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Exploring gaps, opportunities, barriers and enablers in malnutrition policy through key informant interviews: a qualitative inquiry from the CANDReaM initiative

Katherine L Ford ,[1] Roseann Nasser,[2] Carlota Basualdo-Hammond,[3] Celia Laur,[4] Maira Quintanilha,[5] Heather Keller,[1] Leah Gramlich[6]

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For numbered affiliations see end of article.

Correspondence to
Dr Leah Gramlich, Department of Medicine, University of Alberta, Edmonton, Canada; lg3@ualberta.ca

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ABSTRACT

Objectives Disease-related malnutrition (DRM) presents in up to half of adults and one-third of children admitted to Canadian hospitals and significantly impacts health outcomes. Strategies to screen, diagnose and treat DRM exist but policy to facilitate implementation and sustainability are lacking. The purpose of this study was to explore gaps, opportunities, barriers and enablers for DRM policy in Canada.

Methods A qualitative study was conducted with multinational key informants in DRM and/or health policy. Purposive sampling identified participants for a semi-structured interview. The health policy triangle framework informs policy outcomes by considering actors, content, context and processes, and was used to guide this work. Inductive thematic analysis was completed, followed by deductive analysis based on the framework.

Results DRM policy actors were seen as champions in healthcare, senior leaders in healthcare administration and individuals with lived experience. Policy content focused on screening, diagnosis and treatment of DRM. Key areas related to policy context included system specifics related to setting, cost and capacity, and social determinants of health. DRM policy processes were viewed as cross-sectoral and multi-level governance, mandating and other reinforcement strategies, windows of opportunity, and evaluation and research.

Conclusions DRM care has advanced substantially, yet policy-level changes are sparse, and gaps exist. DRM policy is facilitated by similar content around the globe and needs to be tailored to address setting-specific needs. Actors, content, context and processes inform policy and can be a dominant lever to accelerate nutrition care best practices.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ The impact of policy on disease related malnutrition is relatively unexplored.

WHAT THIS STUDY ADDS

⇒ Policy considerations include consistent content related to processes in support of DRM in specific settings and is supported by champions in health care, senior leaders and individuals with lived experience.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Policy can be a lever to accelerate nutrition care best practices

INTRODUCTION

Disease-related malnutrition (DRM) occurs when a patient's energy and nutrient intake is inadequate for their physiological requirements and is often exacerbated by a systemic inflammatory response. It is associated with poor outcomes (eg, functional decline, complications, hospital readmissions and mortality) and incurs increased healthcare costs.[1–3] DRM presents in up to half of Canadian adults and one-third of children admitted to hospital for ≥2 days.[4] In the community, DRM affects 3%–8.5%[5] of the population and has a disproportionate effect on older adults and those in seniors' care.[6 7] Strategies to address DRM exist, yet policy approaches or frameworks to support implementation are lacking in Canadian health systems.

In the past two decades, several initiatives have progressed DRM identification and treatment. A worldwide initiative (nutritionDay) has advocated for a 1-day audit every year for the past 20 years to assess malnutrition in patients across settings.[8] In 2014, the Optimal Nutrition Care for All campaign (ONCA) was launched by the European Nutrition for Health Alliance to develop and implement patient-driven improved nutrition care practices in Europe.[9] In 2016, the Global Leadership Initiative on Malnutrition (GLIM) built a global consensus on criteria to diagnose DRM in adults in clinical settings.[10 11] Also in

2016, the United Nations General Assembly proclaimed the Decade of Action on Nutrition (2016–2025).[12] In Canada, the Health Standards Organization published the Malnutrition Prevention, Detection and Treatment CAN/HSO 5066:2021(E) standard to improve patient nutrition care.[13] To further advance evidence-based practices and advocate for DRM policies, the Canadian Nutrition Society and the Canadian Malnutrition Task Force registered a commitment to the United Nations Decade of Action on Nutrition[14] for policy approaches to address DRM called CANDReaM (Creating Alliances Nationally for policy to address Disease Related Malnutrition). These initiatives were led by DRM champions (dedicated individuals who drive implementation efforts[15]) and have created awareness of nutrition as an integral component of patient care, yet DRM remains under-recognised and under-treated.

