

# SOUTH AFRICAN GUIDELINES EXCELLENCE PROJECT (SAGE) 2014 – 2018

FINAL REPORT



## PROJECT SAGE

SOUTH AFRICAN GUIDELINES EXCELLENCE

An innovative partnership for clinical guideline excellence



**IN PARTNERSHIP WITH:**



# CONTENTS

<b>Executive summary.....</b>	<b>1</b>	<b>Goals 4 and 5: Guideline resource, capacity building, training and development .....</b>	<b>13</b>
Implications for policy and practice .....	2	Objectives .....	13
To enhance CPG development for South Africa.....	2	Methods .....	13
To enhance CPG implementation in South Africa .....	2	Main outputs.....	14
<b>Background.....</b>	<b>3</b>	Educational outcomes of the Masters level	
<b>Aim .....</b>	<b>3</b>	CPG module .....	15
<b>Partners and governance .....</b>	<b>5</b>	Summary.....	15
Advisory Group Members.....	5	<b>Scoping Project: Global Guideline Co-ordination</b>	
Research team .....	5	<b>Units .....</b>	<b>16</b>
<b>Goal 1: Mapping to understand players, drivers and context for the development and implementation of primary healthcare clinical practice guidelines .....</b>	<b>6</b>	Objectives .....	16
Objectives .....	6	Methods .....	16
Methods .....	6	Main findings .....	16
Main findings .....	6	Summary.....	17
Summary – national stakeholders .....	7	<b>SAGE Summit .....</b>	<b>18</b>
Summary – allied health stakeholders .....	7	Objectives .....	18
SAGE Publications.....	8	Programme .....	18
<b>Goal 2: Primary care clinical practice guideline identification and appraisal .....</b>	<b>9</b>	Summary of discussions.....	18
Objectives .....	9	<b>SAGE Panel discussion on adapting CPGs.....</b>	<b>19</b>
Methods .....	9	Objectives .....	19
Main findings .....	9	Programme .....	19
Summary.....	10	Panelists.....	19
SAGE Publications.....	10	<b>Project outputs.....</b>	<b>20</b>
<b>Goal 3: Mapping requirements of clinical practice guideline stakeholders to identify barriers and facilitators to implementation and use in the South African primary care context.....</b>	<b>11</b>	Publications.....	20
Objectives .....	11	Conference presentations .....	21
Methods .....	11	SAGE reports .....	22
Main findings .....	12	SAGE Newsletters .....	22
Related publications.....	12	Useful resources.....	22
Summary.....	12	Acknowledgements.....	23
		Ethics .....	23
		References.....	23

# ABBREVIATIONS

<b>AH</b>	Allied Health
<b>CEBHC</b>	Centre for Evidence-Based Health Care
<b>CPG</b>	Clinical Practice Guideline
<b>EBM</b>	Evidence-Based Medicine
<b>G-I-N</b>	Guidelines International Network
<b>HSRU</b>	Health System Research Unit, South African Medical Research Council
<b>HTA</b>	Health Technology Assessment
<b>iCAHE</b>	International Centre for Allied Health Evidence
<b>ICT</b>	Information and Communication Technologies
<b>LMICs</b>	Low and Middle-Income Countries
<b>NHI</b>	National Health Insurance
<b>NDoH</b>	National Department of Health
<b>PC</b>	Primary Care
<b>PHC</b>	Primary Healthcare
<b>SA</b>	South Africa
<b>SAGE</b>	South African Guidelines Excellence
<b>SAMRC</b>	South African Medical Research Council
<b>SU</b>	Stellenbosch University
<b>UniSA</b>	University of South Australia

# EXECUTIVE SUMMARY

Clinical practice guidelines (CPGs) are intended to improve the efficiency and cost-effectiveness of health services and health system utilisation and to decrease costly, preventable mistakes. CPGs must therefore be based on current best evidence to ensure our limited resources are used wisely.

The South African Guidelines Excellence project (SAGE) is a collaborative research effort that works across networks to consolidate methods and training for better CPG development, implementation and use. SAGE explored South African primary care CPG development, implementation and use; alongside a multi-pronged capacity development programme including a Master's level course, workshops, postgraduate student support and a valuable 'one-stop-shop' resource to support the CPG community - an online Guideline Toolkit (<https://guidelinetoolkit.org.za/>).

## CPG DEVELOPMENT

We found that primary care CPG development is a complex process, but includes a dedicated community of developers who agree that CPG development needs to be underpinned by efficient, respectful and standardised processes – including declaring and managing conflicts, identifying efficient ways of hearing constituent 'voices', and training. National co-ordination across CPG activities might enhance current CPG processes. SAGE identified novel approaches that could support better quality guideline writing (the three-tiers model) and implementation (the Adopt, Contextualise, Adapt model).

## CPG IMPLEMENTATION AND USE

From CPG users in primary care we found that one of the main issues was access to current CPGs – better distribution of printed documents as well as enhanced technology and ICT access is needed. There was concern regarding the practicality of recommendations in CPGs for primary care, where adaptation is required to support clinical practice. End-users wanted to have a 'voice' in CPG development to ensure some of the practical issues they perceived are appropriately incorporated in CPGs. Lack of access to working equipment or medicines posed a substantial barrier to implementing recommendations. Design features that could enhance CPG use include use of simpler language and summaries, local language support tools, and patient engagement tools (e.g. posters). Primary care healthcare providers, mostly nurse practitioners, suggested that they would be more likely to use CPGs if they had electronic access (via mobile, laptop, etc.) to the most up-to-date CPGs when needed. In-facility training and post-workshop clinical

support, to complement off-site workshops, is needed to build and enhance strong clinical teams that can deliver integrated clinical services. Change champions in primary care in the provinces are leading and developing exciting programmes and systems to ensure use of the CPGs. These innovations could be shared to improve implementation in practical and locally applicable ways.

## CPG CAPACITY DEVELOPMENT

Building capacity is crucial in South Africa and other low- and middle-income countries to facilitate uniformity and quality in how CPGs are developed and implemented. To understand the international landscape in CPG training, the SAGE team conducted a review of all CPG courses offered globally. We found that CPG training courses, albeit limited, are mostly delivered by universities (as component courses of professional degrees) and professional groups (as short courses). Using an already available CPG module offered as part of the Masters in Clinical Epidemiology at Stellenbosch University ([www.sun.ac.za/clinepi](http://www.sun.ac.za/clinepi)), we transformed the content of this module to be contextually relevant. We further enhanced the South African course by developing an online, open-access CPG development toolkit. This Guideline Toolkit is a comprehensive guideline resource designed to assist healthcare professionals, managers, academics and policy makers who are interested in knowing how to develop CPGs. We also supported postgraduate students conducting research on CPG development or implementation.

## INFORMING CONCEPTUALISATION OF A CPG CO-ORDINATION UNIT FOR SOUTH AFRICA

The need for co-ordination of national CPG activity was consistently raised through the research, by our Advisory Board, and from stakeholders who participated in our summits and events. We therefore developed a project to scope the structure and functions of CPG co-ordination units globally. Following web searching and contacting key individuals in CPG development, we identified 21 units for inclusion. The main tasks undertaken include CPG development; providing access to CPGs (e.g. clearinghouse); approval and endorsement for implementation; adopt, contextualise, adaptation of CPGs; methodological support; and, health technology assessment (HTA). Less commonly reported tasks included commissioning CPGs; critical appraisal; setting standards for CPG development; capacity

building; and monitoring and evaluation. Co-ordination/governance and priority setting was not part of the role in most units. Several challenges were reported including establishment and maintenance of the units due to funding, human resource issues, buy-in for the processes and technical and methodological challenges. As we progress to the planned National Health Insurance system, South African national policymakers will need to consider how we bridge private and public sectors in providing health services. The results of this scoping report are available to contribute to the discussions and planning in support of universal health coverage.

