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## APPENDIX A

### Definitions – primary care and primary health care (methods section)

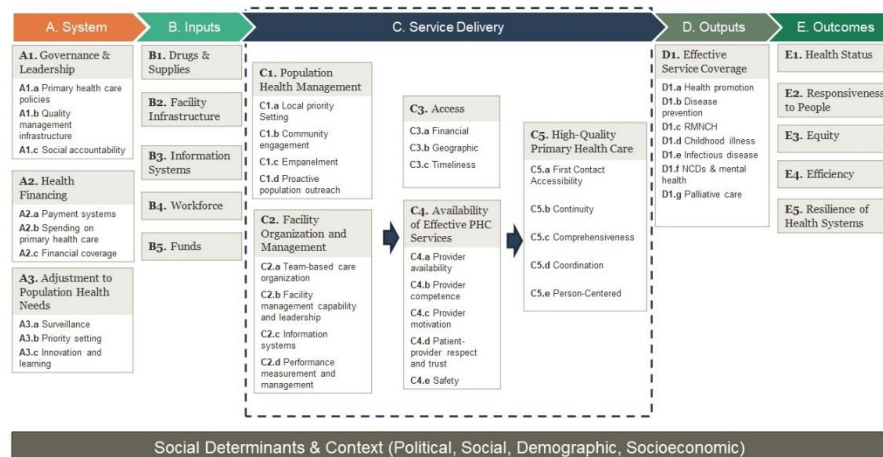
The terms ‘primary care’ and ‘primary health care’ and their definitions are frequently used interchangeably in the literature.(17)(18) For the purposes of the review we distinguished between PC and PHC, where PHC is defined as promotive, preventive, curative, rehabilitative services and palliative care at the first level of the health system.(10) In addition to being a level of care, PHC is both a system and a strategy that directly involves the agency of individuals and communities in their health care as well as an overarching approach to care at all levels of the health system. PC on the other hand is defined as the point of first contact with the health system when seeking health care.(10)(12) PC is a core dimension of PHC but a distinct clinical discipline(20) practiced largely although not exclusively in a PHC facility. Comprehensive PC comprises a wide range of activities (including promotive, preventive, curative, rehabilitative and palliative care activities) delivered as a unique integration of knowledges and skills drawn from clinical, public health and behavioural sciences.(12)(6)

### References

- (6) World Health Organization. Patient safety: making health care safer. Geneva: World Health Organization. 2017.
- (10) World Health Organisation. Declaration of Astana. Global Conference on Primary Health Care, Astana, Kazakhstan: WHO 2018.
- (12) Mash B, Downing R, Moosa S, De Maeseneer J. Exploring the key principles of Family Medicine in Sub-Saharan Africa. *SA Fam Practice* 2008;50(3).
- (17) Muldoon LK, Hogg WE, Levitt M. Primary care (PC) and primary health care (PHC). What is the difference? *Can J Public Health* 2006 Sep-Oct;97(5):409-411.
- (18) Amisi J, Downing R. Primary care research: does it defy definition? *Prim Health Care Res Dev* 2017 Nov;18(6):523-526.
- (20) Muldoon LK, Hogg WE, Levitt M. Primary care (PC) and primary health care (PHC). What is the 442 difference? *Can J Public Health* 2006 Sep-Oct;97(5):409-411.

## APPENDIX B

### Primary Health Care Performance Initiative (PHCPI) conceptual framework



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## **APPENDIX C**

### **PubMed search**

(01/01/2003 – 30/06/2019; English; Title/Abstract; full text only)