There is a lack of health policy related to undernutrition and DRM in Canada and globally. Several definitions for health policy exist and include plans, decisions, law, regulation, procedures, organisational and behaviour change to promote improvements in health. The WHO defines health policy as decisions, plans and actions that are undertaken to achieve specific healthcare goals within a society.[16] The Centers for Disease Control and Prevention defines policy as law, regulation, procedure, administrative action, incentive, or voluntary practice of governments and other institutions, where health policy more specifically influences systems development, organisational change and individual behaviour to promote improvements in health.[17]

The health policy triangle (HPT) framework was designed for the examination of health policies and considers four areas related to policy development and implementation: actors, content, context and processes.[18 19] The HPT framework was developed to emphasise the importance of moving beyond the content of a policy, to consider the actors across levels who are needed to influence policy, the processes required for developing and implementing change, and the broader context of policy.[19] These four components of the HPT framework are inter-related, impact one another, and are more likely to inform policy outcomes and the effectiveness of health policy change.[19] Health policy is needed to facilitate prevention, detection and treatment of DRM in Canada and improve health outcomes for at-risk patients at health system levels. Thus, the purpose of this study was to conduct key informant (KI) interviews to explore gaps, opportunities, barriers and enablers to the development and implementation of DRM health policy in Canada.

METHODS

This qualitative study consisted of KI interviews with multi-national DRM and/or health policy experts. The study was part of the larger CANDReaM commitment that also includes a scoping review and environmental scan of existing DRM policies.[14] Reporting was guided by the Consolidated Criteria for Reporting Qualitative Research.[20]

Purposive sampling[21] was used to recruit KIs from different roles or disciplines (eg, academia, health systems, governments, not-for-profit organisations, industry and patient groups) and from different geographic locations across Canada and internationally. Members of the Canadian Malnutrition Task Force and coauthors suggested KIs to approach from different communities of practice, including international groups. Additional KIs were recruited using snowball sampling[21] whereby participants suggested other KIs to approach for the study.

Interviews were held over videoconference between March and June 2023. Two members of the research team (LG and KLF) with knowledge and experience in DRM were present. One researcher (LG) conducted the interview while the other (KLF) took notes. A semi-structured interview guide (online supplemental file 1) was created (by LG and KLF with input from all authors) around elements of the HPT framework to help identify actors, content, context and processes for DRM policy.[19] Questions sought to better understand KIs' professional role in DRM, experiences with DRM in clinical practice, health administration and policy making, DRM policy adoption and implementation, and key DRM policy measures.

Data analysis

Interviews were audio recorded and transcribed verbatim. Qualitative data were managed and analysed with the support of NVivo software (QSR International, V.12). Analysis happened concurrent to the interviews to enhance rigour and support ongoing refinement of the questions and themes through researcher responsiveness.[22] Thematic analysis was applied to the transcripts and an inductive, followed by deductive, approach was used.[22] Reflexive thematic analysis is a flexible, six-phase method for analysing qualitative data that begins with data familiarisation and ends with detailed reporting of patterns (ie, themes).[23 24] Two members of the research team (LG and KLF) led the analysis with support from an experienced qualitative researcher (MQ). The researchers acknowledge that their expertise (LG: MD with >30 years of nutrition support and leadership experience; KLF: PhD, registered dietitian (RD); MQ: PhD, RD) and prior knowledge of some interviewees (LG) was relevant for the interviews and analysis process. All coauthors have a vested interest in advancing DRM policy development and implementation and most coauthors (KLF, RN, CB-H, CL, HK, LG) serve on the Canadian Malnutrition Task Force Advisory Committee.

Themes were iteratively developed, reviewed, discussed (by LG, KLF and MQ) and verified by all members of the research team. Findings initially appeared vast, thus an inductive approach was used to analyse the first seven transcripts to ensure that the broad nature of the data was captured.[22] As potential themes were identified, it became clear that these inductive themes aligned well with the HPT framework.[18 19] Given that the HPT

framework had informed the study rationale and development of the interview guide, the researchers adopted the HPT framework to guide the remaining interviews and conducted deductive data analysis.[19 25] Using a deductive approach for the remaining interviews allowed the research team to proceed with data analysis and frame the findings purposefully using the HPT framework.[18 19] Thus, descriptive subthemes related to policy development and implementation were grouped by the categories of actors, content, context and process to align with this framework.[18 19]