## CONCLUSION

CPGs are useful tools for implementing best-available evidence to support health services. The primary care CPG developers, implementers and users we interviewed are generally committed to contributing their knowledge and skills to enhance CPG work and ultimately impact on the health of South Africans. There is a need for dedicated funding to support primary care CPG development, including co-ordination and overseeing of CPG activities; recognition and remuneration of clinical experts who contribute to individual CPGs; and, investment in effective implementation strategies. Involving healthcare providers in CPG activities is likely to enhance ownership and, in turn, successful implementation. To address the challenges and opportunities our research uncovered, the SAGE Project has been able to enhance the availability of comprehensive capacity building opportunities, including an online toolkit, for South African CPG developers and implementers. In South Africa we want to ensure CPGs are credible, and applicable for primary care. Project SAGE's research and capacity building components aimed to contribute to the debate and growth of CPG activities in South Africa.



## IMPLICATIONS FOR POLICY AND PRACTICE

### To enhance CPG development for South Africa

- Harness the contributions and commitment of the CPG interest community.
- Develop a common glossary of terminology with input from stakeholders to define CPG-related activities.
- Agree on standards and methods for CPG development in South Africa that can inform all CPG development groups across sectors and disciplines, including how conflicts of interest should be declared and managed.
- Create platforms for input from healthcare providers and patients in CPGs at development and implementation stages.
- Work towards setting up a nationally co-ordinated CPG unit to co-ordinate and provide technical support for development.
- The SAGE CPG training and the online toolkit <https://guidelinetoolkit.org.za/> can support capacity development for SA CPG developers and implementers.

### To enhance CPG implementation in South Africa

- Build on the available implementation activities such as CPG book dissemination, CPG app development and dissemination, and regional training initiatives.
- Equip staff with specific implementation-related knowledge and skills to enhance uptake of available guidance products.
- Specifically, for the CPG books, ensure adequate quality and quantity copies are made available, particularly in rural areas.
- For healthcare providers: develop supportive implementation tools to enhance use of CPGs.
- For patients: develop colourful new resources including posters and information leaflets. These should include use of local language and relevant examples.
- Continue to address health system challenges including budgetary and supply-chain challenges to ensure provision of equipment and medicines necessary for CPG adherence.
- Step up provision of off-site training workshops and in-facility educational outreach that reaches all staff followed by post-training support including supervision and mentoring.
- Provide leadership training for enhanced governance and stronger teams.
- Ensure supportive clinical audits with feedback at regular intervals.

# BACKGROUND

There is an urgent need to improve the quality of primary care (PC) practices across South Africa to ensure good use of available resources, equity of access, and best value for spend [1, 2]. Internationally, high-quality, evidence-informed clinical practice guidelines (CPGs) are recognised as central quality improvement tools [3]. CPGs have a range of purposes, intended to standardise care, improve its quality and safety, reduce wastage, decrease costs, and improve access to care and patient outcomes [4, 5]. High-quality, evidence-informed CPGs offer a way of bridging the gap between policy, best-practice, local contexts and patient choice [6]. They offer a 'one-stop shop' for end-users, by providing composite information from comprehensive literature reviews regarding best practices in assessment, diagnosis, management and/or monitoring of specific conditions [7].

South Africa has been a contributor to CPG development and implementation for several decades. The National Department of Health (NDoH) spearheads several primary care guideline programmes – including condition-specific guidelines (e.g. malaria, HIV, tuberculosis) and the Essential Medicines Programme which develops comprehensive Standard Treatment Guidelines for rational prescription at all levels of care (primary, secondary and tertiary, quaternary) in an equitable, cost-effective manner. Additionally, academic departments and professional societies develop CPGs, addressing gaps in what is available from the NDoH. Regionally, there is evidence that South Africa is a node of technical expertise in this field, with the quality of our guideline development exceeding that of our regional neighbours in the Southern African Development Community [8]. In addition to contributions to guideline development, South African researchers are global leaders in research into implementation, conducting high-quality studies evaluating CPG uptake [9, 10].

Despite innovative South African activities into CPG development and implementation, there is much room for improvement to match global standards [11, 12]. Currently, there is no available guidance on standard approaches to developing, adapting or implementing CPGs efficiently or effectively in South Africa. International guideline groups have their own unique processes, and each comes highly recommended [13, 14], making it a challenge to select what is most relevant for the local context. In addition, information is lacking on the context and processes of guideline development, adherence to guidelines, and factors that improve their accessibility and use. This is particularly concerning considering the diverse contexts of care found

across the country, and the limited resources available to underwrite quality healthcare for all. Local research is therefore needed, involving stakeholders with recognised expertise, to better understand the flow of information regarding quality guideline development, adaptation or contextualisation; effective implementation; and evaluation. This knowledge will help pave the way for better-focused and more effective and efficient interventions to improve healthcare outcomes.

South Africa is undergoing primary healthcare re-engineering, including progressing towards a National Health Insurance (NHI) system [15]. In this changing healthcare environment, healthcare providers need clear, trustworthy guidance on how best to care for their patients so that all can reasonably reach the ideals of quality in healthcare.

The NHI system will require agreement and integration across sectors and jurisdictions, and national CPGs will need to speak to healthcare needs of all to ensure equal service delivery and redress of ongoing 'fault lines' in the system [16]. This transition from the current health system arrangement to NHI provides a window of opportunity to explore the current 'state of play' of CPG development and implementation in order to help inform NHI goals and processes.

It was against this backdrop that the South African Guidelines Excellence (SAGE) project (<http://www.mrc.ac.za/cochrane/sage.htm>) was funded as a Flagships Awards Project by the South African Medical Research Council (SAMRC-RFA-IFSP-01-2013/ SAGE). The overarching goal of the Flagship idea is to support large-scale, innovative, interdisciplinary research projects to address health problems in South Africa.

## AIM

Project SAGE is a multi-partner research initiative aimed at setting in motion a stakeholder-driven process to contribute to both understanding and improving standards of national CPG development, adaptation and implementation for primary healthcare (PHC). The project consisted of several components, including stakeholder mapping; local guideline quality evaluation; systematic review of 'gold standard' CPG development strategies; identification of implementation enablers and constraints; development of an online CPG resource; and, capacity building opportunities for those involved in CPG development and implementation. These components can be divided into three project phases – mapping, development, and capacity building (Figure 1).

