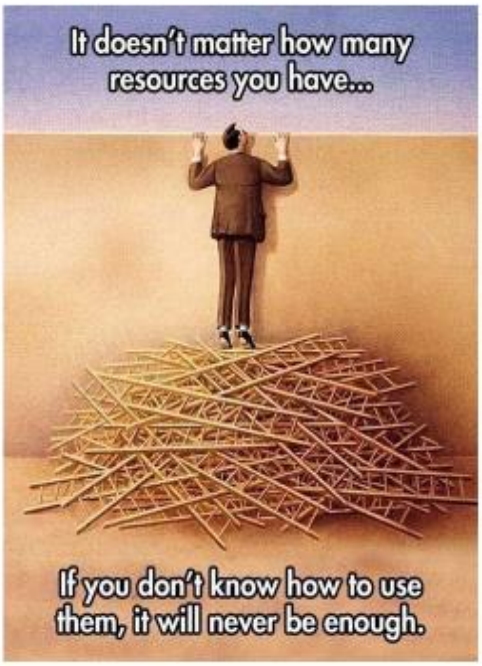
Mphatlalatsane

"The bright morning star"

Reader

Maternal and neonatal health and other project related topics



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Introduction

The Reader aims to give busy programme managers and clinicians easy access to summaries of peer reviewed research articles on maternal and neonatal health, resources to access data, as well as content related to the Mphatlalatsane initiative, such as quality improvement interventions and Plan-Do-Study-Act (PDSA) cycles. The summaries of research articles include (i) study characteristics such as date, place, and methodology, (ii) results, and (iii) author conclusions. The research article texts are verbatim extracts from the respective papers, and should you use any of it, standard practice regarding citation of texts and publications should be adhered to. The full texts of the research articles are available from Arrie Odendaal (willem.odendaal@mrc.ac.za).

The Reader will be maintained by the South African Medical Research Council (SAMRC), and made available to the Mphatlalatsane Programme Management Committee, four times a year. Each issue will be standalone with new content.

The PMC members are encouraged to send relevant articles and project reports to the SAMRC team (willem.odendaal@mrc.ac.za), to be included in the Reader.

For easy access

- To find the content you are interested in: *Table of content* < hover your cursor on the title < click. This will take you to that specific document summary.
- To return from the summary back to the *Table of content:* Hover your cursor on the summary title < click. This will take you back to the *Table of content*.

Table of Contents

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Auditing tools

Eclampsia

(Browne, van Nievelt et al. 2015) "Criteria-Based Audit of Quality of Care to Women with Severe Pre-Eclampsia and Eclampsia in a Referral Hospital in Accra, Ghana"

Study characteristics

Country
Ghana

Setting
Regional hospital

Date of data
May-June 2013

Study design
A mixed-methods:

- observation of current practice by group interviews and shadowing sessions
- cross-sectional study on guideline adherence

Aim

- To determine the applicability of a Criteria-based audit (CBA) to assess quality of care (QoC) delivered to women with severe hypertensive disorders in pregnancy
- To assess adherence to protocols

Key quotes from the article

a. Protocols that received more attention in the hospital (e.g. visible reminders on the wall, recent training of nurses and midwives) were adhered to more closely.
b. A precise and clear allocation of tasks was found to be a factor promoting adherence: the magnesium sulphate treatment protocol assigns responsibility to two staff members at a given time, whereas other protocols generally included more staff members.

Methodology

a. Cases recruited for the CBA were women diagnosed with severe pre-eclampsia, hypertensive emergency or eclampsia during pregnancy.
b. CBA data collection comprised:
   - an interview to collect maternal socio-demographic, socio-economic and clinical information with a standardized questionnaire
   - screening patient records for evidence of management activities per relevant checklists.
c. Adherence to the protocols was defined as both conducted and reported in a patient record, for the total population and by complication group.

Results

a. The management of 50 patients were audited.
b. Mean adherence ranged from 15 - 85%.
c. Protocols for 'plan for delivery' and 'magnesium sulphate administration' were best adhered to (85%), followed by adherence to protocols for 'eclampsia' (64%), 'severe pre-eclampsia at

admission' (60%), 'severe pre-eclampsia ward follow-up' (53%) and 'hypertensive emergency' (53%).
d. Protocols for monitoring were least adhered to (15%).