RESULTS

22 interviews were conducted and included 25 KIs from seven countries across four regions (North America n=14; Middle East n=2; Europe n=7; Global n=1; did not disclose n=1). 19 discussions were conducted as one-on-one interviews and three were carried out as dyadic interviews because of the opportunity to interview two KIs from the same setting simultaneously. Four KIs were global or multi-country representatives, eleven provided a national voice, eight represented a Canadian province and two provided insights from the institutional level. KIs self-identified as academics or healthcare professionals (n=17), government representatives or policy makers (n=9), from a not-for-profit organisation (n=5) or other (n=1); seven KIs identified dual roles across sectors. Themes, subthemes and exemplar quotes are described in detail, summarised in table 1, and key findings based on the HPT framework are highlighted in figure 1.

Actors in DRM policy

The HPT framework views actors as organisations, groups or individuals who effect policy.[18] This theme captured influential actors in the realm of DRM policy. These actors were actively working in specific settings and countries, or were described as key contributors to DRM policy development and implementation processes. Three subthemes further categorised actors: champions in healthcare, senior leaders in healthcare administration and individuals with lived experience.

Champions in healthcare

Actors that were referred to as 'champions' for DRM included healthcare professionals (eg, doctors, dietitians, nurses), and researchers or academics involved in DRM. Embedded healthcare providers were seen as champions of practice change, regardless of their role within the healthcare team. KI-03 (academic and healthcare professional) explained: 'We [physicians] work together [with dietitians] and we prescribe oral nutritional supplements (ONS) and parental nutrition and ongoing therapy for at home. But normally it's the dietitian that knows most, and we [physicians] just prescribe it. Some physicians do not know a lot about malnutrition'. Actors' health backgrounds had evident connections to DRM, yet it was their role as DRM champions that made them essential for DRM policy development and implementation.

KIs commonly described champions in healthcare as individuals who were experts in DRM and trying to initiate DRM policy discussions and implementation efforts. Influential actors often had dual roles (eg, clinician and researcher) and championed practice change beyond what would typically be expected from either position. Roles and titles of champions in healthcare varied across countries and jurisdictions. In some instances, champions leveraged relationships with political actors to raise awareness and support DRM policy action. One KI explained: 'It takes one or two effective leaders that know how to reach politicians, how to convince them … But if you're not able to bring it to the leaders, to the politicians, it's not going to work' (KI-09, academic and healthcare professional)

One key strategy to advance DRM care, that was identified by KIs, was to engage champions (ie, actors) with the capacity to bring attention and action to DRM policy. In some organisations, this advocacy work was being done through position papers, conferences, meetings and other activities.

> You have to keep people engaged. It's really also a network activity. You need to keep investing in it [DRM policy and advocacy] and make it top priority because these are key opinion leaders with extremely busy schedules. So, you need to be on top of their schedule and you do that by innovating, by adding value through these concepts and inviting them to the conference. (KI-04, policy maker and not-for-profit organisation)

KIs recognised that champions in healthcare hold diverse positions (eg, embedded care provider, researcher, practice leader) and bring essential knowledge and experience that is needed to inform, develop and implement DRM policy.

Senior leaders in healthcare administration

Senior leaders in healthcare administration were identified as essential for organisational level policies targeting DRM. However, these leaders were different from DRM champions as they were often unaware of DRM and its relevance in healthcare (further described in the DRM policy content section). KIs with health policy experience suggested strategies for integrating senior healthcare administration leaders into DRM policy discussions: 'We're talking about huge savings if you can keep them [patients] living independently. I'd like to see it as part of the conversation in these provincial, federal […] health authorities because it benefits everybody, it absolutely is cost effective' (KI-20; academic). Despite their lack of knowledge of the disease, it was evident that senior leaders are needed to progress the development and implementation of DRM policy at the administrative level.