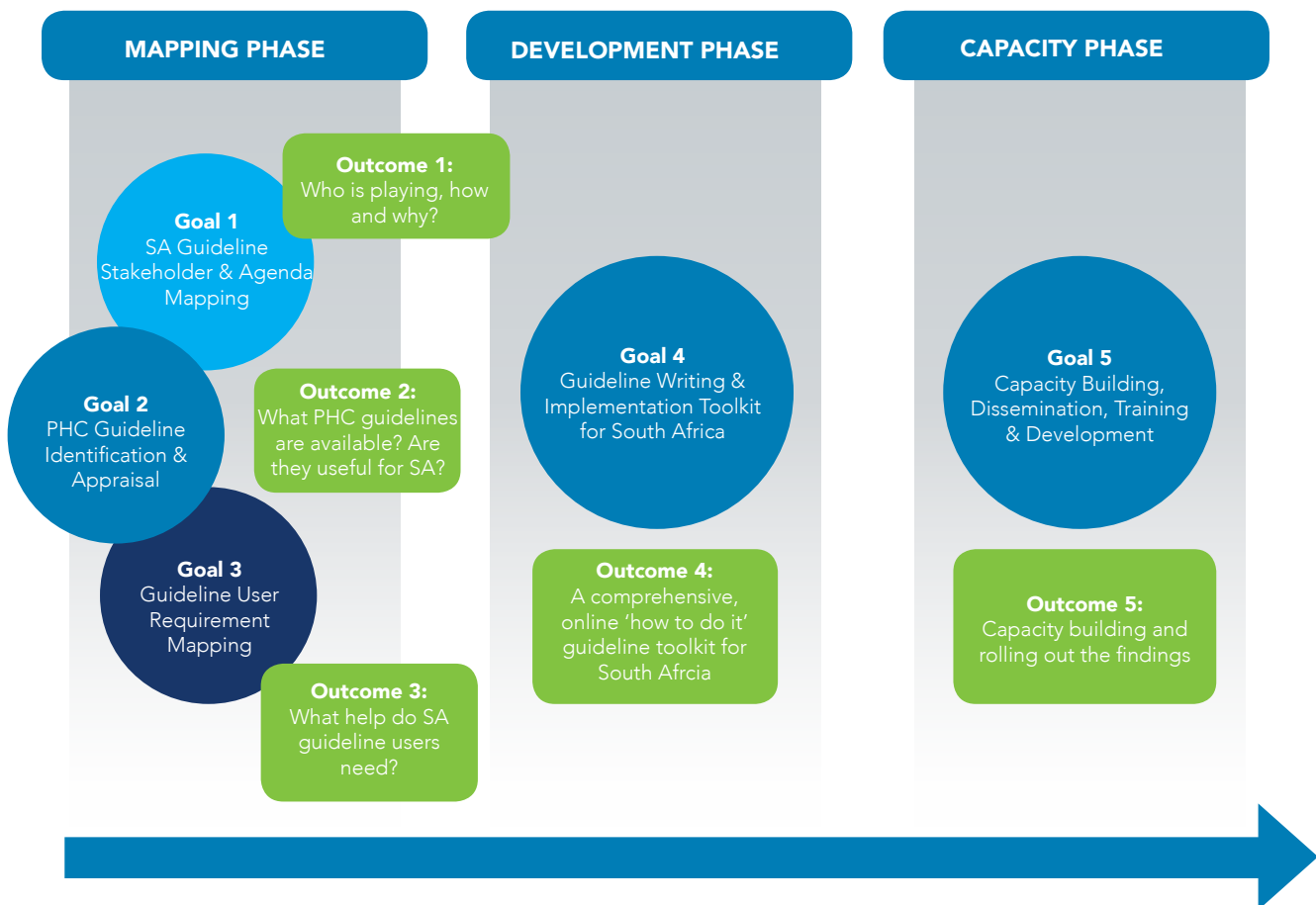


Figure 1: SAGE project outline

## PARTNERS AND GOVERNANCE

- Cochrane South Africa and the Health Systems Research Unit (HSRU), South African Medical Research Council (SAMRC)
- Centre for Evidence-Based Health Care (CEBHC) and Division of Physiotherapy, Faculty of Medicine and Health Sciences, Stellenbosch University (SU)
- International Centre for Allied Health Evidence (iCAHE), University of South Australia (UniSA)

The Management Group oversaw the effective implementation of the project. The group was chaired by

SAGE Principal Investigator, Dr Tamara Kredo (Cochrane SA) and group members included Prof. Taryn Young (CEBHC, Stellenbosch University) and Prof. Quinette Louw (Division of Physiotherapy, Stellenbosch University).

Two supporting advisory groups – the nationally representative Strategic Advisory Group and a Methods Advisory Group provided advice on project design, implementation, analysis and partnerships, to maximise project benefit to policy makers, clinicians and the community.





## ADVISORY GROUP MEMBERS

- Ms Jeanette Hunter, Deputy Director General Primary Health Care, South African Department of Health
- Dr Shaidah Asmall, Technical Advisor, Primary Health Care, Department of Health
- Mr Gavin Steel, Chief Director, Sector Wide Procurement., Department of Health
- Dr Peter Barron, Technical Advisor, Department of Health, School of Public Health, Faculty of Health Sciences, University of the Witwatersrand
- Dr Ina Diener, Deputy President, South African Society of Physiotherapy
- Prof. Jimmy Volmink, Dean, Faculty of Medicine and Health Sciences, Stellenbosch University
- Prof. Jeremy Grimshaw, Senior Scientist, Ottawa Hospital Research Institute, Canada
- Dr Simon Lewin, Senior Health Systems Researcher, Norwegian Knowledge Centre for the Health Services, Norway and Health Systems Research Unit, SAMRC
- SAGE Management team members

## RESEARCH TEAM

Tamara Kredo	Michael McCaul	Shingai Machingaidze
Taryn Young	Tebogo Mokganyetji	Solange Durao
Quinette Louw	Jocelyn Muller	Hameeda Parker
Karen Grimmer	Janine Dizon	Linzette Morris
Karen Daniels	Sara Cooper	Michelle Galloway
Jimmy Volmink	Eleanor Ochodo	Annette Gerritsen
Amber Abrams	Babalwa Zani	Joy Oliver



The start-up meeting for the SAGE project held in December 2013. Clockwise – Debra Kay, Karen Grimmer, Quinette Louw, Taryn Young, Tamara Kredo and Karen Daniels

# GOAL 1:

## MAPPING TO UNDERSTAND PLAYERS, DRIVERS AND CONTEXT FOR THE DEVELOPMENT AND IMPLEMENTATION OF PRIMARY HEALTHCARE CLINICAL PRACTICE GUIDELINES

### OBJECTIVES

- Explore primary care CPG players and practices.
- Explore current processes of PHC CPG development, contextualisation and implementation.

### METHODS

A qualitative research design was employed, including semi-structured interviews and thematic content analyses. We started with purposely sampling individuals known to be national contributors to guideline work, followed by snowballing techniques to identify networks. Further purposive sampling was conducted to address gaps.

Thirty seven interviews were conducted including stakeholders from the NDoH, medical aids, professional societies, the pharmaceutical industry, and across disciplines including medicine, pharmacy, allied health, nutrition, nursing and dentistry.

As little is known about allied health (AH) CPG activity in South Africa, particularly as it relates to primary care, an allied health sub-study was conducted to understand South African AH CPG activities. For the sub-study, a comprehensive stakeholder reference framework was included to capture the heterogeneity of AH primary care CPG activity in South Africa. The sample included national and purposively selected provincial governments, academic institutions, consultants, public sector managers and clinicians, private practitioners, professional associations and private sector insurers. Twenty four AH interviews were completed.

### MAIN FINDINGS

#### NATIONAL STAKEHOLDERS

Very little is documented about current processes for primary care CPG development and implementation in South Africa. We found that multiple stakeholders are contributing to CPG work, across government departments, healthcare disciplines and sectors. Main role-players include the NDoH, professional societies and private medical insurers. Stakeholders had similar views about the main functions and values of CPGs, namely promoting

distributive justice, redressing historical inequities in access to treatment and supporting delivery of standardised and cost-effective healthcare. There was a lack of clarity regarding the terminology around CPGs, with various terms used interchangeably such as guideline, policy, protocol, algorithm, strategy, standard operating procedures. Most often, we found overwhelming commitment by those involved to improving systems and processes for CPG development.

