Choosing Wisely—Barriers and Solutions to Implementation in Low and Middle-Income Countries

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Abstract: Globally, there is increasing emphasis on value-based cancer care. Rising healthcare costs and reduced health care spending and budgets, especially in low- and middle-income countries (LMICs), call for patients, providers, and healthcare systems to apply the Choose Wisely (CW) approach. This approach seeks to advance a dialogue on avoiding unnecessary medical tests, treatments, and procedures. Several factors have been described as barriers and facilitators to the implementation of the Choosing Wisely recommendations in high-income countries but none for LMICs. In this review, we attempt to classify potential barriers to the Choose Wisely implementation relative to the sources of behavior and potential intervention functions that can be implemented in order to reduce these barriers.

Keywords: Choosing Wisely; Africa; value-based cancer care; low and middle-income countries

1. Introduction

Globally, there is increasing emphasis on value-based cancer care [1]. Rising healthcare costs reduced healthcare spending and budgets. Recent evidence shows that overuse in cancer-care delivery has caused patients, providers, and healthcare systems to carefully examine their practices [2]. Value-based cancer care advocates for diagnostic and therapeutic interventions that are backed by evidence for safety and efficacy as well as cost-effectiveness and discourages the delivery of ineffective, unproven, harmful, or low-value practices, treatments, programs, and interventions [3]. Value-based care delivery is relevant for all health systems, but it is of paramount importance in low and middle-income countries (LMICs) given their limited health budgets, inadequate health infrastructure, and the double burden of disease, among others [4]. The rising burden of cancer in LMICs is stretching the already-fragile health care system. Individually, the costs of cancer treatment may lead to catastrophic or impoverished personal health care expenditures [5]. Hence, these low-value practices result in the diversion of resources and, thus, have a detrimental effect on overall outcomes in resource-limited settings.

Standard treatment guidelines, including resource-stratified guidelines for cancer, are available to inform cancer care in LMICs and are one of the method for disseminating the practice of value-based care [6–9]. However, these guidelines alone do not prevent low-value practices.
2. Choosing Wisely Initiative

One initiative that promotes value-based cancer care is Choosing Wisely (CW). This campaign seeks to advance a dialogue on avoiding unnecessary medical tests, treatments, and procedures [10]. CW Oncology originated in the United States (2010), and it was later adopted in Canada (2014) [10,11]. Globally, CW Oncology now has campaigns in India [4] and Africa [4,12]. Each campaign lists practices that physicians should question to avoid unnecessary care in the treatment of patients with cancer. Some listed practices are similar between countries while others are country- or region-specific given differences in many factors including infrastructures and health-care delivery systems.

While the CW campaign has gained significant momentum over the past years, research has shown that the publication of the list alone is insufficient for impacting clinical practice [13–15]. Several studies have shown that concordance to CW guidelines is suboptimal [16,17]. A major reason for the poor penetration of CW guidelines in clinical practice is a lack of awareness among practitioners. While there are no studies that evaluate the awareness about CW guidelines among clinicians, it is unlikely that it will be different from awareness about other practical guidelines, as a recent study exploring the awareness of contouring guidelines among radiation oncologists in US reported that only 42% were aware of the these guidelines [13]. Given this low level of awareness among frontline clinicians, it is not surprising that the CW guidelines have been sub-optimally implemented. Furthermore, despite the enthusiasm to spread CW campaigns globally and in different disciplines, there has been little research conducted for evaluating the best implementation strategy, especially in LMICs.

3. Frameworks for Implementing CW

Several factors have been described as barriers and facilitators to implementing clinical guidelines, and these can also be applied to the CW recommendations. Given contextual differences, barriers and facilitators with respect to adopting CW recommendations will be different in LMICs compared to high-income countries (HICs). For example, compared to HICs, patients and care providers in LMICs are less likely to be aware of CW initiatives, and most leave decision making about their care to physicians [18,19].