Author discussion and conclusions
a. A criteria-based audit is an effective tool to determine quality of care, identify gaps in standard of care, and allow for monitoring and evaluation in a health facility.
b. For routine monitoring purposes, a reduction of the number of criteria in our checklist in a process locally steered by the midwives, nurses and gynaecologists, is recommended.

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Data sources

World Health Organisation

a. Maternal, Neonatal, Child and Adolescent portal (https://www.who.int/data/maternal-newborn-child-adolescent)

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Health systems

(George, LeFevre et al. 2019) "Lenses and levels: the why, what and how of measuring health system drivers of women's, children's and adolescents' health with a governance focus"

Study characteristics
Country
n/a

Setting
n/a

Study design
Theoretical paper

Aim
The purpose of this methodology paper is not to propose universal measurements or indicators, but to develop understanding on how measuring health system drivers of the health of women, children and adolescents with a governance focus requires a broad approach to measurement, opening up our understanding of what we should be measuring, how, why and for whom.

Key quotes from the article
a. By making explicit the different framings or lenses through which we see the health of women, children and adolescents, we make more transparent the choices made in terms of what is measured, why, how and for whom.

Results

a. Useful:
   - Diagram 1: Governance elements
   - Table 1: Health systems drivers with a governance focus

b. Three common lenses, each with their own views of power dynamics in policy and programme implementation, include:
   - a service delivery lens aimed at scaling effective interventions,
   - a societal lens oriented to empowering people with rights to effect change, and
   - a systems lens concerned with creating enabling environments for adaptive learning.

c. We illustrate the implications of each lens for the *why*, *what* and *how* of measuring health system drivers across micro, meso and macro health systems levels, through three examples (digital health, maternal and perinatal death surveillance and review, and multi-sectoral action for adolescent health).

Author discussion and conclusions

b. Health systems drivers are key to understanding the enabling factors, social dynamics and rights that underpin coverage and equity of women's, children's and adolescents' health.

c. These drivers are better understood when seen through service delivery, society and systems lenses.

d. While progress has been made in developing tools for describing these drivers from a service delivery lens, further understanding of the less observable elements that shape human behaviour in health systems identified by society and systems lenses is needed.
   While cross-national governance and health metrics exist, they may be less useful for national-level policy-makers who are looking for more applied analysis of why, where and how to improve governance in health systems.

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(Schneider, van der Merwe et al. 2019) "The whole is more than the sum of the parts: establishing an enabling health system environment for reducing acute child malnutrition in a rural South African district"

Study characteristics

Country

South Africa

Setting

Gert Sibande District, Mpumalanga, mostly rural PHC

Date of data

- Trends in quantitative data are presented by district in Mpumalanga for a 5-year period starting prior to the district interventions (financial years 2013/14–2017/18)
- During the course of 2017, an independent research team conducted 41 interviews

Study design

Mixed methods case study

Aim

Drawing on routine audit data, the declining trends in under-five admissions and in-hospital mortality for severe acute malnutrition (SAM) over a 5-year period are presented, comparing the district with two others in the same province … the article then presents an analysis of how an enabling local health system environment for maternal-child health was established, creating the conditions for achievement of the SAM outcomes.

Key quotes from the article

a. Shifts from grudging compliance of top-down instructions towards internalized commitment to implementation take time. They occur when successes are visible, actors are empowered, and when accountability is understood as reciprocal, namely, expectations of improved performance are matched with equal degrees of support.
b. … local health systems have to be approached as fundamentally social systems, shaped by human agency and relationships. Successful strategies operate at two levels: the formal and informal; the official and unofficial; system hardware and software (Sheikh et al., 2011)

Methodology

a. Quantitative analysis of changes in morbidity and mortality, drawing on routine data from Mpumalanga Province
b. Qualitative assessment based on interviews and a workshop with a wide cross section of district, provincial and national players
    - Of the seven sub-districts in Gert Sibande, two were purposefully selected as representing different degrees of adoption and buy-in to the new strategies (high and low). Interviewees included district and sub-district line managers, dietitians, programme managers, frontline providers from hospital, primary health care and community services, support staff and partners (Table 3). 'Partners' included the main facilitator, a HIV/AIDS nongovernmental organization, and a university academic co-ordinating service learning in the District.