While there was recognition of a transition to more robust processes in some CPG development groups, there was also acceptance of the need to improve further to align with international standards. A number of gaps in current CPG development processes were identified namely:

- 1) lack of standardised processes for development, leading to *ad hoc* methods among some development groups;
- 2) fragmentation/silos of work within government programmes, and between the public and private sectors, resulting in inefficient resource use and possible duplication, gaps and/or conflicts in CPG recommendations;
- 3) inadequate stakeholder consultation, particularly with the end-users of CPGs and patients, giving rise to potential diminished 'buy-in' amongst some individuals and groups;
- 4) poor communication and lack of transparency in decision making, leading to reduced public trust of certain CPGs;
- 5) widespread prevalence of personal, fiscal and political vested interests and agendas, and poor processes for reporting and managing these conflicts within some CPG development groups; and,
- 6) a lack of dedicated time, funding, skills and training for the technical and methodological work of CPG development.

As CPG implementation is largely the responsibility of provincial government, only a few of the national stakeholders interviewed were closely involved with implementation and thus referred to provincial players for further exploration of this issue. However, it was suggested that CPG implementation is lagging and requires additional specific skills and adequate funding to ensure recommendations reach end-users and contribute to improved patient outcomes. The fragmentation

between national and provincial departments of health, and associated lack of agreed systems for implementation were also highlighted, with the view that this has resulted in CPGs that lack legislative power to enforce standardised implementation and impact service delivery.

## SUMMARY – NATIONAL STAKEHOLDERS

- The context and processes for CPG development represent a complex web of interactions between players and organisations, informed by values, politics and power, and varying levels of skills.
- Terminologies around guidelines lack clarity and consensus.
- Current challenges with CPG development include the lack of a standardised approach, fragmentation between development groups, inadequate stakeholder consultation, a lack of decision-making transparency, poor management of conflicting interests, and limited technical skills and dedicated resources.
- Key principles driving CPG development comprise justice, equitable access, and standardisation and cost-effectiveness.
- Many CPG contributors are committed to improving development processes.

## ALLIED HEALTH STAKEHOLDERS

The sub-study focused on primary healthcare (PHC) AH CPG activity in South Africa. The study found widespread goodwill and interest in improving quality of AH care, in the face of scant resources, huge community need, lack of standardised training, and a government focus on priorities other than quality of life and functionality. Pockets of innovative, responsive, far-sighted South African AH guidance activities were found. However, few groups are using CPGs in the international sense of the word – most are variable evidence-based documents written to guide local practice.

There is the will and energy to make things better, in terms of robust evidence collation, implementation, evaluation and quality improvement. By nature of their training, AH therapists have a clear focus on why evidence-based practices are required to improve the lives of thousands of people at PHC level, who are living with the ramifications of chronic disease.

The primary barriers to CPG development and uptake include poor resources (funding, staff shortages and turnover), poor representation at provincial and national health departments and a lack of training for CPG development and implementation. The key facilitators are interdisciplinary cohesion, common rehabilitation goal setting and strong existing AH networks.

## SUMMARY – ALLIED HEALTH STAKEHOLDERS

- Innovation is required to develop models of resource utilisation, prioritisation and co-ordinated effort for common goals.
- Barriers to CPG uptake include a supportive organisational infrastructure, supported interactions between AH actors, and being attentive to quality communication and evaluation of CPGs in clinical practice.
- Building capacity in AH at primary care level should target factors at systems level (focusing on collaborations between national and provincial health departments, policy makers, academia, implementers, managers, lead clinicians and the private sector), training the workforce in CPG development, use and monitoring, incentives at an individual level) and context-specific CPGs with a focus on implementation and monitoring.

## IMPLICATIONS FOR ALLIED HEALTH CLINICAL PRACTICE GUIDELINE DEVELOPERS

- The commitment of CPG developers to advance CPG processes, and the commonly shared values of promoting justice, equity and standardisation may serve as important enablers to further CPG procedural improvements.
- Nationally agreed standards and processes to guide CPG development and implementation are needed.
- A national CPG co-ordination unit that devises processes that support collaboration, transparency and credibility across sectors and disciplines could help address current challenges in CPG production and implementation.
- Resourcing of activities is key to building capacity to conduct CPG methodological work, support clinical recommendation decision making and improve communication, dissemination and implementation of CPGs.
- Concerted attempts to implement locally relevant CPGs for AH primary care in South Africa are required, to improve widespread commitment to evidence-based care, and to plan efficient and effective service-delivery models.

## SAGE PUBLICATIONS

- Dizon JMR, Grimmer K, Machingaidze S, McLaren P, Louw Q. Mapping South African Allied Health Primary Care Clinical Guideline Activity: establishing a stakeholder reference sample. *Health Research Policy and Systems* 2016; **14**(1): 77.
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## GOAL 2:

# PRIMARY CARE CLINICAL PRACTICE GUIDELINE IDENTIFICATION AND APPRAISAL

### OBJECTIVES

- Identify international standards of CPG development.
- Collate international and national definitions of PHC and PC to inform Project SAGE.
- Identify and appraise the quality of local CPGs for a representative sample of priority South African primary healthcare diseases.

### METHODS

- Two systematic literature reviews were undertaken regarding: a) CPG development standards; and b) international and national definitions of PHC and PC; a guideline appraisal of a sample of SA PC CPGs; and comparing AGREE II scores with a rapid CPG appraisal tool (iCAHE).

### MAIN FINDINGS

- CPG development standards are described in a comprehensive review of guidelines manuals reported by McMaster researchers.
- Definitions of primary healthcare and primary care were clarified for the SAGE team where our focus remained on primary care, in particular clinical contact. We used the definition from the NDoH.
- In the CPG appraisal research, we found variable methodological quality of 16 purposively-sampled PHC South African CPGs, returning low to moderate scores on the AGREE II instrument (a standard 23-item international CPG quality appraisal tool, which is endorsed by the *South African Medical Journal*). In particular, the domains describing the 'rigour of development' and 'editorial independence' were poorly reported in available guidelines.

- The methodological quality of the CPGs scored similarly poorly with a rapid 14-item binary scoring system designed for busy healthcare providers or CPG end-users (iCAHE tool).
- We produced unanticipated new knowledge and insights about the construction and terminology of CPGs, relevant to South African PHC (Figure 2). In particular, it provided a new way of thinking about CPG construction that will assist future developers to consider whether *de novo* development is required, or whether a process of adapting a guideline is needed, or rather simply adopting and contextualising the guideline for use in various contexts.





**Figure 2:** The conceptual framework to efficiently develop credible CPGs for use in resource-poor countries such as South Africa

## SUMMARY

- Our compilation of the literature on the current 'state of play' of international CPG activity highlighted the variability of CPG writing and terminology, but also fragmentation in how information was reported. Globally the emphasis is on CPG development with gaps in CPG research (such as in updating evidence, and implementing evidence from one source into another environment).
- This highlights potential confusion surrounding the variable terminology and construction methods in CPGs, variable ways in which the evidence is reported and recommendations framed, variable evidence bases underpinning CPG recommendations, and presentation of guidance in a fashion that may provide little information on how to implement recommendations to address local barriers.
- Using the AGREE II checklist, South African primary care CPGs were found to have variable and generally low-quality scores in the 16 CPGs included. Rigour of development and editorial independence are most poorly reported which may decrease the credibility of the CPGs for users.
- Novel approaches to considering evidence development and implementation have been proposed, including a three-tier view of CPGs (see Figure 2).

