checks in our new structure, we will meet the high challenges we are facing, and that professional societies can still play a role in producing trustworthy and useful clinical guidance documents.

4 TAKING ACCOUNT OF TUMOUR HETEROGENEITY IN SYSTEMATIC REVIEWS

Shona Lang, Stephanie Swift, Steve Duffy, Jos Kleijnen. *Kleijnen Systematic Reviews Ltd, York, UK*

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Objectives Precision medicine requires an in-depth understanding of cancer genomics and a rigorous approach to tumour tissue evaluation. Accounting for tumour heterogeneity, which is a feature of most cancers, is essential when assessing somatic mutations. Genomic instability produces multiple tumour clones within a given tumour tissue. Each clone has different characteristics (e.g. histology, growth, genetic mutations) and ultimately, can have different clinical outcomes. The challenge in oncology is to work out which clone is the greatest threat to life and target treatment appropriately. Current approaches to biomarker testing focus on interpatient heterogeneity but not intra-tumour heterogeneity.

We aim to evaluate how somatic mutation studies report and validate tumour tissue samples and whether they consider tumour heterogeneity. Secondly, we aim to search the literature to identify existing guidance on tumour heterogeneity.

Method We used a set of nine studies (12 datasets) taken from a recent systematic review on the prevalence of somatic gene mutations in cancer. We assessed whether the authors of the studies reported on:

1. Tissue sampling:
 - i. the clarity of reporting for sampling and pathology methods
 - ii. whether the pathology of the sample or the patient is presented.
2. Tumour heterogeneity or clonality:
 - i. the use of multiple samples from the same patient;
 - ii. the investigation of clonality or heterogeneity.
3. Tumour content (purity):
 - i. the use of microdissection;
 - ii. the reporting of the tumour content of the sample.

We searched MEDLINE, Pubmed and Embase and seven guideline- and systematic review-specific databases from inception to January 2019 to identify guidelines reporting on tumour heterogeneity.

Results Seven (58%) datasets did not report sufficient information with regards to tumour sampling and pathology to confirm that the tumour sample represented the patient's pathology. The use of this information in a systematic review would introduce uncertainty.

None of the datasets reported multiple prevalence results per sample. The use of this finding in a review would illustrate an evidence gap that tumour heterogeneity was not investigated only patient heterogeneity.

Ten datasets (83%) reported measuring the tumour content of the sample; seven (58%) reported that the tumour content could be as low as 10%. The use of this finding in a review would illustrate that the samples are at risk of contamination and the results cannot be considered reliable.

Results for searching of guidelines will be presented at the conference.

Conclusions Systematic reviewers need to be much more cautious about the use of patient derived tissue samples. It cannot be assumed that a tumour sample replicates the pathology of the patient, or that somatic tumour samples are homogeneous for a given biomarker or mutation. Systematic reviewers need to assess whether a) the study reports sufficient information to confirm that the sample reflects the pathology of interest b) the sample is free of normal, benign or other contaminant cells c) tumour heterogeneity has been considered. The assessment of tumour samples and tumour heterogeneity is important for systematic reviews of epidemiology, diagnostic and prognostic studies.

5 HOW DO WE KNOW THAT WE KNOW SOMETHING?

^{1,2}Carlos José Fajardo Flores, ³Jackeline Alger. ¹Universidad Nacional Autónoma de Honduras, Tegucigalpa, Honduras; ²Centro de Cáncer Emma Romero de Callejas, Tegucigalpa, Honduras; ³Universidad Nacional Autónoma de Honduras, Tegucigalpa, Honduras

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In high income countries, this question may be substituted by another one that it's easier to answer: How many randomized controlled trials have been done over this topic? In Honduras, Central America, this question is answered very differently. Medical practice in LMIC continues to be empirical and anecdotic and in the best-case scenario, decisions are taken based on research made abroad under distinct settings. Dealing with endless challenges, our health system fails to inform operational, implementation and health system research decisions. Barriers that limit quality research go from untrained health workers to lack of funding to come up with more complex research designs. Descriptive studies represent an overwhelming majority of published studies but due to their nature, their impact falls short to inform health decisions that benefit those that need it the most. So, are we posing quality research studies that answer our most important clinical questions? The EBM manifesto enlists the most important challenges that need to be addressed. Increase the systematic use of evidence is one of them. An estimated 97% of research in the world seeks to produce new knowledge, only the remaining 3% seeks to implement existing knowledge. Implementation Research (IR) is a discipline that aims to uptake interventions that have been proven effective under controlled settings and turn them into routine practices that benefit a wider population. Let's consider EBM as an effective intervention to enhance quality research practice, then why in LMIC an EBM culture has not been implemented? What factors have diminished its impact? IR might be an important tool to uptake the implementation of EBM in a poor developed research context. Pose research questions that arise in the communities, in real not controlled settings, that try to solve day-to-day problems can make the research process a less cumbersome enterprise. In other words, more practical questions that are closer to reality can boost a research practice that motivates a scientific community that watches research more as a luxury than as a necessity. A powerful way to motivate a scientific community to uptake

research is to prove with evidence that through evidence itself is the most effective, secure and ethical way of practicing medicine. Even though the outlook is not encouraging, showing the importance of EBM must be the first step to change the empirical paradigm, where a doubt is perceived as a weakness and not as an opportunity. Online mentorship might be a practical solution to close the gap between poor developed and well-developed EBM environments. A personal experienced mentor could encourage and guide a young researcher to improve research quality and integrity. Asking the right questions, declaring conflicts of interests, statistical significance and reporting bias should be part of a checklist that could be revised together online. At the Universidad Nacional Autónoma de Honduras (UNAH) this could be an effective strategy. This collaboration might expand the EBM frontiers to places that finally have recognized research as an urgent need.