((((((((((((Primary Health Care[MeSH Terms]) OR Physicians, Primary Care[MeSH Terms]) OR Rural Health Services[MeSH Terms]) OR ((Primary care[Text Word] OR primary healthcare[Text Word]))) AND (((("Quality of Health Care/instrumentation"[Mesh] OR "Quality of Health Care/methods"[Mesh] OR "Quality of Health Care/organization and administration"[Mesh] OR "Quality of Health Care/standards"[Mesh] OR "Quality of Health Care/statistics and numerical data"[Mesh] ))) OR (( "Patient Satisfaction/organization and administration"[Mesh] OR "Patient Satisfaction/statistics and numerical data"[Mesh] ))) OR (((("Surveys and Questionnaires/instrumentation"[Mesh] OR "Surveys and Questionnaires/methods"[Mesh] OR "Surveys and Questionnaires/organization and administration"[Mesh] OR "Surveys and Questionnaires/statistics and numerical data"[Mesh] ))) OR ((analysis[Text Word] OR appraisal[Text Word] OR assess[Text Word] OR assessment[Text Word] OR audit[Text Word] OR evaluation[Text Word] OR indicator[Text Word] OR indicators[Text Word] OR instrument[Text Word] OR instruments[Text Word] OR measure[Text Word] OR measures[Text Word] OR measurement[Text Word] OR measurements[Text Word] OR questionnaire[Text Word] OR questionnaires[Text Word] OR scale[Text Word] OR statistics[Text Word] OR survey[Text Word] OR surveys[Text Word] OR tool[Text Word] OR tools[Text Word]))) AND ((effectiveness[Text Word] OR efficiency[Text Word] OR impact[Text Word] OR patient experience[Text Word] OR patient satisfaction[Text Word] OR performance[Text Word] OR quality[Text Word] OR service[Text Word] OR standards[Text Word]))) AND (Africa[Text Word] OR African[Text Word] OR Algeria[Text Word] OR Angola[Text Word] OR Benin[Text Word] OR Botswana[Text Word] OR Burkina Faso[Text Word] OR Burundi[Text Word] OR Cameroon[Text Word] OR Canary Islands[Text Word] OR Cape Verde[Text Word] OR Central African Republic[Text Word] OR Chad[Text Word] OR Comoros[Text Word] OR Congo[Text Word] OR Democratic Republic of Congo[Text Word] OR Djibouti[Text Word] OR Egypt[Text Word] OR Eritrea[Text Word] OR Ethiopia[Text Word] OR Gabon[Text Word] OR Gambia[Text Word] OR Ghana[Text Word] OR Guinea[Text Word] OR Ivory Coast[Text Word] OR Cote d'Ivoire[Text Word] OR Jamahiriya[Text Word] OR Kenya[Text Word] OR Lesotho[Text Word] OR Liberia[Text Word] OR Libya[Text Word] OR Madagascar[Text Word] OR Malawi[Text Word] OR Mali[Text Word] OR Mauritania[Text Word] OR Mauritius[Text Word] OR Mayotte[Text Word] OR Morocco[Text Word] OR Mozambique[Text Word] OR Namibia[Text Word] OR Niger[Text Word] OR Nigeria[Text Word] OR Principe[Text Word] OR Reunion[Text Word] OR Rwanda[Text Word] OR Sao Tome[Text Word] OR Senegal[Text Word] OR Seychelles[Text Word] OR Sierra Leone[Text Word] OR Somalia[Text Word] OR St Helena[Text Word] OR Sudan[Text Word] OR Swaziland[Text Word] OR Tanzania[Text Word] OR Togo[Text Word] OR Tunisia[Text Word] OR Uganda[Text Word] OR Western Sahara[Text Word] OR Zaire[Text Word] OR Zambia[Text Word] OR Zimbabwe[Text Word])) AND ( "2003/01/01"[PDat] : "2018/12/31"[PDat] ))) NOT african americans[MeSH Terms]))

**Results: 2810**

**Africa-Wide and CINAHL** (nursing and allied health) via EBSCOhost

(Interface – EBSCOhost; Research Databases Search Screen – Advanced Search)

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AB ( Primary care OR primary healthcare ) AND AB ( analysis OR appraisal OR assess OR assessment OR audit OR evaluation OR indicator OR indicators OR instrument OR instruments OR measure OR measures OR measurement OR measurements OR questionnaire OR questionnaires OR scale OR statistics OR survey OR surveys OR tool OR tools ) AND AB ( effectiveness OR efficiency OR impact OR patient experience OR patient satisfaction OR performance OR quality OR service OR standards ) AND AB ( Africa OR African OR Algeria OR Angola OR Benin OR Botswana OR "Burkina Faso" OR Burundi OR Cameroon OR "Canary Islands" OR "Cape Verde" OR "Central African Republic" OR Chad OR Comoros OR Congo OR "Democratic Republic of Congo" OR Djibouti OR Egypt OR Eritrea OR Ethiopia OR Gabon OR Gambia OR Ghana OR Guinea OR "Ivory Coast" OR "Cote d'Ivoire" OR Jamahiriya OR Kenya OR Lesotho OR Liberia OR Libya OR Madagascar OR Malawi OR Mali OR Mauritania OR Mauritius OR Mayotte OR Morocco OR Mozambique OR Namibia OR Niger OR Nigeria OR Principe OR Reunion OR Rwanda OR "Sao Tome" OR Senegal OR Seychelles OR "Sierra Leone" OR Somalia OR "St Helena" OR Sudan OR Swaziland OR Tanzania OR Togo OR Tunisia OR Uganda OR "Western Sahara" OR Zaire OR Zambia OR Zimbabwe)