Table 1 Health policy triangle framework for disease-related malnutrition policies: themes and subthemes

DRM policy themes	Subthemes	Quotes
Actors	Champions in healthcare	'I think the people from the Institute of Health, they know him [Physician researcher/Professor] and that's why they contact him, so our connection is mainly because of him and because he did this really large study'. (Key informant 07, academic and healthcare professional) 'We are educating a new generation of dietitians. So, for them it's not a question of improving or learning new things. This is the method. This is a standard of care. […] We need a unique milieu that will include leading doctors and nurses that are more oriented to nutrition. And we also need the leading clinicians from hospital and community. […] We need representatives, from geriatrics, from psychiatrics'. (Key informant 21, academic and healthcare professional)
	Senior leaders in healthcare administration	'[Health Authority] has a policy development framework that talks about how to develop policy, but it doesn't necessarily talk about how to prioritize, or what kind of policy we need. The framework relies fairly heavily on a sponsorship model so sponsors within the organization, which are executive leaders, usually at the VP level, […] are the approval level for policy. To get something approved, you need to go there. Having that sponsorship support to say this is a priority and we're going to put some resources behind it is really how you get the [Health Authority] to do it'. (Key informant 16, policy maker)
	Individuals with lived experience	'I think that I have been to some extent, I would say even surprised that there's no nutrition patient. The only patients that really are aware and care very much about nutrition are the obvious patients that are linked to home nutrition, long term, parenteral enteral intestinal failure. These patients, of course, are very much aware and they are the best advocates for the issue. But it's very difficult to find patients outside of this very limited field that are aware or even willing to be aware'. (Key informant 09, academic and healthcare professional) 'There was quite a lot of focus on patient voice, so we actually were able to bring together patients and public involvement from people who've had lived experience. But the one thing we stumbled upon which seemed, I don't know if saying even more valuable is the right term, but something that seemed equally valuable but more informative in some ways, was actually to bring in the patient carer voice for those with chronic disease'. (Key informant 11, academic and healthcare professional)
Content	Screening DRM	'There is no screening tool that is a national standard'. (Key informant 02, academic and healthcare professional)
	Diagnosing DRM	'It is one important piece in this puzzle. If there is a diagnosis, then there is a problem by definition. […] For example, if the patient is very ill, it is natural that the patient has no appetite or the patient is losing weight they would probably give some artificial nutrition. But, if there is a diagnosis and as you say that might be reimbursement connected to that, it is one part of the puzzle. I can't say it will solve the whole puzzle, but it is one important piece'. (Key informant 17, healthcare professional and policy maker)
	Treating DRM	'In long-term care, very much like food first focus [to policy] and very much a focus on providing choice. So, looking to improve the client experience with food and in doing so, hopefully improved intake. In hospital, I would say very similar'. (Key informant 18, nutrition professional and policy maker)

Continued

Table 1 Continued

DRM policy themes	Subthemes	Quotes
Context	System specifics matter	'If all hospitals had the same electronic system, then it would be way easier for screening'. (Key informant 02, academic and healthcare professional) 'It really depends on the hospital. For example, in [name of hospital], [malnutrition] is more or less something of constant attention, but it comes and goes. But it always comes with campaigns. Now, it's really focused on good food instead of malnutrition screening'. (Key informant 10, academic and healthcare professional)
	Cost and capacity	'Showing cost savings is huge. We are in a place in government where we are looking at healthcare costs. So, I do think that's a huge enabler. I think having it deemed a priority would help and I think it has been deemed a priority'. (Key informant 22, policy maker and healthcare professional)
	Social determinants of health	'The research that we've done through so many different lenses has suggested that people who are food insecure are more likely to be captured in samples that are picking up DRM. They're more likely to have diseases, they're less able to manage them. There are many ways in which it feels like this topic [food insecurity] intersects with DRM'. (Key informant 20, academic)
Processes	Cross-sectoral and multi-level governance	'When we're talking about change management and sponsorship, when you're […] trying to impact change across a whole bunch of areas, there isn't […] an obvious person who has control or capacity to make change across all those areas'. (Key informant 16, policy maker)
	Mandating and other reinforcement strategies	'It's a complex system. There are 20 small regions in the country, and they all are all entitled to some level of decision, although there are standards that are implemented at the national level. Some issues are local, and some are national. It's very complicated. In general, […] there is neither local or national regulation for malnutrition screening or malnutrition diagnosis'. (Key informant 09, academic and healthcare professional) 'I'm really excited from an accreditation perspective. That [malnutrition] standard, to me, will speak louder than any policy could within my organization. So, I think if that could become a required organizational practice (ROP) that would, give a lot of focus on the malnutrition, from an organizational perspective, and I even think from a national perspective'. (Key informant 17, healthcare professional and policy maker)
	Windows of opportunity	'Government is interesting because you're not just developing policies. It's depending on what kind of policy window you're in and what opportunities arise. So, we have found with the Food Guide being updated that has resulted in us being able to update a lot of policies to align with the Food Guide, whereas those policies maybe may not have been opened [if the food guide hadn't been updated]'. (Key informant 22, policy maker and healthcare professional)
	Evaluation and research	'I think there are some passive tracking systems that can be put in place that tell you a lot about whether something is wanted or not, and whether it's appropriate. I guess whether the intervention is appropriate. I don't think that's hard to do passively … you've got a cause here that is indisputably important with very palpable impacts'. (Key informant 20, academic) 'I think a really important piece of our work is policy evaluation, but then making sure that policy evaluation is implemented and integrated throughout the entire policy cycle. So, does the policy have a logic model? Does it have a theory of change? Does it have an evaluation framework? Kind of those key pieces too'. (Key informant 22, policy maker and healthcare professional)