Results

a. Key intervention activities
   - Training courses on the management of SAM for district clinicians were first convened by the Mpumalanga Provincial nutrition programme from late 2013 onwards.
   - In 2014, district clinical specialist teams (DCSTs) were appointed to support MNCH services, and in 2015, intensified provincial processes of nutrition planning, support, monitoring and procurement of essential supplies were set in motion.
   - With national, provincial and district backing [an experienced mentor], established district and sub-district meetings referred to as 'Monitoring and Response Units' (MRUs), and a system of 'real-time' (24 h) death reporting, analysis and response.

b. Quantitative indicators
   - As with the rest of South Africa, all three districts in Mpumalanga Province recorded significant declines in hospital admissions for SAM over the 5-year period (2013/14–2017/18) (Figure 2).
   - In-patient deaths from SAM peaked in 2014/15 (Figure 3), reflected in the high case fatality rates in that year (Figure 4).
   - In-patient death and case fatality rates declined steeply thereafter, again most noticeably in Gert Sibande District. The percentage decline in both admissions and in-patient deaths was greatest in Gert Sibande District (Figure 5).

c. Enabling environment and pathways of change
   - Reducing MNC mortality, and in particular, responding better to malnutrition, became constructed as a priority for senior and mid-level district managers, and laid the ground for entry and support from the facilitators.
   - The new approaches to monitoring and information use introduced through MRUs enabled district actors to prioritize which interventions to implement.
   - With time, improved information use extended beyond the MRU and became integrated into routine monthly and quarterly reviews at facility, sub-district and district level. 'We are looking at data in a different manner. We look at what happened, using the "four R's". The first R is we record, the second R we report, the third R we review and the fourth R we respond' (PHC supervisor).
   - … in practice leadership of MRU activities was distributed. Informal alliances, referred to by the project facilitator as the 'individuals or groups who welcome innovation and change for quality improvement' were encouraged.
   - A key factor in the successes of the MRU in Gert Sibande District was how expectations of greater accountability were matched by new forms of support for providers.

Author discussion and conclusions

a. Firstly, it is possible to foster enabling health district environments for nutrition-specific interventions by mobilizing existing resources, mainstreaming nutrition into maternal-child health programmes, and placing ultimate responsibility for nutrition with subdistrict and facility managers.
b. Secondly, successful district nutrition programmes are embedded in supportive relationships and processes at higher—in this instance, provincial and national—levels, providing policy, guidelines, material resources and technical expertise.
c. The capacity to communicate is obviously a key element of this. This tactical know-how may reside less with technical nutrition or clinical experts than with skilled health system managers who have the knowledge and experience of navigating complex systems.

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Institute for Healthcare Improvement (IHI) Newsletters

(IHITeam@ihi.org)

22 July 2019

Why Leaders Shouldn't Fear Changing Their Minds

(Extracts from an interview with IHI President Emeriti Don Berwick and Maureen Bisognano)

a. Curiosity and open-mindedness are key to improvement.
b. It takes good mentoring and a lot of self-scrutiny to begin to realize that leadership of the best type shows humility and curiosity.
c. Instead of "I know the answer," the best leaders say "You know the answer. How can I help you use what you know?"
d. Approaching the work this way is … a rocky ride because you don't know what the workforce is going to think or bring to you.
e. All I can say to leaders … is to be vulnerable and share your confusion when you have it with others so that they may offer solutions.
f. If you're not prepared to model that kind of openness in your own behavior, don't expect that to emerge in the organisation.

Do We Make QI Too Complicated?

(Extracts from an interview with Karen Baldoza, an IHI Executive Director)

a. We often overcomplicate improvement. Sometimes people think these skills are all about a mysterious language and set of tools.
b. … improvement is innate. We all do it in our daily lives … when we try a recipe and it doesn't work out quite the way we wanted - say it was too salty or too watery - we tweak it a little bit the next time we make it.
c. Improvement can sometimes be intimidating, so I don't tend to worry about whether or not people use the correct term or use a tool exactly the right way.
d. People feel moved to join fields like health care, and then we crush that out of them through the complexity and the hassle of their day-to-day work.

22 August 2019

A checklist for care in the first hour after birth

(By Meghan Munson)

a. Three hospitals in Kenya working on quality improvement (QI) initiatives chose to improve care for postpartum hemorrhage (PPH) after giving birth. They independently identified the first hour after delivery as their biggest blind spot.
b. QI teams at the hospitals set goals for themselves for how often and what to check in that first hour.
c. Every facility's goals differed:
    - For example, in some facilities there are only two nurses on overnight duty at a time. When two women are in active labor at the same time, it may not be possible for a nurse to monitor every woman in regular 15 minutes intervals postnatally. In such a scenario, the teams felt that

achieving the guidelines would be out of their reach for a 3-month project, and a facility might set a goal to monitor women every 30 minutes instead.

d. One of the teams developed and tested checklist as their *change idea*, and when the two other QI teams heard about the checklist, they decided to test it and tailored it to their own goals.

