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EDCTP

South Africa newborn and child-health national and provincial clinical practice guidelines

A landscape analysis

Cochrane South Africa

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South African newborn and child-health national and provincial clinical practice guidelines

A landscape analysis

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Conflict of interest

All authors declare that they have no conflict of interests.

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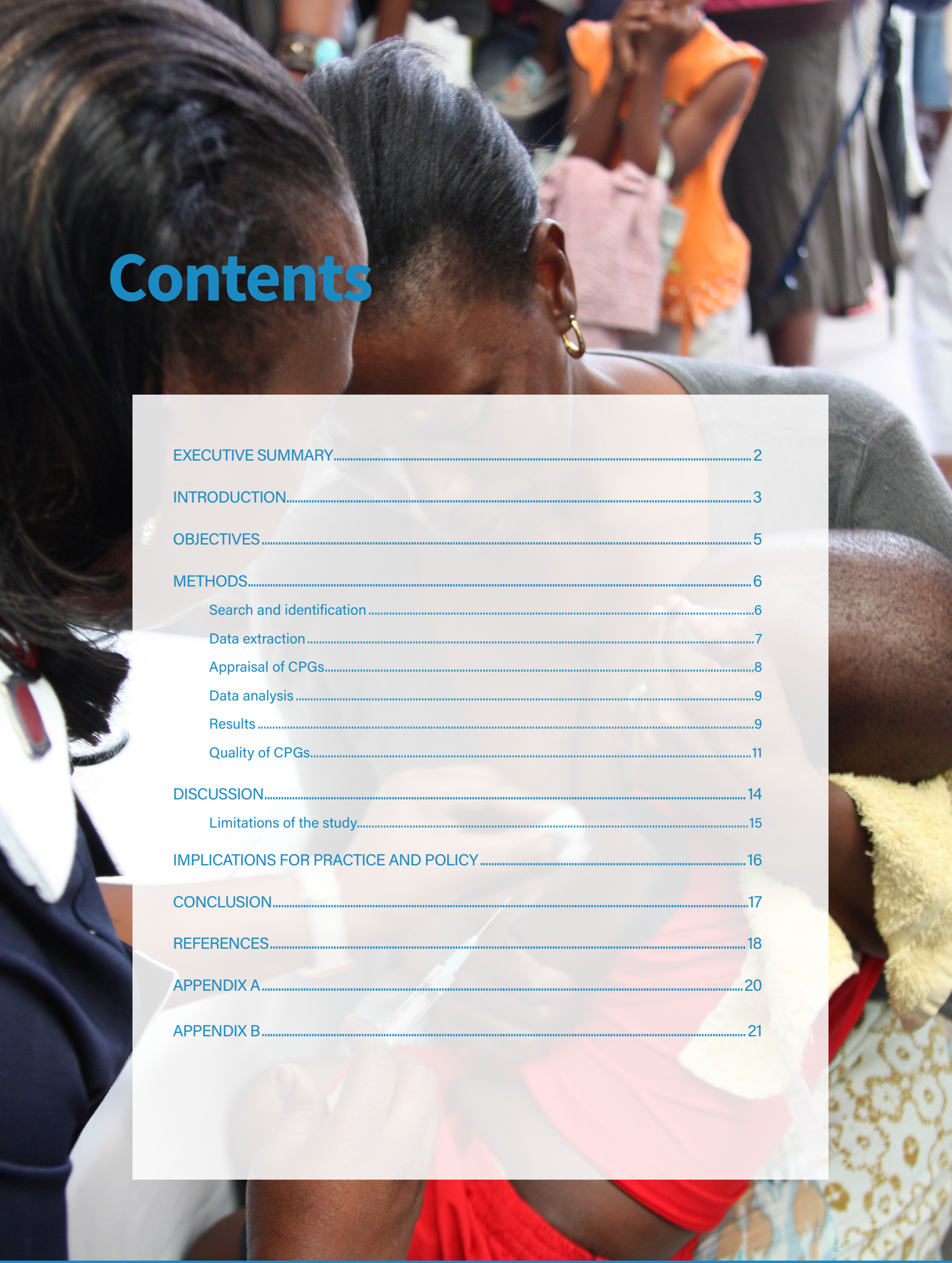

Contents

Executive summary

Background: Low- and middle-income countries remain disproportionately affected by high rates of under-five-year-old mortality. Newborn and child mortality is often due to preventable conditions, which could be effectively managed through evidence-based clinical practice guidelines (CPGs). CPGs offer a means to bridge the gap between research evidence and practice. They are essential policy tools supporting implementation of effective, safe and cost-effective healthcare. However, poor reporting standards and methodological limitations may undermine the impact of CPGs in improving quality of care and health outcomes. The Global Evidence, Local Adaptation (GELA) project aims to identify priority topics in the field of under-five mortality and collaboratively develop people-centred, evidence-based guidance.

Aim: To conduct a scoping review to identify and assess the quality of South African CPGs for newborn and child health published in the past five years (2017 – 2022).

Methods: We systematically searched key websites (June – July 2022) and screened for publicly available national and provincial-level *de novo* or adopted CPGs, addressing newborn and child health. Two reviewers independently extracted information from eligible CPGs (e.g. scope, condition or topic, target population, target and users, responsible developers, stakeholder consultation process, assessing GRADE certainty of evidence) and appraised their quality using the Appraisal of Guidelines for Research & Evaluation Instrument (AGREE II). We analysed the findings descriptively using Microsoft Excel and STATA 17 and reported medians for the AGREE II scores, which were non-normally distributed.