**Limiters** – Abstract Available; Published Date: 20030101-20190631; English Language; Exclude MEDLINE records; Publication Type: Abstract; Geographic Subset: Africa; Language: English; Search modes - Boolean/Phrase

**Results:** Africa-Wide 6; CINHAHL 3

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**SCOPUS** (search strategy entered 05072019;(Scopus search results\_ 05072019.pdf)

{Primary care} OR {primary healthcare} AND analysis OR appraisal OR assess OR assessment OR audit OR evaluation OR indicator OR indicators OR instrument OR instruments OR measure OR measures OR measurement OR measurements OR questionnaire OR questionnaires OR scale OR statistics OR survey OR surveys OR tool OR tools AND effectiveness OR efficiency OR impact OR "patient experience" OR "patient satisfaction" OR performance OR quality OR service OR standards AND ( africa OR african OR algeria OR angola OR benin OR botswana OR burkina AND faso OR burundi OR cameroon OR canary AND islands OR cape AND verde OR central AND african AND republic OR chad OR comoros OR congo OR democratic AND republic AND of AND congo OR djibouti OR egypt OR eritrea OR ethiopia OR gabon OR gambia OR ghana OR guinea OR ivory AND coast OR {Cote d'Ivoire} OR jamahiriya OR kenya OR lesotho OR liberia OR libya OR madagascar OR malawi OR mali OR mauritania OR mauritius OR mayotte OR morocco OR mozambique OR namibia OR niger OR nigeria OR principe OR reunion OR russia OR {Sao Tome} OR senegal OR seychelles OR {Sierra Leone} OR somalia OR st AND helena OR sudan OR swaziland OR tanzania OR togo OR tunisia OR uganda OR {Western Sahara} OR zaire OR zambia OR zimbabwe ) AND ( LIMIT-TO ( PUBYEAR , 2019 ) OR LIMIT-TO ( PUBYEAR , 2018 ) OR LIMIT-TO ( PUBYEAR , 2017 ) OR LIMIT-TO ( PUBYEAR , 2016 ) OR LIMIT-TO ( PUBYEAR , 2015 ) OR LIMIT-TO ( PUBYEAR , 2014 ) OR LIMIT-TO ( PUBYEAR , 2013 ) OR LIMIT-TO ( PUBYEAR , 2012 ) OR LIMIT-TO ( PUBYEAR , 2011 ) OR LIMIT-TO ( PUBYEAR , 2010 ) OR LIMIT-TO ( PUBYEAR , 2009 ) OR LIMIT-TO ( PUBYEAR , 2008 ) OR LIMIT-TO ( PUBYEAR , 2007 ) OR LIMIT-TO ( PUBYEAR , 2005 ) ) AND ( LIMIT-TO ( SUBJAREA , "MEDI" ) ) AND ( LIMIT-TO ( LANGUAGE , "English" )

**Results:** 97

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### **Web of Science**

(All databases excluding MEDLINE; including SciELO; 2003-2019; English; Title/Abstract)

TS=(Primary care OR primary healthcare) NOT TS=(HIV OR AIDS OR tuberculosis OR TB OR maternal OR child OR reproductive OR antenatal OR diabetes OR hypertension OR asthma OR lung OR pulmonary OR skin OR dermatol\* OR eye) AND AD=(Africa OR African OR Algeria OR Angola OR Benin OR Botswana OR "Burkina Faso" OR Burundi OR Cameroon OR "Canary Islands" OR "Cape Verde" OR "Central African Republic" OR Chad OR Comoros OR Congo OR "Democratic Republic of Congo" OR Djibouti OR Egypt OR Eritrea OR Ethiopia OR Gabon OR Gambia OR Ghana OR Guinea OR "Ivory Coast" OR "Cote d'Ivoire" OR Jamahiriya OR Kenya OR Lesotho OR Liberia OR Libya OR Madagascar OR Malawi OR Mali OR Mauritania OR Mauritius OR Mayotte OR Morocco OR Mozambique OR Namibia OR Niger OR Nigeria OR Principe OR Reunion OR Rwanda OR "Sao Tome" OR Senegal OR Seychelles OR "Sierra Leone" OR Somalia OR "St Helena" OR Sudan OR Swaziland OR Tanzania OR Togo OR Tunisia OR Uganda OR "Western Sahara" OR Zaire OR Zambia OR Zimbabwe) NOT AD=("african americans") AND TS=(effectiveness OR efficiency OR impact OR patient experience OR patient satisfaction OR performance OR quality OR service OR standards) AND TS=(analysis OR appraisal OR assess OR assessment OR audit OR evaluation OR indicator OR indicators OR instrument OR instruments OR measure OR measures OR measurement OR measurements OR questionnaire OR questionnaires OR scale OR statistics OR survey OR surveys OR tool OR tools)