## SAGE PUBLICATIONS

- Kredo T, Bernhardsson S, Machingaidze S, Young T, Louw Q, Ochodo E, et al. Guide to Clinical Practice Guidelines: The Current State of Play. *Int J Qual Health Care* 2016; 122-128. DOI: <http://dx.doi.org/10.1093/intqhc/mzv115>.
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## GOAL 3:

# MAPPING REQUIREMENTS OF CLINICAL PRACTICE GUIDELINE STAKEHOLDERS TO IDENTIFY BARRIERS AND FACILITATORS TO IMPLEMENTATION AND USE IN THE SOUTH AFRICAN PRIMARY CARE CONTEXT

### OBJECTIVES

- Explore how CPGs are received by end-users.
- Identify users' preferences, barriers and facilitators regarding CPG use.
- Suggest common and innovative local strategies for addressing barriers.
- Evaluate current best evidence on implementation.

### METHODS

- We identified a Cochrane overview of systematic reviews addressing the topic of implementation strategies in LMICs. This could inform our understanding of what may work or not for implementing CPGs to enhance health system implementation (see Related publications Box). The overview used rigorous methods to search for, appraise and include reviews. They considered four categories of stakeholders: 1) healthcare organisations (e.g. strategies to change organisational culture; one review); 2) healthcare workers by type of intervention (e.g. printed educational materials; 14 reviews); 3) healthcare workers to address a specific problem (e.g. unnecessary antibiotic prescription; nine reviews); and, 4) healthcare recipients (e.g. medication adherence; 15 reviews).
- To explore the perspectives of South African primary care CPG users, we used a qualitative research design, including semi-structured interviews and focus group discussions. In total, 28 individual interviews were conducted with provincial and district health managers for programmes related to primary healthcare, training and clinical services. In addition, seven focus groups, with 48 participants, were held with primary care providers based at facilities in rural, urban and peri-urban settings. Healthcare providers included nurses, dieticians, dentists, doctors, and allied health practitioners. Participants came from four provinces: Limpopo, KwaZulu-Natal, Western Cape and Eastern Cape. Data were analysed through a thematic content approach and the Theoretical Domains Framework and Capability, Opportunity and Motivation (B-COM) model on causal pathways for behavior change.



## MAIN FINDINGS

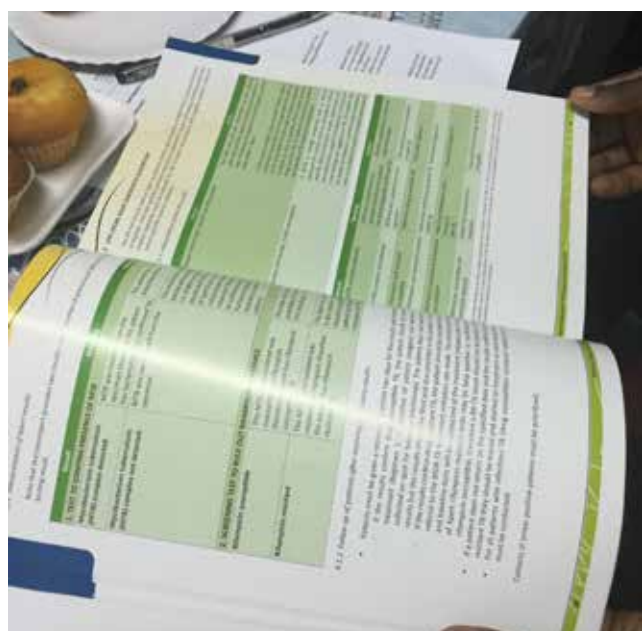
- The Cochrane overview of implementation strategies included 39 systematic reviews that included a total of 1332 studies. These reviews found that many different implementation strategies probably improve professional practice, including educational meetings, educational outreach, practice facilitation, local opinion leaders, audit and feedback, and tailored interventions. Many strategies targeted at healthcare recipients also probably have desirable effects on the use of healthcare. For example, mass media interventions lead to an increase in immediate uptake of HIV testing and reminders, and recall strategies for caregivers probably increase routine childhood vaccination uptake. Based on the review, decision makers may use a range of strategies to implement health interventions, and these choices should be based on evidence of the strategy's effectiveness.
- Preliminary analyses of the qualitative study reveal that primary care healthcare providers are knowledgeable about CPGs, generally trust their credibility and are highly receptive and motivated to use them. CPGs were seen by nurses to provide confidence and reassurance, as well as professional authority and independence where doctors are scarce. They also perceived CPGs as facilitating patient management and engagement, promoting standardised care, teamwork and shared decision making as well as providing protection against medico-legal litigations. Several barriers to current CPG implementation and usage were highlighted. These included inadequate systems for printed CPG distribution and version control, poor circulation of CPG-related notifications, insufficient and substandard copies of printed CPGs, linguistic inappropriateness (e.g. complicated language used, lack of summaries, not available in local languages), unsupportive monitoring/auditing procedures, limited involvement of end-users in CPG development, and patchy training that often does not filter back to all healthcare providers in the clinic. Future aspirations identified included improving the design features of CPGs (e.g. more graphics, colour); translating CPGs into local languages and developing summary versions; a consolidated and physically accessible place to access CPGs; making digitally-formatted CPGs and associated technologies (e.g. internet, computers, laptops) available; more CPG supplementary materials (e.g. posters) to support better patient engagement and empowerment; accessible clinical support and community involvement for accountability; and, in-facility training for all individuals and professional cadres to ensure fair access, similar levels of knowledge/skills and interdisciplinary consistencies.

## RELATED PUBLICATIONS

- Pantoja T, Opiyo N, Lewin S, Paulsen E, Ciapponi A, Wiysonge CS, et al. Implementation strategies for health systems in low-income countries: an overview of systematic reviews. *Cochrane Database Syst Rev* 2017; **9**: CD011086.

## SUMMARY

- Current enablers to CPG usage include high levels of knowledge about and motivation to use CPGs; trust in the credibility of CPGs; and, perceptions of multiple emotional, social and professional benefits of using CPGs.
- Current barriers to CPG usage include deficits in CPG access, quality, auditing and training, linguistic limitations and inadequate involvement of end-users in CPG development resulting in 'unpractical' recommendations.
- End users suggested that they would be more likely to use CPGs if: 1) they had electronic access to up-to-date CPGs and printed copies were better distributed and physically more accessible; 2) if CPGs were simpler, more attractive, available in local languages and supplemented with summarised versions and patient engagement tools, and; 3) if they received appropriate in-facility and off-site training.
- There are several implementation strategies that have been tested in LMIC settings and have evidence underpinning them. We can use a theory informed approach, such as the Theoretical Domains Framework, to identify interventions that address local barriers to CPG use.





# GOAL 4 AND 5:

## GUIDELINE RESOURCE, CAPACITY BUILDING, TRAINING AND DEVELOPMENT

### OBJECTIVES

- To identify relevant resources and existing guidance, and set up an online resource portal to assist South African CPG developers (*de novo* CPG development relevant to local issues, adaption or contextualisation of CPGs from high-income settings for South African conditions, updating existing South African CPGs).
- To conduct an evaluation of current evidence for learning around CPGs: identifying best-practice effective adult teaching/learning strategies with which to engage a broad end-user group in CPG issues.
- To describe currently available CPG courses.
- Develop, implement and evaluate a comprehensive multi-pronged multidisciplinary training programme, including but not limited to, developers, contextualisers, implementers and end-users.
- To supervise, mentor and support the training of masters and PhD students conducting research in the field of CPGs.

### METHODS

- A systematic review was conducted to identify current best evidence for effective engagement of adult learners in the area of CPG construction, application and evaluation.
- Existing CPG courses have been evaluated to frame the way the training module and its learning activities have been developed.
- The first two stages informed the adaptation, implementation and evaluation of an intensive CPG training module.
- Development of a CPG online toolkit (free, self-directed CPG educational tool).
- Provide tailored support, mentorship and supervision to masters and PhD students with CPG-related research projects.