Several frameworks for implementing value-based cancer care and de-implementing low-value practices have been proposed [3,20]. Norton et al. proposed a framework that can be used to de-implement cancer clinical practice. This framework includes five factors: strength of evidence, magnitude of the problem, action, barriers and facilitators, and strategy [3]. Factors such as the strength of evidence, magnitude of the problem, and action can be considered as guiding principles when developing an initial list of CW recommendations. Within the barriers/facilitators and strategies factor, the authors propose that this needs to be considered from the patient, provider, healthcare delivery setting, and societal perspective. These factors can also be expanded; for example, provider factors can include knowledge and attitude, guideline factors such as format and content, and external factors such as a lack of resources, organizational constraints, heavy workload, society, and cultural norms among others [21,22].

The implementation of CW recommendations in LMICs requires an understanding of specific barriers and behaviour change interventions that can address these barriers. Michie’s capability, opportunity, and motivation behaviour (COM-B) system and the behaviour change wheel (BCW) are frameworks that are commonly used [23].

The COM-B model has been used as a framework for addressing barriers with respect to the implementation of various guidelines in other disciplines, especially in high-income countries [24–26]. In LMICs, De Boer et al. used the COM-B framework to identify barriers with respect to the implementation of Tanzania’s first National Treatment Guidelines. They also used the behaviour change wheel (BCW) framework to select interventions to address each barrier and behavior change techniques to enact each intervention function and a mode of delivery [22].
Using Norton’s analytical framework, the COM-B model, and the BCW, we attempt to classify potential barriers to CW implementation into the sources of behaviour and potential intervention functions that can be implemented (Table 1) [23].

Table 1. COM-B Model and Barriers to Implementation of the CW Recommendations.

| Barriers                                      | COM-B Category          | Intervention Functions | Behavior Change Techniques and Mode of Delivery                                      |
|----------------------------------------------|-------------------------|------------------------|-------------------------------------------------------------------------------------|
| **Patient-related**                          |                         |                        |                                                                                     |
| Lack of patient awareness of the CW recommendations | Physical Capability     | Education              | Translate CW recommendations in an easy to understand language and distribute in waiting areas |
| Lack of trust between patient and providers  | Psychological Capability| Education              | Carry out campaigns encouraging patients to talk with their provider                |
| Limited acceptability                        | Psychological Capability| Education              | Create culturally tailored learning modules for patients                            |
| Patients beliefs that more is better         | Psychological Capability| Education Persuasion  | Educate patients on the problem of overuse                                           |
| **Provider-related**                         |                         |                        |                                                                                     |
| CW recommendations/list not easily accessible| Physical Capability     | Enablement             | Distribute CW list hard copies to every unit and clinic room and soft copies to every provider |
| Providers not knowledgeable of CW list       | Psychological Capability| Education              | Teach CW content, including evidence basis for these recommendations to providers in dedicated education session and integrate into existing curriculum for residents and nurses. |
| Providers do not believe that they should be following CW recommendations | Psychological Capability| Education Persuasion Modeling | Publicity campaign to raise awareness of the CW initiative. Choose local 'Implementation Champions' who will persuade providers that they should adhere to CW recommendation, and model this behavior during morning conferences and in clinical practice. |
| Belief that expertise-based decisions are better than CW recommendations | Reflective Motivation   | Training Persuasion    | Train providers in the benefits of CW-based practice and persuade them that they should be used in favor of expert opinion. |
| Fear of Litigation                           | Psychology Capability   | Education              | Carry out workshops and show that the CW list is based on evidence; hence, providers should not fear litigation. |
| **Health System-related**                    |                         |                        |                                                                                     |
| Lack of leadership support                   | Physical Opportunity    | Environmental Restructuring | Engage hospital leadership and show them the benefit of value-based cancer care. |
| Revenue generation –Reluctance to implement CW recommendations as this may lead to reduced revenues | Physical Opportunity    | Environmental Restructuring | Engage hospital leadership and show detrimental effects of overuse for both patients and the hospitals. Provide examples of other health care systems that have prioritized value-based care without financial detriment. |
| Lack of accountability in patient management | Physical Opportunity    | Education Environmental Restructuring | Encourage hospitals to carry out audits and provide formal feedback. |
Table 1. Cont.