Results: We included 23 CPGs, providing guidance on communicable diseases such as COVID-19, pneumonia, diphtheria, HIV, tuberculosis, malaria, pertussis, listeriosis, and non-communicable diseases such asthma, cystic fibrosis, and enuresis. Aspects of healthcare covered by CPGs were treatment (n=20), diagnosis (n=18), prevention (n=15), screening (n=12), and rehabilitation (n=4). Contextual data were considered in 4/23 CPGs, and list of CPG panel members provided in 13/23 CPGs. CPG development is driven by the National Department of Health and professional associations. For AGREE II appraisal, the domains of applicability, rigour of development, and editorial independence had the lowest median scores (31%, 15% and 4% respectively), while the clarity of presentation domain scored the highest (92%).

Conclusion: Our findings highlight that although South Africa has several recent guidelines for various topics within newborn and child health, several gaps remain – both in content covered and reporting standards. Further research is needed to identify priority topics and address gaps in guidance to ensure trustworthy and credible evidence-based CPGs that adhere to global standards for conduct and reporting.

01 INTRODUCTION

The sustainable development goals (SDGs) aim to combat preventable maternal, newborn and child mortality by 2030.[1] Over the years, global health initiatives such as immunisation programmes have made great strides in gradually improving survival in children under-five years of age.[2] This is evidenced by a 60% global reduction in under-five mortality rates between 1990 and 2020.[2] Despite this significant global progress, low- to middle-income countries (LMICs) remain disproportionately affected by high rates of childhood mortality. About 80% of the five million deaths that occurred in children under five in 2020 occurred in sub-Saharan Africa (SSA) and South Asia.[2] Children born in SSA are 14 times more likely to die before reaching the age of five compared to children in high-income regions such as Europe and North America.[2]

These high mortality rates are mostly driven by factors such as health inequity, poverty, poor health systems and poor nutrition, with COVID-19 adding substantially to the burden in recent years. Poverty-related diseases including human immunodeficiency virus (HIV), pneumonia, diarrhoea and malaria remain among the leading causes of death in children under-five years in LMICs. In South Africa, the leading causes of under-five mortality include neonatal disorders, gastroenteritis, pneumonia, malnutrition, congenital disorders, TB and HIV; with neonatal disorders accounting for most deaths between 2011 and 2015.[3] Under five mortality has steadily declined in South Africa from 79.2 to 32.2 deaths per 1000 live births between 2006 and 2020, partly due to successful implementation of antiretroviral therapy (ART) programmes.[4, 5] Despite progress in improving child-health indicators, current national statistics remain unacceptably high, and children under five still succumb to preventable conditions which could be effectively managed through feasible implementation interventions.[4, 6] According to the World Health Organization (WHO), primary healthcare could benefit from the use of evidence-based algorithms and clinical guidelines to determine the course of management for certain conditions in low-resource settings where laboratory and radiology diagnostic services are limited or non-existent.[6] Therefore, good quality clinical practice guidelines (CPGs) may play a crucial role towards meeting the SDG 2030 goal of combating under-five mortality in LMICs.

CPGs bridge the gap between research evidence and clinical practice, and are defined as "statements that include recommendations intended to optimise patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options".[7, 8] They allow for the integration of the best scientific evidence with clinical expertise, which is recognised as one of the

core competencies in healthcare.[9] Well-formulated CPGs are essential in standardising clinical decision-making, minimising error and wastage of health resources, and informing quality of care and funding decisions. Furthermore, as South Africa gears up towards a Universal Health Care system, CPGs will play a vital role in informing quality of care.[10]

Key aspects of CPG development include transparency, use of rigorously collected and synthesised research evidence, contextualisation, and use of Grading of Recommendations Assessment, Development and Evaluation (GRADE) for guidelines. International organisations such as the WHO, the Guideline International Network (GIN), the Institute of Medicine (IOM) and the National Institute for Health and Care Excellence (NICE) have published standards for high-quality *de novo* CPG development, adaptation, and implementation.[11] However, these resources are not consistently adopted by CPG developers, leading to the development of poor-quality CPGs. This aligns with the findings of a recent study which reported that 66% of the randomly sampled and assessed global CPGs (for any condition) were developed using non-systematic approaches to evidence synthesis.[12] In South Africa, CPG development is mostly driven by the national and provincial ministries of health, as well as relevant professional societies.[11] Despite efforts to improve the quality of CPGs through projects such as the South African Guidelines Excellence (SAGE), recent reports have highlighted gaps and challenges including lack of a central repository or of a local CPG network; poor rigour in CPG development; inadequate stakeholder involvement; insufficient clarity in editorial independence; and, lack of contextualisation.[11, 13]

It is widely accepted that *de novo* (new) CPG development is resource intensive, requiring adequate funding, technical expertise, and sufficient time. Hence, countries are embracing methods for CPG adaptation and contextualisation of existing global guideline recommendations to local settings or country needs, with methods aiming for transparent approaches while minimising resource waste and duplication of efforts. The WHO develops high-quality, global level CPGs for use in low-resource settings which cover most of the key infectious conditions causing most deaths. However, these CPGs have not consistently been adopted, updated, or adapted in countries in SSA and other low-resource settings. Furthermore, lack of transparency in adaptation methods may cast doubts on the credibility of the CPGs and their recommendations. In order to understand the landscape of newborn and child-health CPGs in South Africa, this study sets out to identify, describe, and appraise the quality of national and provincial CPGs published in the past five years (2017 – 2022).