Facilitator Prof. Holger Schünemann with Dr Salaelo Mametja, South African Medical Association and Dr Celeste Naude, Stellenbosch University



Prof. Fergus Macbeth teaching on economics evidence in guidelines



Students on the clinical practice guidelines module at Stellenbosch University

## MAIN OUTPUTS

### GOAL 4

- The SAGE Guideline Toolkit <https://guidelinetoolkit.org.za/> was developed, piloted and finalised. It is a free, comprehensive, online resource which draws on up-to-date tools and resources on CPGs. It describes the approach to follow to identify and assess existing CPGs, how to adopt, adapt or implement existing CPGs, and links to resources for CPG *de novo* development. The toolkit focuses on low- and middle-income settings where it is often not feasible to develop *de novo* CPGs which are advised where there are no current CPGs available to answer the required clinical care questions. However, where there are up-to-date, high-quality CPGs available from other countries or settings, researchers should consider adapting, adopting or contextualising these. The toolkit describes the considerations and procedures on deciding when to do what in a step-wise process.

### GOAL 5

- We found no eligible studies for our systematic review of teaching and learning strategies. For our document

review, we found a total of six CPG courses – four from universities and two from professional groups. CPG courses are delivered either as a full or short courses and commonly include topics on developing *de novo* CPGs. Most courses are delivered face-to-face and blended with other strategies such as online teaching and group discussions.

- Using an already available CPG module offered as part of the Masters in Clinical Epidemiology at Stellenbosch University [www.sun.ac.za/clinepi](http://www.sun.ac.za/clinepi), we transformed the content of this module to be contextually relevant. Informed by findings of other SAGE goals, we set up, implemented and evaluated an intensive course. The aim is to enable participants to understand the different CPG development approaches (adoption, contextualisation, adaptation and development) and implementation, monitoring and evaluation. The course uses interactive bi-directional learning and is available as an accredited master's level short course.
- As part of SAGE, we offered mentoring or supervision of SAGE linked postgraduate students. We supported one research intern, two masters, four PhD and one postdoctoral student.



## EDUCATIONAL OUTCOMES OF THE MASTER'S LEVEL CPG MODULE

By the end of this course successful participants will be able to:

- Describe the principles of guideline development approaches (adoption, contextualisation, adaptation and *de novo* development).
- Discuss the rationale and outline the steps of guideline development approaches.
- Critically appraise the reporting quality of guidelines.
- Outline principles of grading the quality of evidence to inform CPG development.
- Discuss the different evidence required in the process of moving from evidence to recommendations.
- Understand concepts in writing recommendations.
- Outline principles of implementation of clinical guidelines including consideration of stakeholders, and barriers and facilitators to successful guideline implementation.
- Develop a plan for implementation of a guideline using appropriate strategies.
- Outline methods of monitoring and evaluating a CPG.



*Congratulations Kganetso Sekome.*

## SUMMARY

- There is a substantial need for training of policy makers, guideline panels and technical support teams in all clinical disciplines on CPG development and successful implementation strategies.
- The SAGE CPG module training and online toolkit can support capacity development for South African CPG developers and implementers.



*Congratulations Dawn Ernstzen (right), accompanied by Quinette Louw.*

# SCOPING PROJECT: GLOBAL GUIDELINE CO- ORDINATION UNITS

## OBJECTIVES

- Identify global CPG co-ordination units.
- Collect and collate information on the nature of these units, including *inter alia* purpose, scope, activities and operating principles.
- Provide recommendations for the potential scope of a South African National CPG Co-ordination Unit.

## METHODS

- Google and Pubmed searches were conducted to identify and develop a list of relevant units, on a global scale, in the field of CPGs.
- The list of relevant units was evaluated and extended through consultations (via email) with the SAGE methods

advisory and advisory board groups and members of Guidelines International Network (G-I-N).

- Based on information available online (e.g. websites, reports, brochures) details for each unit were extracted, *inter alia* objectives, tasks/scope, legislative mandate, organisational structure, human and financial resources, output, functioning challenges/facilitators.
- Units were contacted (via email) to check the information extracted and to add missing information.

## MAIN FINDINGS

We included 21 units, nine of which were part of government, mainly Ministry of Health, (MoH) and 10 of which are units within a larger organisation. Staff numbers and extent of funding differ substantially among the units. Most (15) organisations are financed exclusively by the government (mostly the MoH).



Dr Tamara Kredon,  
Cochrane South Africa, SAGE Project



Dr Shaidah Asmall  
Technical Advisor to NDoH Primary healthcare directorate

**Table 1:** Clinical Guideline Units and country in which they are based

Agency for Healthcare Research and Quality (AHRQ) / National Guideline Clearinghouse (United States)	National Guideline and Pathway Committee (Qatar)	Australian CPGs / National Health and Medical Research Council (Australia)	Instituto de Evaluación Tecnológica en Salud (IETS) (Colombia)
CONITEC – National Committee for Health Technology Incorporation (Brazil)	National Institute for Health and Care Excellence (NICE) (UK)	Best Practice Advocacy Centre (New Zealand)	Medical Information Network Distribution Service (Minds) project, Japan Council for Quality Health Care (Japan)
Guideline Review Committee and GRC Secretariat (WHO) (Switzerland)	Saudi Center for Evidence Based Healthcare (EBHC) (Kingdom of Saudi Arabia)	Clinical Evidence Unit (Chile)	National Center for Health Technology Excellence (CENETEC) (Mexico)
Haute Autorité de Santé (HAS) (France)	Scottish Intercollegiate Guidelines Network (SIGN) (Scotland)	Clinical Excellence Unit (Iran)	New Zealand Guidelines Group (New Zealand)
National Clinical Effectiveness Committee (Ireland)	AUB Grade Center (Lebanon)	Duodecim Finnish Medical Society and Medical Publications Ltd (Finland)	

The purpose or main objectives of the units include: development of CPGs using accepted methodologies (e.g. systematic reviews, AGREE, GRADE, consensus) (seven units); provide access to CPGs (clearinghouse – database of CPGs on a website) (four units); approve/endorsement for implementation (three units); adopt, contextualise (by addressing implementation issues of existing recommendations), adapt CPGs (by changing the existing recommendations) (three units); methodological support (two units); Health Technology Assessment (HTA) (two units).

In addition, other tasks mentioned were: commission CPGs; critical appraisal; standards for CPG development; capacity building; implementation; monitoring and Evaluation (implementation, impact); coordination/governance; prioritisation; communication strategy; and invite multidisciplinary partners.

The number of CPGs available online ranges from 218 to 1726 for clearinghouses; and from four to 429 for unit websites. Most units consider the implementation the responsibility of the developers or organisations they develop the CPGs for, although some (six) do provide support for or facilitation of the process.

Units collaborate with a range of partners: medical professional organisations; guideline developer organisations – national; International organisations (e.g. WHO, Cochrane, G-I-N, HTA networks); academic institutions; GRADE working groups; government (mainly MoH); healthcare providers; and, insurers.

Key challenges in establishing and ongoing functioning of the units are funding, human resources, getting buy-in, and technical and methodological issues.

## SUMMARY

- South Africa can learn from the experiences of other national CPG units, especially regarding the objectives and tasks they perform, and the challenges they face in sustaining activities.
- South African policy makers and their partners could use the results of the report to consider the various tasks we identified and their relevance to a national unit.

# SAGE SUMMIT

One of the consistent messages found in our research was the need and willingness to streamline and improve communication and transparency between those contributing to guideline activity in South Africa. We therefore organised a SAGE Guideline Summit to provide a platform for sharing and learning across various groups and sectors, and to identify opportunities for closer networking.