| Barriers       | COM-B Category            | Intervention Functions                  | Behavior Change Techniques and Mode of Delivery |
|----------------|---------------------------|-----------------------------------------|-----------------------------------------------|
| Society-related|                           |                                         |                                               |
| Cultural Norms | Psychological Capability  | Education Persuasion                   | Mass media campaigns                         |
| Regulations    | Social Opportunity        | Training Modeling                      | Health regulator product warnings             |
| Health Policy  | Physical Opportunity      | Education Environmental Restructuring   | Introduction of value-based reimbursement policies amongst insurance providers. |

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4. Discussion

Using socio-ecological frameworks, barriers to the implementation of CW recommendations can be categorized into patient-related, provider-related, health system-related, and society-related. Patient barriers include lack of awareness, limited acceptability, and a lack of trust between patients and physicians, among others. These can be linked to capability where the patient does not possess the knowledge or skills to understand why a particular practice is unnecessary.

Educational initiatives such as making the CW recommendations easy to understand from a patient perspective and raising awareness of the campaign amongst patients are potential methods for mitigating these barriers. Provider-related barriers include a lack of awareness, fear of litigation, and other competing clinical guidelines. Provider-specific training sessions, identifying champions of the CW recommendations, and making the CW list visible in clinics/hospital wards can be considered. Health system-related barriers include a lack of leadership support, accountability, and incentives to use unnecessary practices for revenue generation. Environmental restructuring and education initiatives targeted at individuals in upper management and leadership positions can be used to address these barriers. Specifically, it is essential to emphasize to hospital leadership that value-based cancer care benefits patients and healthcare systems, including financially. De-incentivizing low-value practices at the hospital level can also include reducing public funding and removal from insurance providers. Models that reflect the financial impact of low-value interventions should be encouraged. These can show the financial loss at the patient level with respect to individual’s earnings and at the society level, assuming that the lost funding would have been distributed to other areas. Finally, society-related barriers include cultural norms, regulations, and health policy. Strategies to mitigate barriers at the societal level are arguably the hardest to implement but may also have the most significant impact. These can include mass media campaigns, working with regulators to advertise warnings for low-value drugs or interventions, and working with insurance providers to prioritize reimbursement of value-based care.

5. Conclusions and Future Directions

The CW campaign can be one of the most impactful initiatives in oncology to improve health services across the countries. However, ground-level implementation requires concerted efforts at multiple levels, including patient, provider, health system, and societal levels. It is vital to address each of the stated barriers in a multi-step manner with a quantitative impact analysis, which will serve as positive feedback for all the stakeholders.