6 FACTORS AFFECTING THE IMPLEMENTATION OF CARDIOVASCULAR RISK SCORING IN PRIMARY CARE; A MIXED-METHOD SYSTEMATIC REVIEW

¹Tonny Brian Muthee, ²Derick Kimathi, ¹Georgia C Richards, ³Nia Roberts, ¹Veronika Williams, ¹David Nunan, ¹Carl Heneghan. ¹Nuffield Department of Primary Care Health Sciences, University of Oxford <https://www.phc.ox.ac.uk>, Oxford, UK; ²KEMRI – Wellcome Trust Research Programme (KWTRP), Kilifi, Kenya; ³Bodleian Libraries, University of Oxford, Oxford, UK

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Objectives This review seeks to synthesise current knowledge on factors that influence the implementation of cardiovascular risk scoring in various primary care settings as reported in primary studies.

Primary objective To explore the facilitators and barriers to the implementation of cardiovascular risk scoring in primary care.

Secondary objective To examine these factors within different contexts such as a country's Gross National Income classification and the users of the intervention.

Method We searched bibliographic databases and grey literature such as EMBASE, MEDLINE, The Cochrane Library, CINAHL, PsycINFO, Global Health and Web of Science for studies of any design relating to the topic. Titles, abstracts, and full texts were independently assessed for eligibility by two reviewers. This was followed by quality assessment and data extraction. The analysis was done through an integrated and best fit framework synthesis approach. Quantitative and qualitative forms of data were combined into a single mixed methods synthesis. The Consolidated Framework for Implementation Research was used as the guiding tool and template for this analysis. The aggregated data was coded using NVivo 12. Additional analysis was conducted to identify the facilitators and barriers common in high-income countries versus those in low and middle-income countries, those that are patient-related versus those that are healthcare provider-related and those that related to physicians versus those related to non-physicians.

Results Twenty-five studies of various designs were included in this review. Most of these studies were conducted in high-income countries. All studies included healthcare professionals as participants and reported on a total of 11 cardiovascular risk scores. The a priori framework (CFIR) used in this review was appropriate in that the extracted data fit the

framework's constructs. However, one new theme emerged from the data – *knowledge and belief about disease and risk*. This was classified under the characteristics of individuals' domain. The factors influencing the implementation of cardiovascular risk scoring were broadly conceptualised into factors relating to the cardiovascular risk tool, users, clinical setting and healthcare system. Despite the dearth in research in low and middle-income countries, there were many similarities in the findings across all Gross National Income indices and users.

Conclusions The findings from this review show that factors influencing the implementation of cardiovascular risk scoring can be broadly conceptualised into: the healthcare system and clinical settings, the users of cardiovascular risk scoring, and the tools used for cardiovascular risk scoring. Whilst these findings reinforce the understanding that implementation processes are multifaceted and that they involve many components which act synergistically, there is limited research in the context of low and middle-income countries. Notwithstanding the need to direct resources in bridging this gap, it is also crucial that these efforts are in concert with providing high quality evidence on the clinical effectiveness of using cardiovascular risk scoring to improve cardiovascular disease outcomes of mortality and morbidity. Research in the form of effectiveness-implementation hybrid designs which will combine the elements of clinical effectiveness and implementation research to enhance public health impact is crucial.

7 THE BARRIER OF USING DIGITAL HEALTH IN OLDER PEOPLE: A STUDY IN RURAL COMMUNITY, THAILAND

Korravarn Yodmai. Faculty of Public Health, Mahidol University, Bangkok, Thailand

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Objectives This qualitative study aims to explore the perception of family members on using telemedicine in a rural community, Khon Kean Province, Thailand.

Method Fifty-five pairs of older people and family caregivers enrolled. This study used the structural interview for collecting data. Data analysis used the contents analysis.

Results The finding indicated that the majority of older people and their family members prefers to visit their physician in a health facility due to believe and trust the health professional skill rather than health volunteers or family members. The barrier of using telemedicine in the rural community was literacy and believe of both older people and family caregivers. Most of the older people family used the internet and have smart devices. Few older people are able to use a smart device. Older people fear to use smart devices related to a complex application and their literacy. Moreover, health conditions such as visual impairment, hearing impairment, memory impairment distributed as a barrier to learning a new technology.

Conclusions The conclusion that this era has two barriers to applying digital health in the rural community includes literacy of older people and family caregivers and self-esteem on home-health care. Developing health care technology must simple, appropriated to low literacy user, specific older adult. Using digital technology in healthcare services may cause of social inequality for the poor property, policy marker should considerate.