**Results:** 1799

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**Grey literature search sources** -\_search strategy adapt and simplified accordingly

- Sabinet (> Theses & dissertations > African digital repository > **African Journal Archive + Medicine & Health** - 01.012003 – 30.06.2019; English; full text; by relevance) search built using Africa-wide search above (163 results – see below)
- Google scholar; Google
- African health systems researcher
- Recent Africa-based primary care conference program and abstracts

### **APPENDIX D**

#### **Summary information on the instruments in Table 3**

Primary Care Assessment Tool was developed at the Johns Hopkins Primary Care Policy Center by Starfield and Shi to measure performance on essential elements of primary care.<sup>(1)(19)</sup> The original PCAT package contains user (adult and child), provider (practitioner) and manager versions of the assessment tool i.e. involves 3 key stakeholders in performance measurement. From the user perspective the PCAT goes beyond patient ratings of services; instead it analyses performance by measuring the user experience of availability and application of the essential PC elements to her/his care. The original PCAT<sup>(1)</sup> reflects these elements in 10 domains and subdomains (access – first contact and utilisation; continuity of care; coordination – care and information systems; comprehensiveness – available and provided; family-orientation; community-orientation; cultural competence). The adult user PCAT comprises a total of 95 items (questions) across the domains. Researchers in a number of countries have since adapted and validated the PCAT for use in their respective countries making the PCAT the most widely used primary care performance measuring instrument. The ZA PCAT and PCAT-

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Mw were adapted and cross-culturally validated for use in South Africa and Malawi respectively using the original USA PCAT.

Nigerian Patient Evaluation Scale (PES) was developed and validated for use in Nigeria using an iterative process, literature reviews, user and expert interviews, cognitive testing, and quantitative cross-sectional surveys).

South African Ideal Clinic Realisation and Maintenance (ICRM)<sup>(31)</sup> is a standardised checklist-based audit tool that focuses mainly on primary care facility compliance with operational and structural components of PHC rather than elements of primary care process.

SafeCare Essentials tool used to assess patient safety and risk reduction efforts in the selected facilities is provided by the SafeCare Initiative, a collaboration of the PharmAccess Foundation, the Council for Health Services Accreditation of Southern Africa (COHSASA), and the Joint Commission International (JCI). The tool is designed to identify the capability of a facility to move slowly or more rapidly towards higher levels of clinical quality and safer patient care according to staff efforts [SafeCare Initiative. PharmAccess Foundation. SafeCare Essentials: This rapid assessment tool identifies five primary risk areas related to quality and safety, Amsterdam. Netherlands, 2015)

European Task Force for Patient Evaluation of General Practice (EUROPEP) an instrument for patients to evaluate primary care. It enables patient evaluation of provider competence, patient-provider communication and practice organisation.

Client Satisfaction Survey Questionnaire measures patient satisfaction on '8 domains' of performance namely access; empathy; referral; general satisfaction; service standards; reliability; health promotion; tangibles; and assurance.

Tool to Improve Quality of Healthcare (e-TIQH) – taken verbatim from *Renggli S, Mayumana I, Mboya D, Charles C, Mshana C, Kessy F, et al. Towards improved health service quality in Tanzania: appropriateness of an electronic tool to assess quality of primary healthcare. BMC Health Services Research 2019 JAN 22 2019;19:55*: The list of e-TIQH assessment indicators used to measure primary healthcare was developed in an iterative process and in consultation with key stakeholders, including clinical experts and government representatives. The process strictly followed existing national treatment, supportive supervision, and other guidelines. During the same development process indicators were also grouped into six quality dimensions (QDs): (1) Physical environment and equipment; (2) Job expectations; (3) Professional knowledge, skills and ethics; (4) Management and administration; (5) Staff motivation; (6) Client satisfaction. QD 3 was further divided into four sub-dimensions, making the total number of sections nine. Additionally, indicator weights ranging from 1 (least important) to 5 (most important) were assigned according to their importance for quality of care relative to the other indicators. Points were given for each indicator met, and percentage scores of total possible points were calculated per QD. The score of each QD equally contributed to the overall health facility score. More details regarding score calculations can be found in Mboya et al.