This study is part of a larger project, Global Evidence – Local Adaptation (GELA), which aims to increase researchers and decision makers' capacity to use global research evidence to develop locally relevant CPGs for newborn and child health. The GELA project aims to support decision makers in Malawi, Nigeria and South Africa, and to build on and add value to the large-scale programme of global child health CPG development led by the WHO with adaptation and implementation led by the WHO Afro regional office and national ministries.

02 OBJECTIVES

To identify publicly available at national and provincial level CPGs for newborn and child-health topics developed in the past five years in South Africa.

To describe the scope of the identified CPGs, including methods used and the stakeholders involved in the CPG development.

To appraise the quality and reporting standards of identified CPGs using the AGREE II tool for *de novo* CPGs and an adapted AGREE II for adapted CPGs.

03 METHODS

Search and identification

We conducted a cross-sectional analysis of the publicly available national and provincial CPGs, which include recommendations for newborn and child health. We searched for CPGs published between 1 January 2017 and 1 July 2022 using Google, Knowledge Hub (https://www.knowledgehub.org.za/) – a website that hosts national policies and guideline documents, as well as national and provincial Department of Health (NDoH) websites. We also contacted NDoH representatives for assistance in identifying updated CPGs and accessing hardcopies not published online.

Data extraction

Data were extracted using a pre-developed and piloted extraction form. Extracted data included title, year of publication, scope, condition or topic, target population, target users, responsible developers, stakeholder consultation process, names of members of the CPG development group, whether external reviewers were consulted, whether the overall certainty of the evidence was assessed (e.g. GRADE), and an explicit description of CPG development methods, including whether adaptation took place.

Appraisal of CPGs

The AGREE II instrument was used to appraise the quality of included CPGs.[8, 14] Each CPG was independently appraised by two reviewers and any discrepancies in scoring were resolved by consensus or through consulting a third reviewer if necessary. If a CPG explicitly stated that it was adapted, we aimed to appraise the quality of the parent CPG to understand the methods used. Each CPG was appraised using 23 key items categorised into six domains (Box 1) and rated on a seven-point scale i.e. 1 (strongly disagree) to 7 (strongly agree). Standardised domain scores were calculated by summing up all the scores of individual items in a domain *and by* standardising the total as a percentage of the maximum possible score for that domain.

Domain 1. Scope and Purpose (items 1-3) is concerned with the overall aim of the CPG, the specific clinical questions and the target patient population.

Domain 2. Stakeholder Involvement (items 4-6) focuses on the extent to which the CPG represents the views of its intended users. CPG development should involve all stakeholders whose activities are likely to be covered in the proposed CPG including patient groups.

Domain 3. Rigour of Development (items 7-14) relates to the process used to collect and synthesise the evidence, the methods to formulate the recommendations and to update the CPG.

Domain 4. Clarity of Presentation (items 15-17) deals with the language and format of the CPG.

Domain 5. Applicability (items 18-21) pertains to the likely barriers and facilitators to implementation strategies to improve uptake, and resource implications of applying the CPG.

Domain 6. Editorial Independence (items 22-23) is concerned with the formulation of the recommendations not being unduly biased with competing interests.

Box 1: AGREE II Domains

Data analysis

Data were analysed descriptively using Microsoft Excel and STATA 17. Medians with ranges were reported for AGREE II scores.

Results

Description of search results

After screening the records, 23 CPGs were considered eligible for inclusion in this landscape analysis. We verified this list with NDoH colleagues, after which four of the included CPGs were replaced by updated versions (Figure 1).