- The main Summit (24 February 2016) comprised rapid-paced, multi-sectoral panels that discussed experiences and best practices in CPG development and implementation in our setting. It also involved group work and open discussions to allow those present to voice challenges and identify solutions to enhance current guideline activities in South Africa.

## OBJECTIVES

The overarching purpose of the Summit was to bring together a range of local and international stakeholders involved in CPG activities in SA, including development, implementation and use, and research, to highlight experiences and explore opportunities for future collaborative initiatives. Specific objectives were to:

- Provide a platform for dialogue between role players.
- Facilitate sharing of current CPG activities.
- Provide an opportunity for networking of role players.
- Explore perspectives on a national guidelines initiative.

## PROGRAMME

- The Summit began with a pre-conference (23 February 2016) workshop on 'GRADE for Guideline Developers' to introduce the principles of CPG development, adoption and adaptation, and to develop skills for moving from evidence to recommendations within CPG work using the GRADE approach. The workshop was attended by 32 participants including delegates from government, academia, public and private healthcare

## SUMMARY OF DISCUSSIONS

- Various recommendations were made for addressing some of the key barriers to effective, credible, CPG development and implementation, including with regards to fragmentation, skills shortages, and a lack of transparency and standardised methods.
- Suggestions were provided for how CPG stakeholders can work more closely to improve related work for South Africa, including the need for a National Guideline Coordinating Unit, driven, funded and endorsed by the NDoH, but functioning independently. Several functions for such a Unit were identified.
- Proposals were made for taking the discussions further, including setting-up a small, multi-sectoral group to explore and communicate the role and processes for CPGs in South Africa.  
See <http://www.mrc.ac.za/sites/default/files/attachments/2016-07-07/SAGESummitReport.pdf>





Panelists at the SAGE Panel held in 2017 Henk Temmingh and Dawn Ernstzen, Michael McCaul, and Beverley Draper.

# SAGE PANEL DISCUSSION ON ADAPTING CPGs

Developing new CPGs from scratch is expensive and time-consuming and therefore often out of reach for teams with limited funding or resources. There is also little merit in developing new CPGs when there is a wealth of freely accessible, good-quality CPGs available to fit local needs. Various methods exist to adopt, adapt or contextualise CPGs from one setting to another with key examples from the South African setting. These alternative CPG development methods are a key vehicle not just for formal CPG teams but also for clinicians and decision makers to produce contextually relevant and robust guidance for their healthcare setting.

## OBJECTIVES

- To share different approaches for adapting CPGs for South African clinical care.
- To outline the challenges in using these methods and the lessons learnt.
- To discuss the approaches that South African teams use when developing guidelines.

## PROGRAMME

The SAGE project team invited four panelists all who have been involved in CPG development in South Africa to share

their experiences, methodologies used, as well as challenges and lessons learned in the process.

## PANELISTS:

- Dr Beverley Draper, a family medicine practitioner and public health consultant, who presented a health promotion tool which aims to address risks of health and chronic disease conditions at primary healthcare level as well as a training package for its implementation in practice.
- Mr Michael McCaul, Centre for Evidence-based Health Care, Department of Global Health, Stellenbosch University, who presented on the national emergency care clinical practice guidelines for South African paramedics.
- Dr Henk Temmingh, University of Cape Town and Valkenberg Hospital, Western Cape Department of Health, who presented on guidelines for the management of severe mental disorders with co-morbid substance misuse in South African psychiatric settings.
- Dr Dawn Ernstzen, Senior Lecturer, Physiotherapy Department, Stellenbosch University, who presented on a CPG for primary healthcare of chronic musculoskeletal pain in the Western Cape, South Africa.

## SUMMARY OF DISCUSSIONS AND LESSONS LEARNED

- South Africa needs fit-for-purpose guidelines.
- Guidelines development should be a rigorous, transparent and inclusive process.
- Existing appropriate, high-quality guidelines must be taken into account.
- The local context (including issues like organisational factors and human resources) must be considered.
- The panel should meet before the process begins to fully delineate the process and timelines need to be appropriate and reasonable.
- Panels should include methodologists and other relevant skills sets.
- There is a need for transparency/agreement on the values of the panel as this can influence the way evidence is viewed.
- An evidence-decision framework – like GRADE – should be used.
- The baseline, foundation and role players should be clearly defined at the start of the process.
- Guidelines should have an in-built auditing/monitoring tool to be able to assess their impact.
- Knowledge translation needs to be planned and budgeted for upfront to ensure access and equality.
- There is a need for a central respected guidelines authority. Its tasks should include deciding which guidelines should be prioritised (based on the national burden of disease), establishing rules and standards for the guideline-development process, and promoting the use/implementation (including training) of guidelines on the ground.
- The transition to the National Health Insurance system is forcing us to look at how we speak across sectors.
- These issues are not clear at a global level and South Africa should share its learnings in this field with others.



*Participants at the SAGE Panel Discussion*



# PROJECT OUTPUTS

## PUBLICATIONS

### SOUTH AFRICAN MEDICAL JOURNAL EDITORIAL SERIES

- Machingaidze, S, Kredo T, Louw Q, Young T, Grimmer K. South African Guidelines Excellence (SAGE): Clinical practice guidelines - quality and credibility. *S Afr Med J* 2015; **105**(9):743-5. Available at: <http://www.samj.org.za/index.php/samj/article/view/9763/6741>
- Kredo T, Machingaidze S, Louw Q, Young T, Grimmer K. South African Guideline Excellence (SAGE): What's in a name? *S Afr Med J* 2016; **106**(1):18-20. Available at <http://www.samj.org.za/index.php/samj/article/view/10286>
- Grimmer K, Dizon JM, Louw Q, Kredo T, Young T, Machingaidze S. South African Guidelines Excellence (SAGE): Efficient, effective and unbiased clinical practice guideline teams. *S Afr Med J* 2016; **106**(5):440-441. Available at <http://www.samj.org.za/index.php/samj/article/view/10770>.
- Dizon JM, Grimmer K, Louw Q, Kredo T, Young T, Machingaidze S. South African Guidelines Excellence (SAGE): To adopt, to adapt, or to contextualise? *South African Medical Journal* 2016;**106**(12):1177-8. DOI:10.7196/SAMJ.2016.v106i12.11374. <http://www.samj.org.za/index.php/samj/article/view/11601>
- Louw Q, Dizon JM, Grimmer K, McCaul M, Kredo T, Young T. Building capacity for development and implementation of clinical practice guidelines. *S Afr Med J*. 2017;**107**(9):745-6.<http://www.samj.org.za/index.php/samj/article/view/12056/8224>

### JOURNAL ARTICLES

- Kredo T, Bernhardsson S, Machingaidze S, Young T, Louw Q, Ochodo E, et al. Guide to Clinical Practice Guidelines: The Current State of Play. *Int J Qual Health Care* 2016: 122-128. DOI: <http://dx.doi.org/10.1093/intqhc/mzv115>.
- Machingaidze S, Zani B, Abrams A, Durao S, Louw Q, Kredo T, et al. Quality and Reporting Standards of South African Primary Care Clinical Practice Guidelines. *Journal Clinical Epidemiology* 2016. DOI: 10.1016/j.jclinepi.2016.09.015
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*BMC Res Notes* 2016; **9**:244. DOI: 10.1186/s13104-016-2053-z.

