUDY: LEADERSHIP DEVELOPMENT PHASE

W Lubbe, S Scholtz, North-West University

Welma.lubbe@nwu.ac.za

Introduction:

The effect of neurodevelopmental supportive care (NDSC) is well researched, but it is not always practiced as a comprehensive model of care in all South African NICUs. This research is the first phase of a larger study which is aimed at the implementation of neurodevelopmental supportive care (INDeSC) to protect and support preterm infant development in all neonatal units in South Africa. This phase focused on leadership training of selected champions to coordinate the implementation process in a number of hospitals across South Africa.

Method:

Implementation research is complex in nature and draw on a variety of research strategies. Project leaders (champions) for each site were be trained on the Transformational Leadership Model principles and neurodevelopmental supportive care content. Data was collected using the Leadership Practice Inventory, focus groups and reflective journaling.

Results:

During the focus groups implementation challenges and opportunities were identified by participants. Individualised implementation strategies for each setting were formulated and the first three phases of the implementation process (based on the 6-step KMC progress monitoring tool by Bergh et al. 2012) were completed - Step 1: Creating awareness, Step 2: Adopting the concept, Step 3: Taking ownership, and Step 4: Evidence of practice, were initiated. Champions returned to their clinical settings and started with situational analysis of their NDSC status, and initiated monthly training of co-workers to implement NDSC in a structured manner.

Conclusions:

Implementation is often the most challenging part of evidence-based practice. The INDESC study was designed to equip healthcare professionals working in the fragile baby environment with the necessary leadership skills to enable them to ensure change in the neonatal intensive care units.

Prof Welma Lubbe is an associate professor at the North-West University, School of Nursing Science as part of the midwifery team and responsible for neonatal training.

Her research focus in the field of neurodevelopmental supportive care of the preterm infant.

She is the owner of Little Steps® and act as academic advisor for various local and international organisations and research groups.