DRM, disease-related malnutrition.

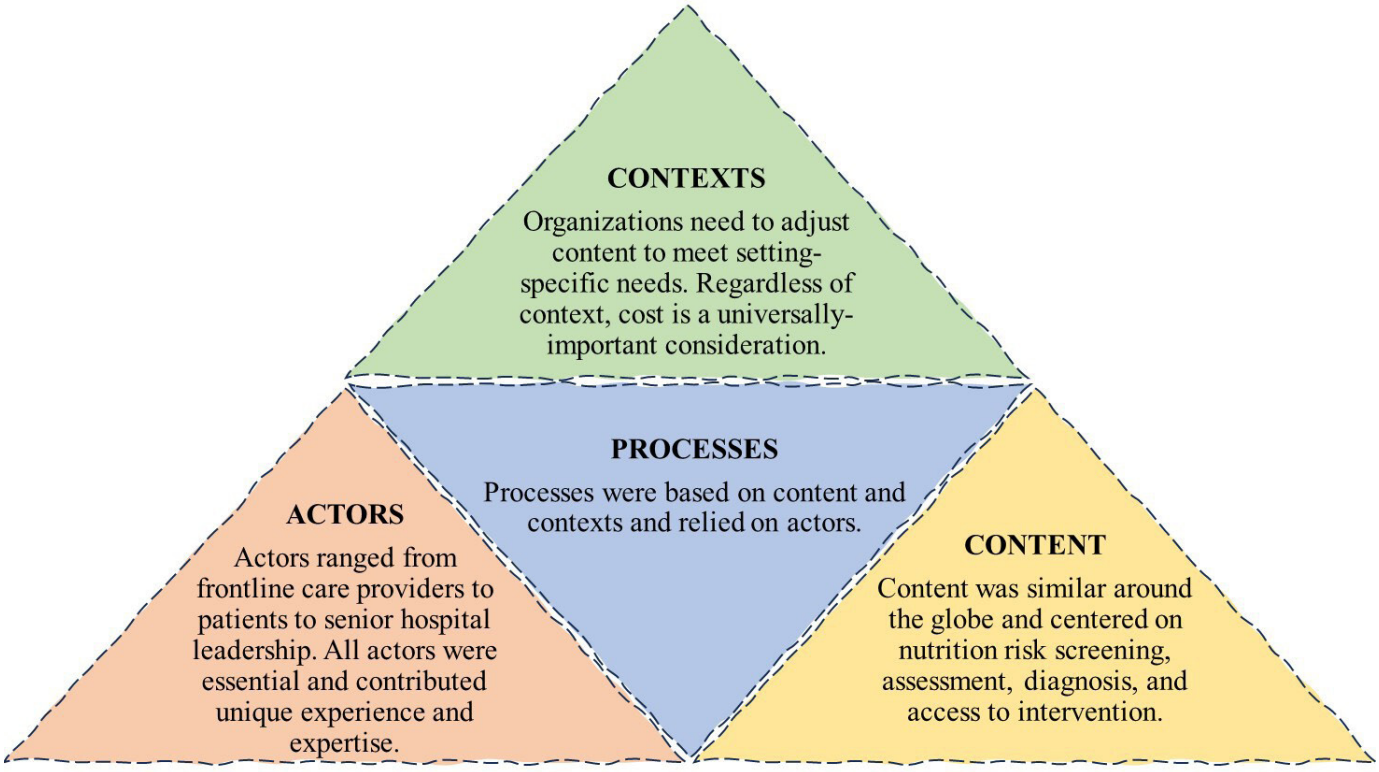

Figure 1 An overview of findings from key informant interviews.