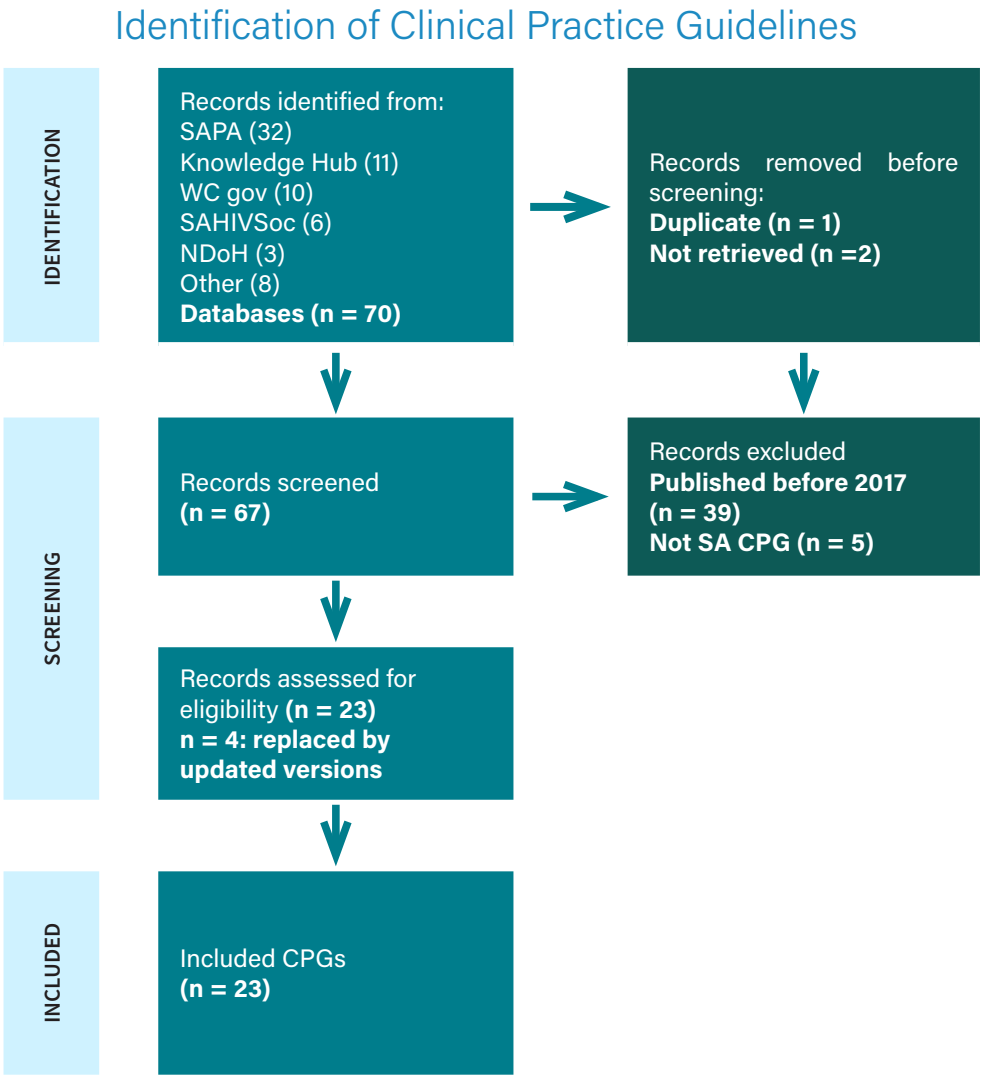

Figure 1: Prisma flow diagram of CPG selection

SAPA – South African Paediatric Association, WC gov – Western Cape government, SAHIVSoc – Southern African HIV Clinicians Society, NDoH – National Department of Health.

Description of included CPGs

Of the 23 included CPGs addressing newborn and child health, 21 were national- and two were provincial-level CPGs. The provincial CPGs were developed in the Western Cape and HIV-related. In some instances, individual CPGs addressed various target population age groups and scopes.

CPGs were developed by the NDoH (n = 14) and professional associations (n = 12). Only one CPG explicitly stated that it was adopted. However, we were not able to find the parent or source CPG and thus appraised the adopted guideline. We summarised age groups as classified in the CPGs where possible. Twenty CPGs were targeted at children, with the fewest CPGs (n = 8) addressing prenatal care (Figure 1). Most CPGs (n = 21) were intended for use by healthcare practitioners while only three considered parents/guardians. Many of the CPGs covered several aspects of care, but nearly all CPGs covered treatment/management of conditions (n = 20), followed by diagnosis, prevention, screening and rehabilitation (Figure 2).

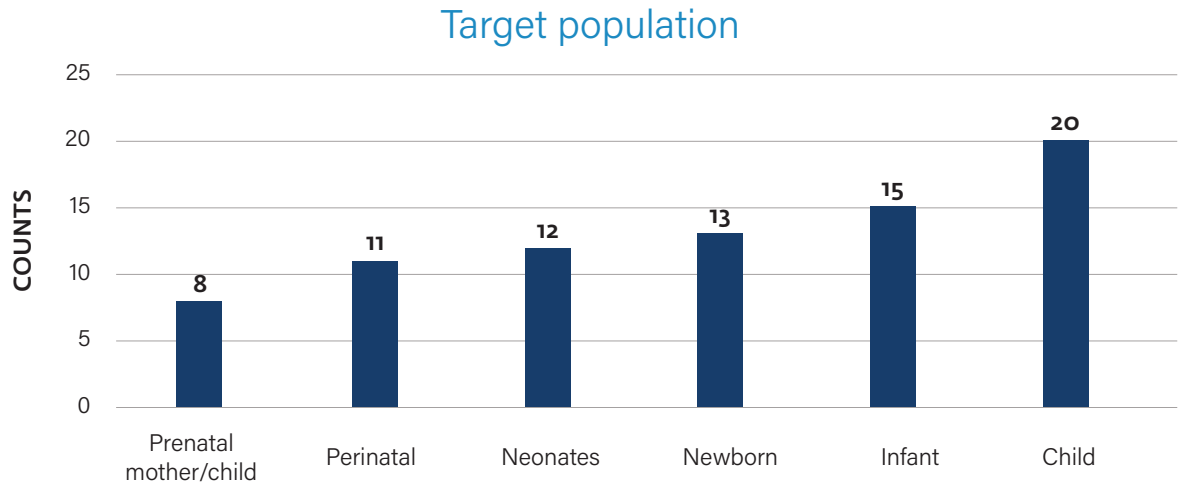

Figure 2: Target populations addressed by recent CPGs addressing newborn and child health in South Africa