Author Contributions: Conceptualization, F.R. and S.K (Safiya Karim); methodology, F.R. and S.K. (Safiya Karim); writing—original draft preparation, F.R.; writing—review and editing, F.R., M.S., S.K. (Sidy Ka), N.H., C.M.B., S.K. (Safiya Karim). All authors have read and agreed to the published version of the manuscript.
Funding: This research received no external funding. The APC was funded by Queens University.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Johansen, N.J.; Saunders, C.M. Value-Based Care in the Worldwide Battle Against Cancer. Cureus 2017, 9, e1039. [CrossRef] [PubMed]
2. Wait, S.; Han, D.; Muthu, V.; Oliver, K.; Chrostowski, S.; Florindt, F.; de Lorenzo, F.; Gandouet, B.; Spurrer, G.; Ryll, B.; et al. Towards sustainable cancer care: Reducing inefficiencies, improving outcomes—a policy report from the All.Can initiative. J. Cancer Policy 2017, 13, 47–64. [CrossRef]
3. Norton, W.E.; Chambers, D.A.; Kramer, B.S. Conceptualizing De-Implementation in Cancer Care Delivery. J. Clin. Oncol. 2019, 37, 93–96. [CrossRef] [PubMed]
4. Rubagumya, F.; Mitera, G.; Ka, S.; Manirakiza, A.; Decuir, P.; Msadabwe, S.C.; Adani If, S.; Nwachukwu, E.; Oti, O.N.; Borges, H.; et al. Choosing Wisely Africa: Ten Low-Value or Harmful Practices That Should Be Avoided in Cancer Care. JCO Glob. Oncol. 2020, 6, 1192–1199. [CrossRef] [PubMed]
5. Leighl, N.B.; Nirmalakumar, S.; Ezeife, D.A.; Gyawali, B. An Arm and a Leg: The Rising Cost of Cancer Drugs and Impact on Access. Am. Soc. Clin. Oncol. Educ. Book 2021, 41, e1–e12. [CrossRef] [PubMed]
6. Ismaila, N.; Salako, O.; Mutiu, J.; Adebayo, O. Oncology Guidelines Usage in a Low- and Middle-Income Country. J. Clin. Oncol. 2018, 4, 1–6. [CrossRef]
7. Kerr, S.; Jazieh, A.-R.; Kerr, D. How Useful Are International Treatment Guidelines in Low- and Middle-Income Countries? J. Glob. Oncol. 2017, 3, 441–443. [CrossRef]
8. Chiorean, E.G.; Nandakumar, G.; Fadelu, T.; Temin, S.; Alarcon-Rozas, A.E.; Bejarano, S.; Croitoru, A.-E.; Grover, S.; Lohar, P.V.; Odhiambo, A.; et al. Treatment of Patients With Late-Stage Colorectal Cancer: ASCO Resource-Stratified Guideline. JCO Glob. Oncol. 2020, 414–438. [CrossRef]
9. Anderson, B.O. NCCN Harmonized Guidelines for Sub-Saharan Africa: A Collaborative Methodology for Translating Resource-Adapted Guidelines Into Actionable In-Country Cancer Control Plans. JCO Glob. Oncol. 2020, 1419–1421. [CrossRef]
10. Schnipper, L.E.; Smith, T.J.; Raghavan, D.; Blayney, D.W.; Ganz, P.A.; Mulvey, T.M.; Wollins, D.S. American Society of Clinical Oncology Identifies Five Key Opportunities to Improve Care and Reduce Costs: The Top Five List for Oncology. J. Clin. Oncol. 2012, 30, 1715–1724. [CrossRef]
11. Mitera, G.; Earle, C.; Latosinsky, S.; Booth, C.; Desbiens, C.; Delouya, G.; Laing, K.; Camuso, N.; Porter, G. Choosing Wisely Canada cancer list: Ten low-value or harmful practices that should be avoided in cancer care. J. Oncol. Pract. 2015, 11, e296–e303. [CrossRef] [PubMed]
12. Pramesh, C.S.; Chaturvedi, H.; Reddy, V.A.; Saikia, T.; Ghoshal, S.; Pandit, M.; Babu, K.G.; Ganpathy, K.V.; Savant, D.; Mitera, G.; et al. Choosing Wisely India: Ten low-value or harmful practices that should be avoided in cancer care. Lancet Oncol. 2019, 20, e218–e223. [CrossRef]