Individuals with lived experience

Individuals with lived experience were identified as actors of utmost relevance for DRM policy. Patients were often discussed as crucial, yet missing, in DRM advocacy efforts. Some KIs noted that certain health conditions, such as diabetes and cardiovascular disease, had greater participation of patient groups in shaping care, whereas patients with other conditions (eg, liver and kidney disease) had less regard for the importance of nutrition. Raising awareness of DRM among patients while understanding their stance and engagement as actors were factors discussed. KI-09 (academic and healthcare professional) noted:

> But it's almost unknown to me that there is a renal patient who is aware that his or her nutritional status is important, or a liver patient. This kind of awareness is not there. So even working with the international patient organizations have honestly not been easy because we are missing the champions.

KIs firmly believed that patient groups need to have a voice in DRM policy discussions because food, as a component of DRM treatment, ought to be understood as a matter of 'the dignity of the person' (KI-03, academic and healthcare professional) as well as a human right. Moreover, patient groups would bring diverse voices to DRM policy discussions and provide a lived experience perspective for those who would be most affected by DRM policy.

DRM policy content

The HPT framework broadly considers content as the objectives of a policy.[18] This theme included KIs' views on policy content objectives and areas of focus. KIs provided content examples from clinical practice and general insights pertinent to DRM policy. Three subthemes were identified as vital components of DRM policy content: screening, diagnosis and treatment.

Screening for DRM

KIs involved in DRM research or clinical practice discussed the importance of malnutrition screening as an essential component of care in hospital, especially among older adults. KIs commonly expressed that they were unaware of any consensus (in their respective countries) on how to screen for DRM, yet questions about unintentional weight loss, body mass index and loss of appetite were provided as examples of more widespread DRM indicators used in practice. KIs, primarily from Europe, who were knowledge experts in DRM discussed the GLIM framework[10 11] (includes criteria for screening) and its adoption by organisations in some countries.

Diagnosing DRM

DRM policy content needs to address how to formally identify and record a DRM diagnosis. KIs discussed the absence of a formal diagnosis of malnutrition (eg, using an existing International Classifications of Diseases (ICD) code) and how this impacted funding allocation, health professionals' awareness of DRM and financial supports

available to patients in the community. KIs deemed evidence for the diagnosis of malnutrition as key content in DRM policy. Such content could facilitate DRM advocacy and policy implementation in different contexts.

Treating DRM

KIs provided varying levels of detail on DRM treatment based on their experience and area of practice. Treatment-related content was perceived as overlapping with contextual factors and dependent on the setting (eg, hospital, care homes, community) and its priorities. Treatment in care homes is focused on quality of life, whereas the priority in hospital is on recovery, and on prevention in the community.

Regardless of setting and priority, dietitians were viewed as DRM experts, but not all were permitted to provide a medical diagnosis and/or prescribe medical foods (eg, ONS). Often, DRM diagnoses and treatment prescriptions are recognised by health systems with ICD-10 coding by a physician, despite many lacking expertise with DRM. In the community, lack of policy on funding and reimbursement for medical foods (eg, ONS, enteral nutrition) may prevent patients with DRM from accessing prescribed treatments. Access to, and ability to prescribe, medical foods were viewed by KIs as important factors for DRM policy content.

DRM policy context

In the HPT framework, context refers to the systemic factors that influence policy such as social, economic, political, cultural and environmental conditions.[18] Questions about policy context focused these factors across three settings: hospitals, care homes and community, as highlighted by the subthemes.