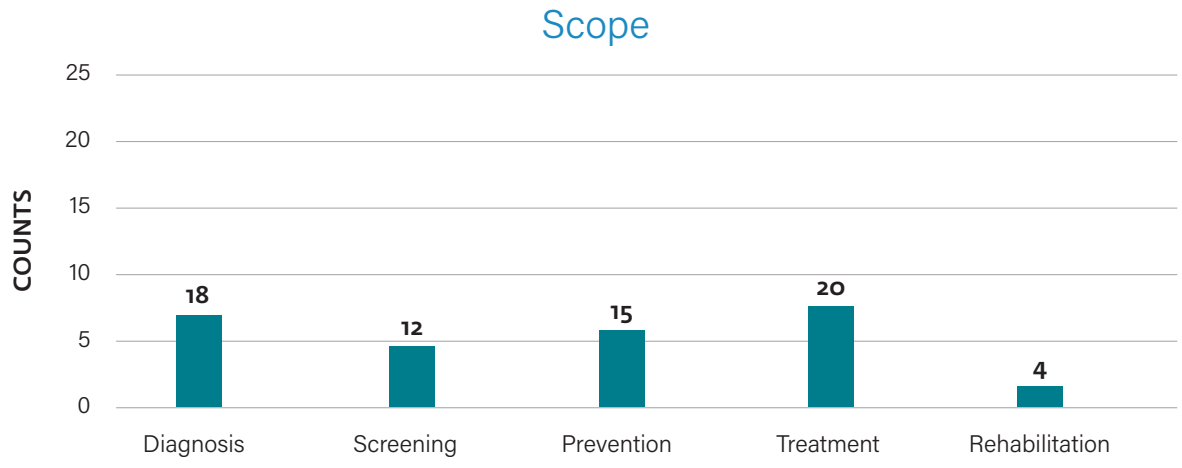

Figure 3: Scope of CPGs in South Africa

The majority of the CPGs (n = 14) provided guidance on communicable diseases, with only three providing guidance on non-communicable conditions (NCDs), and six providing guidance on a range of conditions, i.e. not disease-specific. The CPGs addressing communicable diseases provided guidance for *Candida auris* colonisation, COVID-19, pneumonia, diphtheria, HIV & tuberculosis (TB), prevention of mother-to-child transmission of HIV, malaria, pertussis, listeriosis, and post-exposure prophylaxis (PEP). The CPGs addressing NCDs provided guidance on asthma, cystic fibrosis and enuresis (see Table 1 for links to CPGs). The other non-disease specific CPGs provided guidance on cochlear implant services, determination of death, neonatal skincare, with two providing guidance regarding the management of various communicable and non-communicable diseases, i.e. the *Primary Healthcare Standard Treatment Guidelines (STGs) and Essential Medical List (EML)* and the *Standard Treatment Guidelines and Essential Medicines List for hospital-level paediatrics*, both targeted at healthcare professionals.

Table 1: Summary of included CPGs

Title of Guideline	Year	Topic (condition)
Communicable diseases		
Centre for Respiratory Disease and Meningitis Outbreak Response, Division of Public Health Surveillance and Response: Diphtheria: NICD Recommendations for 2018	2018	Diphtheria
Guideline for the Prevention of Mother to Child Transmission of Communicable Infections	2019	HIV & TB
Management of rifampicin resistant tuberculosis: A Clinical Reference Guide	2019	TB
National guidelines for the treatment of malaria, South Africa	2019	Malaria treatment
National guidelines for the prevention of malaria, South Africa	2018	Malaria prophylaxis
Listeriosis: Clinical recommendations for diagnosis and treatment	2017	Listeriosis
FIDSSA Guideline: Recommendations for Detection, Management and Prevention of Healthcare-Associated Candida Auris Colonisation and Disease in South Africa	2019	Candida Auris Colonisation and Disease
National consolidated guideline for the management of HIV in adults, adolescents, children and infants and prevention of mother-to-child transmission	2020	HIV Treatment: Prevention of Mother-to- Child Transmission of HIV (PMTCT)
The Western Cape Consolidated Guidelines for HIV Treatment: Prevention of Mother-to- Child Transmission of HIV (PMTCT), Children, Adolescents and Adults	2020	HIV, TB, TB-IRIS, Neurodevelopment and Cryptococcus
Diagnosis and management of community-acquired pneumonia in children: South African Thoracic Society guidelines	2020	Pneumonia
The Western Cape Guidelines for the Management & Post-Exposure Prophylaxis of Potential HIV and Hepatitis B Exposure in Children, Adolescents & Adults	2020	Post-Exposure Prophylaxis
South African Paediatric Association: Ambulatory care for children with COVID-19	2021	COVID-19

COVID-19 Clinical and Operational Guideline for Mothers, Newborns and Children. National Department of Health South Africa	2022	COVID-19
Pertussis: NICD Recommendations for Diagnosis, Management and Public Health Response	2017	Pertussis
Non-communicable diseases		
Asthma treatment in children: A pragmatic approach. SAMJ 2018; **108**(8):612-618.	2018	Asthma
The South African Cystic Fibrosis Consensus Guidelines	2017	Cystic Fibrosis
The South African guidelines on Enuresis—2017	2018	Enuresis
Other (non-disease specific)		
Standard treatment guidelines and essential medicines list for South Africa hospital level paediatrics, 2017 edition	2017	STG Paediatric
The National Department of Health, South Africa: Essential Drugs Programme. Primary Healthcare Standard Treatment Guideline and Essential Medicine List. 7th ed	2020	STG PHC
Integrated Management of Childhood Illness (IMCI)	2019	IMCI
Quality Standards Cochlear Implant Services for Adults and Children in South Africa	2020	Cochlear Implant
South African Guidelines on the determination of death	2021	Determination of death
South Africa Neonatal Skin Care Evidence-based Clinical Practice Guidelines [Adopted CPG]	2018	Neonatal skin care

Quality of CPGs

A summary of AGREE II scores is presented in Table 2 and Figure 3, with CPG scores presented as percentages ranging from 0 to 100 across all domains. The median score for overall quality was 42% (range: 13 – 75%). The CPGs with the highest overall score were the Primary Healthcare Standard Treatment Guideline (75%), the Determination of Death CPG (67%), and the Candida Auris CPG (67%). The provincial level CPGs had the lowest overall scores of 13 and 17%.