13. Sherer, M.V.; Bryant, A.K.; Wu, A.J.; Barry, P.N.; Lally, B.E.; Yashar, C.M.; Murphy, J.D.; Gillespie, E.F. Assessment of contouring resource use and awareness of contouring guidelines among radiation oncologists. J. Radiat. Oncol. 2018, 7, 103–109. [CrossRef] [PubMed]
14. Davis, D.A.; Taylor-Vaisey, A. A systematic review of theoretic concepts, practical experience and research evidence in the adoption of clinical practice guidelines. Can. Med. Assoc. J. 1997, 157, 408–416. [CrossRef]
15. Prior, M.; Guerin, M.; Grimmmer-Somers, K. The effectiveness of clinical guideline implementation strategies—a synthesis of systematic review findings: The effectiveness of clinical guideline implementation strategies. J. Evid. Clin. Pract. 2008, 14, 888–897. [CrossRef] [PubMed]
16. Rocque, G.B.; Williams, C.P.; Jackson, B.E.; Wallace, A.S.; Halilova, K.I.; Kenzik, K.M.; Partridge, E.E.; Pisu, M. Choosing Wisely: Opportunities for Improving Actionable In-Country Cancer Care Delivery? J. Oncol. Pract. 2017, 13, e11–e21. [CrossRef] [PubMed]
17. Grover, M.; Abraham, N.; Chang, Y.-H.; Tilburt, J. Physician Cost Consciousness and Use of Low-Value Clinical Services. J. Am. Board Fam. Med. 2016, 29, 785–792. [CrossRef]
18. Rubagumya, F.; Makori, K.; Borges, H.; Mwanzi, S.A.; Karim, S.; Msadabwe, S.C.; Dharsee, N.J.; Mutebi, M.C.; Hopman, W.M.; Vanderpuye, V.D.; et al. Choosing Wisely Africa: Insights from the front-lines of clinical care. J. Clin. Oncol. 2020, 30, e1038–e1039. [CrossRef] [PubMed]
19. Rodriguez-Osorio, C.A.; Dominguez-Cherit, G. Medical decision making: Paternalism versus patient-centered (autonomous) care. Curr. Opin. Crit. Care 2008, 14, 708–713. [CrossRef] [PubMed]
20. Walsh-Bailey, C.; Tsai, E.; Tabak, R.G.; Morshed, A.B.; Norton, W.E.; McKay, V.R.; Brownson, R.C.; Gifford, S. A scoping review of de-implementation frameworks and models. Implement. Sci. 2021, 16, 100. [CrossRef]
21. Nabyonga Orem, J.; Bataringaya Wavumunno, J.; Bakeera, S.K.; Criel, B. Do guidelines influence the implementation of health programs?—Uganda’s experience. Implement. Sci. 2012, 7, 98. [CrossRef] [PubMed]
22. DeBoer, R.J.; Ndumbalo, J.; Meena, S.; Ngoma, M.T.; Mvungi, N.; Siu, S.; Selekwa, M.; Nyagabona, S.K.; Luhar, R.; Buckle, G.; et al. Development of a theory-driven implementation strategy for cancer management guidelines in sub-Saharan Africa. Implement. Sci. Commun. 2020, 1, 24. [CrossRef] [PubMed]
23. Michie, S.; van Stralen, M.M.; West, R. The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implement. Sci.* 2011, 6, 42. [CrossRef] [PubMed]

24. Timlin, D.; McCormack, J.M.; Simpson, E.E. Using the COM-B model to identify barriers and facilitators towards adoption of a diet associated with cognitive function (MIND diet). *Public Health Nutr.* 2021, 24, 1657–1670. [CrossRef]

25. Chater, A.M.; Williams, J.; Courtenay, M. The prescribing needs of community practitioner nurse prescribers: A qualitative investigation using the theoretical domains framework and COM-B. *J. Adv. Nurs.* 2019, 75, 2952–2968. [CrossRef]

26. McDonagh, L.K.; Saunders, J.M.; Cassell, J.; Curtis, T.; Bastaki, H.; Hartney, T.; Rait, G. Application of the COM-B model to barriers and facilitators to chlamydia testing in general practice for young people and primary care practitioners: A systematic review. *Implement. Sci.* 2018, 13, 130. [CrossRef]