The check list:

4th stage of labour check-list **Patient Name** _____ **Date** _____

Time of delivery of placenta	Time after delivery of placenta	Check Blood Pressure	Check Pulse	Temp	Check for vaginal bleeding	Check that bladder is empty	Examine for tears (perineum, vagina, cervix)	Check fundus for contraction	Check all clots expelled and placenta complete	Check that mom has initiated breastfeeding
	0 min									
	15 min									
	30 min					VERBAL				
	45 min									
	60 min					VERBAL				

Remarks

Key lessons for the QI coach

a. Let the team be the experts on their work and have them drive the clinical part of the work. This will allow them to own the clinical impact of their *change ideas*.

b. Occasionally every team will have a rough day and not participate much in a meeting. It would have been easy on these days to tell them what to do, saying, “Please go get the files from the maternity ward so we can score them.” It would save time, but the team wouldn’t learn much, nor would they own the work. Instead, I asked questions like, “So team, how did we do last week in testing out your idea?” This would lead into a discussion in which eventually someone asked about the number of patients involved in the test, and then someone asked a colleague to get the files so they could score them together. This way the data collection and analysis would be their idea, not yours.

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Neonatal health

(Gathara, Serem et al. 2019) "Missed nursing care in newborn units: a cross-sectional direct observational study"

Study characteristics

Country

Kenya

Setting

6 Hospitals with more than 100 neonatal admissions annually

Date of data

September 2017 and 30 May 2018

Study design

Observational study

Aim

- To explore the extent of nursing care delivered to sick newborns in hospitals in an LMIC, going beyond prior reports that have focused predominantly on medical aspects of care
- To use observational methods to identify and quantify the nature of missed care in this setting

Key quotes from the article

a. … we observed that nurses' time is often taken up by tasks that are not necessarily core to the nursing role. Examples include clerical tasks such as organising patient files, receiving telephone calls and billing, collecting supplies from stores and ward cleaning of baby cots and equipment.
b. These non-patient-facing activities take up a significant amount of their time.

Methodology

a. We documented how often certain nursing tasks (listed in table 3) were undertaken in a 12-hour shift (07:00–19:00 or 19:00–07:00) using an observation checklist.
b. The observers spent 1 week in the hospital before the 3-week period during which 12-hour shifts were randomly selected for observation [piloting the tool]
c. In each hospital, a random sample of 12 shifts/time blocks of 12 hours (144 observation hours per hospital) were selected from within a 3-week period.
d. We used stratified random sampling to ensure we observed three weekday day shifts, three weekday night shifts, three weekend day shifts and three weekend night shifts.

a.

Results

a. A total of 216 babies were observed.
b. Aggregating nursing tasks within babies, average task completion was 60%.
c. The tasks most commonly completed by nurses were:
    - nursing care handing over for babies between shifts (97%)
    - checking and, where necessary, changing diapers (96%)
    - checking eyes for damage from phototherapy, turning of babies on phototherapy (91%)
    - and supporting mothers practicing kangaroo mother care (91%).
d. The least done tasks included:

- nursing review of newborns (38%)
- cord care (38%)
- turning/repositioning (38%)
- cleaning eyes and checking for discharge/infection for babies on phototherapy (38%)
- oxygen saturation monitoring (34%)
- skin assessment for babies on phototherapy (15%).

e. Of the vital signs, oxygen saturation (required six hourly for babies on oxygen or in category A or B) was the least done

Author discussion and conclusions

a. Our model suggests a 24% reduction in the NCI when there was 1 nurse per 12 or more babies compared with 1 nurse to up to 3 babies.
b. Our exploratory analysis suggests a strong relationship between the high levels of missed care observed and the high baby to nurse ratios found especially in the public sector.
c. Communication with and education of mothers or caregivers, such as explaining the baby's illness and management and teaching them how to safely feed their baby, was provided on less than half the occasions expected. These aspects of missed care may adversely affect mothers' experience of care and influence babies' early recovery and longer term maternal-neonatal bonding.