The domain with the lowest median score was editorial independence [4% (range 1 – 100%)], followed by rigour of development [15% (range 1 – 66%)], and applicability 31% (range 0 – 96%). While the domains with highest median scores were clarity of presentation [92 % (range 42 – 100%)] and scope and purpose [61% (range 0 – 97%)].

Most CPGs failed report to on methods such as systematic approaches for selecting evidence, criteria for selection of evidence as well as assessing certainty of evidence (grading). Four CPGs stated that a grading system for evidence was applied. External reviewers were consulted in five CPGs, however, this process was not clearly described in three. Contextual data including costs, etc. were included in four CPGs. The names of CPG panel/development group members were provided in 13 of the 23 CPGs.

To make the results clearer, domain and overall scores are colour coded in Table 2.

Table 2: Summary of AGREE II scores in percentages

AGREE II Domains	Scope and purpose	Stakeholder involvement	Rigour of development	Clarity of presentation	Applicability	Editorial independence	Overall
Overall median	61	39	15	92	31	4	42
Overall range	0 – 97	3 – 72	1 – 66	42 – 100	0 – 96	0 – 100	13 – 75
Diphtheria	0	19	2	92	0	0	50
TB	81	50	6	100	54	33	50
Enuresis	97	67	39	97	94	96	58
Pneumonia	50	11	38	81	10	0	50
STG_ PHC	67	72	20	94	96	75	75
STG_ Paediatric hospital level	89	64	41	100	77	0	58
PMCT	39	33	22	92	50	96	33
Malaria treatment	94	64	15	94	50	0	50
Malaria prevention	56	56	18	97	38	0	50
Listeriosis	56	39	4	89	4	0	33
HIV and PMTC	94	53	6	94	6	0	42
WC HIV and PMTC	75	3	19	89	50	13	13
WC HIV PEP	44	3	3	61	42	0	17
COVID 19	33	14	4	69	0	8	17
Pertussis	17	11	6	53	2	4	33
Determination of death	44	56	66	92	44	79	67
Asthma	64	39	47	81	8	38	50
COVID-19	28	11	1	72	13	0	42
Cochlear implant	61	33	10	44	31	0	25
New-born skincare	72	56	26	64	0	25	42
Candida Auris	78	61	40	97	23	100	67
Cystic fibrosis	69	56	10	42	15	4	17
IMCI	39	0	8	100	42	0	33

STG – standard treatment guidelines, PHC – primary health care, TB – tuberculosis, PMTC – prevention of mother-to-child infections, HIV – human immunodeficiency virus, WC – Western Cape, PEP – post-exposure prophylaxis, IMCI – integrated management of childhood illnesses.

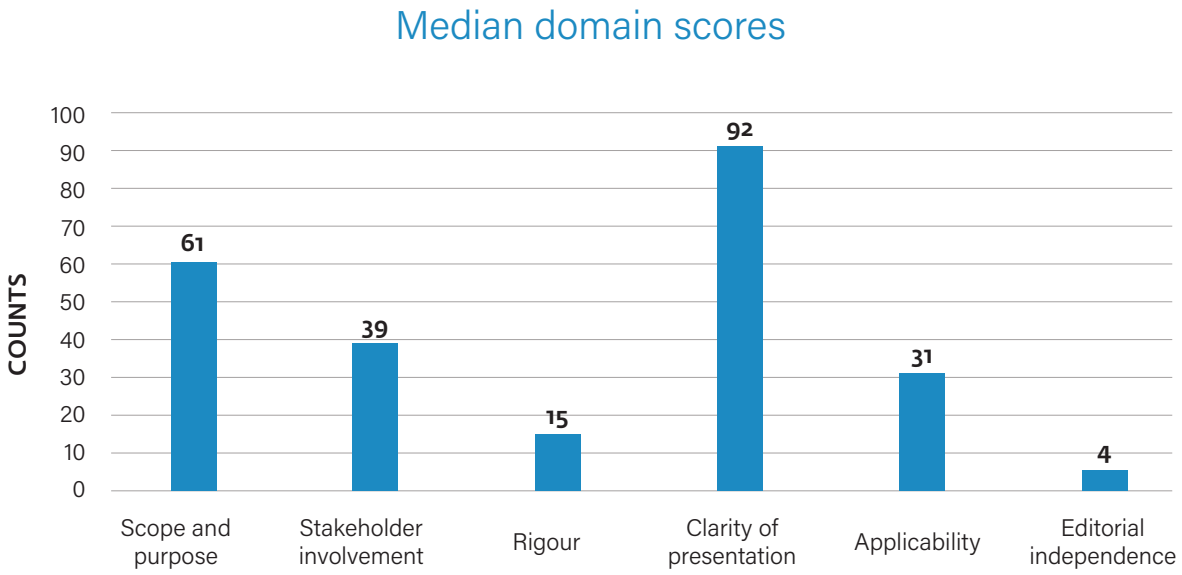

Figure 4: Graphical depiction of domain median scores for all CPGs combined

04 DISCUSSION

This study described and assessed the quality of SA national and provincial level CPGs for newborn and child health published between June 2017 and July 2022. According to our findings, CPG development is largely lead by the NDoH and professional associations, and they cover a large scope, including prevention, diagnosis, treatment and rehabilitation. Most CPGs addressed communicable diseases, however, the primary care and paediatric hospital-level STGs covered all commonly occurring communicable and non-communicable conditions relevant for the public sector in South Africa.