- Dizon JM, Grimmer K, Machingaidze S, McLaren P, Louw Q. Mapping South African allied health primary care clinical guideline activity: establishing a stakeholder reference sample. *Health Res Policy Syst* 2016; **14**(1):77.
- Kredo T, Abrams A, Young T, Louw Q, Volmink J, Daniels K. Primary care clinical practice guidelines in South Africa: qualitative study exploring perspectives of national stakeholders. *BMC Health Serv Res* 2017; **17**(1):608.
- Dizon JM, Grimmer K, Louw Q, Machingaidze S, Parker H, Pillen H. Barriers and enablers for the development and implementation of allied health clinical practice guidelines in South African primary healthcare settings: a qualitative study. *Health Res Policy Systems* 2017; **15**(1):79
- Dizon J, Grimmer KA, Machingaidze S, Louw Q, Parker H. South African Primary Health Care Allied Health Clinical Practice Guidelines: The big picture. *BMC Health Serv Res* 2018; **18**:48, DOI:10.1186/s12913-018-2837-z.
- Machingaidze S, Grimmer K, Louw Q, Kredo T, Young T, Volmink J. Next generation clinical guidance for primary care in South Africa – credible, consistent and pragmatic. *PLOS One* 2018; **13**(3): e0195025.

## CONFERENCE PRESENTATIONS

### NATIONAL

- Machingaidze S, Durao S, Young T, Volmink J, Kredo T. Evidence for Impact – Working together to support knowledge translation in the African region. Western Cape Provincial Research Day 2014. Mitchells Plain, Cape Town. 24 October 2014 (Oral).
- Kredo T, Abrams A, Grimmer K. The South African Guideline Excellence (SAGE) Project – An innovative partnership for improving the development and use of primary care clinical practice guidelines. Sustainable Rural Health Research Day. Worcester. 18 - 19 March 2015 (oral)
- Machingaidze S, Young T, Daniels K, Grimmer K, Louw Q, Volmink J, Kredo T. The South African Guideline Excellence (SAGE) Project – an innovative partnership for improving the development of use of primary care clinical practice guidelines. Africa Evidence Network Conference, November 2015 (Poster).
- Kredo T, Abrams A, Machingaidze S, Young T, Louw Q, Daniels K. Exploring current players, practices, processes and contexts of clinical guideline

development for South African primary care Health Systems Trust Conference 2016, Gauteng. 4-6 May 2016 (Poster)

- Louw Q, Parker H, Dizon J, Machingaidze A and Grimmer K. Barriers and enablers for the uptake of allied health clinical practice guidelines in South Africa in South African Primary Health Care Settings. FMHS (SU) Annual academic year day, 11 August 2016 (Poster).

## INTERNATIONAL

- Abrams A, Machingaidze S, Daniels K, Grimmer K, Young T, Louw Q, Kredo T. South African Guideline Excellence (SAGE) Project: an innovative partnership for clinical guideline excellence – exploring current players, processes, practices of primary care guideline development in South Africa. Guidelines International Network conference, Amsterdam, October 2015. (Poster).
- Abrams A, Kredo T, Machingaidze S, Young T, Louw Q, Daniels K. Reported use and perceptions of value of Cochrane evidence by South African guideline developers. Annual Cochrane Colloquium. Vienna, October 2015 (Oral).
- Machingaidze S, Zani B, Abrams A, Durao S, Louw Q, Kredo T, Grimmer K, Young T. Quality and reporting standards of South African primary care clinical practice guidelines. Guidelines International Network conference, Amsterdam, October 2015 (Poster).
- Grimmer K, Machingaidze S, Louw Q, Kredo T, Young T. Clinical guidance terminology in South Africa: producing believable, appropriate and implementable evidence statements. Guidelines International Network conference, Amsterdam, October 2015 (Poster).
- Grimmer K, Machingaidze S, Kredo T, Louw Q, Young T. Clinical practice guideline quality: an effective appraisal instrument for busy people. Guidelines International Network conference, Amsterdam, October 2015 (Poster).
- Dizon J, Machingaidze S, Kredo T, Grimmer K, Louw Q, Young T. A review of teaching and learning strategies and existing CPG courses for effective training in clinical practice guideline development approaches Guidelines International Network Conference, 27 – 30 September 2016, Philadelphia, USA (Oral).
- Grimmer K, Dizon J, Louw Q, Bernhardtsson S. Clinical practice guidelines in physical therapy: current state of play (symposium). World Confederation of Physiotherapy; 2 - 4 July 2017, Cape Town, South Africa.
- Kredo T, Cooper S, Muller J, Mokganyetji T, Daniels K, Munro S. Exploring barriers and facilitators to South African primary care clinical guideline implementation: perspective of clinicians (short oral). Global Evidence Summit, 13 – 16 September 2017, Cape Town, South Africa.

- Kredo T, Cooper S, Muller J, Mokganyetji T, Abrams A, Daniels K, Volmink J, Atkins S. Using the Theoretical Domains Framework to explore barriers to and facilitators of South African primary care clinical guideline implementation: perspectives of primary care clinicians (late breaker poster). Behaviour Change for Health: Digital and beyond, 21 - 22 February 2018, University College London, United Kingdom.

## SAGE REPORTS

- GRADE Training Workshop Report (<http://www.mrc.ac.za/sites/default/files/attachments/2016-07-07/GRADEWorkshopReport.pdf>)
- SAGE Summit Report (<http://www.mrc.ac.za/sites/default/files/attachments/2016-07-07/SAGESummitReport.pdf>)
- Finding a working definition of primary care and primary healthcare relevant to Project SAGE: a scoping review: Technical report
- Clinical guideline scoping project report <http://www.mrc.ac.za/sites/default/files/attachments/2018-04-03/SAGEreportScopingGuidelines.pdf>

## SAGE NEWSLETTERS

- December 2017 (<http://www.mrc.ac.za/sites/default/files/attachments/2018-04-03/SAGEdecember2017.pdf>)
- June 2017 (<http://www.mrc.ac.za/sites/default/files/attachments/2017-07-04/June2017.pdf>)
- September 2016 (<http://www.mrc.ac.za/sites/default/files/attachments/2016-10-04/SAGENewsletterSeptember2016.pdf>)
- May 2016 (<http://www.mrc.ac.za/sites/default/files/attachments/2016-07-07/SageMay2016.pdf>)
- July 2015 (<http://www.mrc.ac.za/sites/default/files/attachments/2016-07-07/July2015.pdf>)

## USEFUL RESOURCES

- SAGE website (<http://www.mrc.ac.za/intramural-research-units/Cochrane-SAGE>)
- SAGE Guideline Toolkit (<https://guidelinetoolkit.org.za/>)
- SAGE Guidelines Resource Page (<http://www.mrc.ac.za/sites/default/files/attachments/2016-07-07/SAGEResources.pdf>)
- Sage brochure (<http://www.mrc.ac.za/flipbooks/sage/mobile/index.html>)
- SAGE panel discussion videos (<https://youtube/n4ReDJe3Up8>)

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## ETHICS

Studies within Goals 1, 3 and 5 have protocols that were approved by the Research Ethics Committees of the South African Medical Research Council (EC002-212014) and Stellenbosch University (N14/02/008). All participants gave written and verbal informed consent to participate. Goal 3 received provincial approval to visit facilities in four provinces through the National Health Research Database system.

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# PROJECT SAGE

SOUTH AFRICAN GUIDELINES EXCELLENCE

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An innovative partnership for clinical guideline excellence

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SOUTH AFRICAN GUIDELINES  
EXCELLENCE PROJECT (SAGE)

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FINAL REPORT

Contact: Dr Tamara Kredo at  
[SAGE@mrc.ac.za](mailto:SAGE@mrc.ac.za) or  
[tamara.kredo@mrc.ac.za](mailto:tamara.kredo@mrc.ac.za),  
or at +27 (0) 21 938 0508

[www.mrc.ac.za/cochrane/sage](http://www.mrc.ac.za/cochrane/sage)



University of  
South Australia