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Perinatal mortality

(Kunkel, Marete et al. 2019) "Place of delivery and perinatal mortality in Kenya"

Study characteristics

Country
Kenya

Setting
All health centres

Date of data
We focused our study on the 37,309 deliveries occurring between January 1, 2009, and June 30, 2013

Study type

a. Observational
b. To our knowledge, this is the largest cohort study to systematically investigate the association between birth location and neonatal mortality in a LMIC.

Aim
To identify trends in facility deliveries and determine the association between delivery location and perinatal mortality (PM) in Kenya.

Key quotes from the article

a. The increase in facility deliveries between 2009 and 2013 was not associated with a decline in perinatal mortality.
b. Infants born in facilities had a 41% greater risk of perinatal mortality than infants born at home.
c. This lack of improvement in perinatal mortality is disappointing because an increase in facility deliveries is expected to be associated with lower mortality.
d. Possible explanations for the lack of mortality benefit in facilities include delays in seeking referral, delays in providing appropriate care for complicated pregnancies, and insufficient quality of newborn and obstetric care in facilities.

Methodology

a. We used data from a prospective, population-based observational study of pregnancy and neonatal outcomes in Kenya.
b. We defined facility births as births occurring in any health facility, including hospitals, health centers, and dispensaries.
c. We defined home births as births occurring in the home of the woman, a family member, or a traditional birth attendant.
d. Births not occurring at facilities or at home were classified as other.
e. We identified temporal trends in facility utilization and perinatal mortality. We then assessed associations between delivery location and PM using generalized linear mixed equations.
f. Our primary outcome was perinatal mortality, which is a measure of both stillbirths (deaths prior to delivery among pregnancies _20 weeks gestation) and early neonatal deaths (deaths occurring less than 7 days after birth).
g. The perinatal mortality rate (PMR) was calculated based on the number of stillbirths and early neonatal deaths per 1000 eligible pregnancies.

Results

a. Overall, 14,147 deliveries (38.9%) occurred in a facility (hospital or health center), and 21,766 (59.8%) occurred in a home setting. The remaining 462 deliveries (1.3%) occurred in other locations.
b. The percentage of facility births increased from 38.4% in 2009 to 47.6% in 2013, with no change in perinatal mortality.
c. In this adjusted analysis, the odds ratio of perinatal mortality at hospitals increased to 2.38 compared to home deliveries (95% CI: 1.46, 3.89).
d. There was no difference in the odds of perinatal mortality between health centers and home deliveries.

Author discussion and conclusions

a. We attempted to isolate the effect of this possible “referral bias” in a post-hoc secondary analysis that removed high-risk cases (infants less than 2500 grams and multi-fetal gestation infants) and all referred cases from the hospital deliveries.
b. This analysis showed that the mortality risk in hospitals for low-risk, un-referred pregnancies was 2.38 times higher than home deliveries, which suggests that referral bias does not account for all of the increased mortality in hospitals. However, the inability to fully account for referral bias (with actual referral status or maternal characteristics that increase the risk of complications) in our multivariable regression model remains a limitation.
c. Delivering in a facility provides access to trained birth attendants, emergency obstetric care, and routine newborn resuscitation services, all of which are considered essential components of quality maternal-child health care and have been associated with decreasing mortality in facility settings in

LMICs. However, the overall benefit of delivering in a facility, versus delivering in a home, has not been well established in LMICs.

d. One important difference in our study, compared to other studies, is sample size. Compared to the 36,000 deliveries included in our analysis, sample sizes in the other studies varied between 427 and 3,866. Since perinatal mortality is an uncommon occurrence, small sample sizes in other studies may have a significant impact on the generalizability of results.
e. The significant variation among clusters in our study suggests that analyzing a small sample of our large dataset could produce vastly different outcomes.
f. In addition to differences in sample size, we believe that results may vary so markedly across studies because of major differences in the overall health care setting, including health care infrastructure and quality of care within facilities.
g. The increased risk of mortality for low-risk, un-referred pregnancies delivered in a hospital (versus home deliveries) suggests that poor quality of care may impact neonatal outcomes in our study.
h. A lack of medications and functioning equipment, along with limited knowledge and skills among health care workers, may reduce quality of care in facilities. For example, a survey in 6 African countries showed that less than 22% of facilities had functioning neonatal resuscitation equipment.37 In addition, an assessment of skilled birth attendants in Benin, Rwanda, Kenya, Ecuador, and Jamaica showed only half of the birth attendants displayed competency to deal with specific obstetric and neonatal complications.

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