In terms of their quality, most CPGs did not report their methods, their applicability, and their editorial independence adequately which means that the funding interests of the panels making the recommendations are not clear. AGREE II score were consistent with data extracted from CPGs which showed that most CPGs were developed without assessing certainty of evidence, consulting external reviewers and stakeholders, or taking into account contextual factors.

Considering what we know about the burden of disease in this age group, it is clear that some conditions are not adequately covered. As previously mentioned, leading causes of death of under-fives in South Africa include neonatal disorders, gastroenteritis, pneumonia, malnutrition, congenital disorders, TB and HIV.[3] There is an apparent gap in CPGs addressing key conditions such as malnutrition, neonatal and congenital disorders. Another potential gap is CPGs targeted at management of co-morbid conditions in newborn and children. Conditions such as malnutrition, HIV and TB are likely to co-exist especially in low-resource settings.[15] Furthermore, it may be important to consider the potential shift in burden of disease from communicable towards NCDs.[16, 17] A recent study conducted by Jensen, *et al* (2022) in KwaZulu-Natal described patterns of hospital admissions on children's wards (age two weeks to 13 years), and reported that 43.5% of admissions were due to NCDs including endocrine/blood/immune conditions, neurological disorders, cardiovascular diseases, respiratory diseases, digestive diseases etc.; while only 37.4% were due to communicable disease such as diarrhoeal, meningitis, neonatal conditions etc.; and, 17.1% were due to unintentional injuries.[15] However, this provincial-level data may not reflect the national statistics.

South Africa has the highest burden of HIV in sub-Saharan Africa and the largest antiretroviral programme.[18] Despite this, the quality of reporting in the three HIV-related CPGs was poor, with overall AGREE II scores ranging from 13 to 42%, and the rigour of development-domain scores ranging from 3 to 19%. This was in line with a previous report by Machingaidze *et al* (2017), where adult and child HIV

CPGs had overall scores of 33 and 42%, respectively.[11] It is noteworthy, that recommendations from most of these CPGs were specific and clearly presented as reflected by the high median score of the clarity of presentation domain (92%). However, the poor-quality reporting of current CPGs may decrease the credibility of their recommendations. It is also possible that some guidance and recommendations were adapted from WHO CPGs, but due to lack of transparency in methodology, this was not explicitly stated.

In summary, the following gaps should be addressed:

- The quality of reporting of CPGs for newborn and child health in South Africa should be enhanced, particularly reporting on systematic approaches to identifying, selecting, and assessing evidence.
- Efforts should be made to increase the involvement and engagement of all relevant stakeholders, as well as to consider contextual factors during CPG development.
- Better processes should be put in place for the management of interests and disclosing of funding sources.
- There may be a benefit in strengthening collaborations between the NDOH and professional associations to minimise duplication of efforts, maximise access to experts in the field, strengthen CPG development methods, and streamline the focus to conditions contributing to the burden of disease in newborn and child health.
- A dedicated central CPG repository would reduce challenges in finding and using CPGs by users.

Limitations of the study

Due to the lack of a CPG repository, it is possible that we may have missed relevant CPGs. Our search was limited to CPGs developed in the last five years and it is thus possible that there are outdated CPGs for some conditions in the process of being updated. Some CPGs may have followed rigorous methods, but due to poor reporting standards, this may not be well captured in the methods. Agree II only appraises reporting of methods but does not cover the content of the guidelines. The recommendations may be appropriate even if the methods are not adequately reported.

05 IMPLICATIONS FOR PRACTICE AND POLICY

End-users of CPGs including policy makers may lack the skills to assess the quality of CPGs, leading to adoption of poor-quality CPGs.

Implementation of CPGs without accurately assessing contextual factors may increase the risk of health inequities.

06 CONCLUSION

The findings of this study highlight the urgent need to improve and standardise CPG quality and reporting methods, as well as to increase the involvement of all stakeholders during CPG development. This study also highlights gaps in current CPGs for conditions that contribute to the burden of disease in newborn and child health in South Africa, including malnutrition, neonatal and congenital disorders, as well as the coexistence of conditions. Mortality in newborn and children is often attributable to communicable diseases, however, morbidity due to non-communicable diseases may also begin from birth or childhood. Hence, well-developed CPGs providing guidance and recommendations for NCDs are also important.

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Appendix A

Search terms

Search terms	Newborn health OR infant health OR baby health OR Perinatal health OR child health OR toddler health OR preadolescent child health OR Childhood illnesses OR childhood diseases OR Infant diseases OR Newborn illnesses OR Poverty related disease OR Maternal and child health

Eligibility criteria

Documents	**Include:** CPGs are defined by WHO as "systematically developed evidence-based statements which assist providers, recipients, and other stakeholders to make informed decisions about appropriate health interventions". Documents that put forward actionable recommendations for individual care. The CPGs may be developed *de novo* (from scratch); or adapted or adopted and refer to a primary CPG or more than one primary CPG.
Focus area	Newborn and child health from birth to 12 years. CPGs that recommend options for health promotion, diagnosis of health conditions or interventions for prevention or management or rehabilitation. Where documents also make recommendations for care of other age groups, e.g. adolescents or mothers/caregivers, Sections dedicated to healthcare recommendations for newborn and child health were included.
Settings	National and provincial CPGs South Africa.
Publication year	From 1 January 2017 - 2022
Language	English and any other South African official languages

Appendix B

Characteristics of included CPGs

Title of Guideline	Year	National / provincial	Level of care	CPG scope	Target population	Target condition(s)
Standard treatment guidelines and essential medicines list for South Africa hospital level paediatrics, 2017 edition	2017	National	Secondary Tertiary	Diagnosis Screening Prevention Treatment Rehabilitation	Child Newborn / neonate / infants	Various conditions
Listeriosis: Clinical recommendations for diagnosis and treatment	2017	National	Primary	Diagnosis Screening	Child	Listeriosis
Pertussis: NICD Recommendations for Diagnosis, Management and Public Health Response	2017	National	Primary Secondary Tertiary	Diagnosis Prevention Treatment	Child Perinatal Newborn / neonates / infants	Pertussis
The South African Cystic Fibrosis Consensus Guidelines	2017	National	Primary Secondary Tertiary	Diagnosis Screening Treatment	Child Perinatal Newborn / neonates / infants	Cystic fibrosis
Centre for Respiratory Disease and Meningitis Outbreak Response, Division of Public Health Surveillance and Response: Diphtheria: NICD Recommendations for 2018	2018	National	Primary secondary	Diagnosis Screening Prevention Treatment	Child	Diphtheria
National guidelines for the prevention of malaria, South Africa	2018	National	Primary Secondary	Diagnosis Prevention	Prenatal Perinatal newborn/infants	Malaria prevention
The South African guidelines on Enuresis—2017	2018	National	Not clear	Diagnosis Screening Treatment	Child	Enuresis
Asthma treatment in children: A pragmatic approach	2018	National	Primary Secondary	Diagnosis Prevention Treatment	Child Prenatal Perinatal Newborn / neonates / infants	Asthma
South Africa Neonatal Skin Care Evidence-based Clinical Practice Guidelines	2018	National	Secondary Tertiary	Prevention Treatment	Child Perinatal Newborn / neonates / infant	Neonatal skincare

FIDSSA Guideline: Recommendations for Detection, Management and Prevention of Healthcare-Associated Candida Auris Colonisation and Disease in South Africa	2019	National	Primary Secondary Tertiary	Diagnosis Screening Prevention Treatment	Child Newborn/ neonates/ infants	Candida Auris
Guideline for the Prevention of Mother- to-Child Transmission of Communicable Infections	2019	National	Primary secondary Tertiary	Diagnosis Screening Prevention Treatment	Prenatal Newborn/infants	HIV and TB
Management of rifampicin-resistant tuberculosis: A clinical reference guide	2019	National	Primary secondary Tertiary	Diagnosis Screening Treatment	Child	TB
National guidelines for the treatment of malaria, South Africa.	2019	National	Primary Secondary Tertiary	Diagnosis Prevention Treatment	Prenatal Newborn /infants	Malaria treatment
Integrated Management of Childhood Illness (IMCI	2019	National	Primary	Diagnosis Screening Prevention Treatment Rehabilitation	Child Newborn / neonates / infant	Various conditions
National consolidated guideline for the management of HIV in adults, adolescents, children and infants and prevention of mother-to-child transmission.	2020	National	Primary Secondary Tertiary	Diagnosis Screening Prevention Treatment	Child Prenatal Perinatal Newborn / neonate / infants	HIV and PMTCT
The Western Cape Consolidated Guidelines for HIV Treatment: Prevention of Mother-to- Child Transmission of HIV (PMTCT), Children, Adolescents and Adults	2020	Provincial	Primary Secondary	Diagnosis Screening Prevention Treatment	Child Prenatal Perinatal Newborn / neonates / infants	Western Cape HIV and PMTCT
Diagnosis and management of community-acquired pneumonia in children	2020	National	Primary	Diagnosis Prevention Treatment	Child	Pneumonia
The National Department of Health, South Africa: Essential Drugs Programme. Primary Healthcare Standard Treatment Guideline and Essential Medicine List. 7th ed	2020	National	Primary	Diagnosis Screening Prevention Treatment Rehabilitation	Child Prenatal Perinatal Newborn / neonates / infants	Various conditions

Quality Standards Cochlear Implant Services for Adults and Children in South Africa	2020	National	Tertiary	Treatment Rehabilitation	Child Infants	Cochlear implant
The Western Cape Guidelines for the Management & Post-Exposure Prophylaxis of Potential HIV and Hepatitis B Exposure in Children, Adolescents & Adults	2020	Provincial	Primary	Prevention	Child Infants	Post exposure prophylaxis
South African Paediatric Association: Ambulatory care for children with COVID-19	2021	National	Primary Secondary	Diagnosis Treatment	Child	COVID-19
South African Guidelines on the determination of death	2021	National	Secondary Tertiary	screening	Child Perinatal Newborn / neonates / infants	Determination of death
COVID-19 Clinical and Operational Guideline for Mothers, Newborns and Children. National Department of Health South Africa	2022	National	Secondary Tertiary	Diagnosis Screening Prevention Treatment	Child Prenatal Perinatal Newborn / neonates / infants	COVID-19

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