System specifics matter

The context (eg, hospital, care homes or community) is a critical consideration for any DRM policy. Setting-specific factors to consider included where health information is stored (eg, electronic medical record), the healthcare organisation's capacity for research, the geographical space (eg, country size), the population being served, the workflow and how priorities are established in each context. KI-03 (academic and healthcare professional) explained: 'In my hospital, the quality of nutrition care is quite high and, because of our research, it's [quality of nutritional care] quite different from hospital to hospital or from the staff that is working there'.

System-related specific contexts mentioned by KIs were diverse (eg, role and experience of dietitian across care settings, access to home nutrition support, reimbursement process and structure of governing health authority). An enabler for DRM policy implementation in one setting may not be feasible, or be a barrier, in another context. For example, KI-10 (academic and healthcare professional) said: 'we have one country, one policy. That's really an enabler' whereas KI-02 (academic and healthcare professional) described:

> We have another problem in [country name]; healthcare is not governed on a national level. There are [number] regions, and they are enormous. All [number] regions have their own way of doing things. There are guidelines and they could follow them, but they can interpret the guidelines in their own way.

It was clear that each setting is unique and complex. Consequently, DRM policy context needs to be well understood to foresee implementation enablers and plan for overcoming potential barriers unique to each setting. Some KIs expressed caution when defining DRM policy context across more than one setting:

> I think this is probably in some ways common sense, but the broader it gets, the harder it is to have clear minimum guidelines or standards for everyone. What this looks like in continuing care, you know, it's probably quite different than what it looks like in community. So that can be tricky. (KI-16, policy maker)

Cost and capacity

KIs unanimously referred to cost savings that arise from proper DRM diagnosis and treatment. KIs discussed the importance of using healthcare data to calculate and demonstrate DRM cost across settings. This contextual factor commonly intersected with the process subtheme on evaluation and research. KIs described the continued need to examine DRM cost to the healthcare system as a contextual enabler to DRM policy. KIs agreed that addressing DRM represented a healthcare cost savings opportunity and that healthcare investment could foster *capacity* building related to DRM policy. This investment was discussed in relation to increasing the number of healthcare professionals—dietitians, doctors and nurses—who are trained to screen, diagnose and treat DRM in hospitals, care homes and communities. The role of dietitians was commonly emphasised as critical to the success of DRM policy as explained by KI-21 (academic and healthcare professional): 'I think that we [dietitians] may be one of the only professionals that are not doctors of medicine that could diagnose disease and it is DRM'.

Social determinants of health

KIs commonly mentioned the social determinants of health as other contextual factors to consider. KI-22 (policy maker and healthcare professional) explained:

> I do think it's important to recognize those interrelations between the social determinants of health and malnutrition. Obviously, you're never going to have a perfect policy … no policy is going to be perfect for everybody. But I do think in developing policies in general, understanding the determinants of health and having that health equity lens is really important.

Within the social determinants of health, food insecurity and the related concepts of access to food and affordability were prominent in the data. Food insecurity was described as lack of financial resources to buy

foods needed for recovery from DRM postdischarge from acute care. In the context of community-based settings, food security and affordability were more encompassing concepts that included individuals' ability to afford sufficient healthy foods for DRM prevention and treatment, as well as medical foods such as ONS prescribed for DRM. KIs discussed the intersection of food insecurity and DRM and believed that even though these two issues could be addressed separately (especially in hospital settings where the focus is on DRM), they would converge in the community. For example, a nutrition professional and policy maker (KI-18) said: 'It has always seemed really disconcerting […] to do a lot of work screening for malnutrition, identifying and intervening in hospital and then discharging to the very communities where people became malnourished in the first place'. Food insecurity was a contextual factor raised by various KI and acknowledged by all when probed. Consensus on how to address food insecurity in DRM policy was not achieved, yet KIs believed that food insecurity and DRM should be weaved together with other social determinants of health.

DRM policy processes

In the HPT framework, processes refer to initiation, development or formulation, negotiation, communication, implementation and evaluation of policies.[18] In this theme, the complexity of DRM policy processes was captured through four subthemes: cross-sectoral and multi-level governance, mandating and other reinforcement strategies, windows of opportunity, and research and evaluation.

Cross-sectoral and multi-level governance

KIs were emphatic that DRM policy should involve multiple disciplines, departments (eg, clinical, nutrition, food services), sectors (eg, social services, primary care) and actors. 'We also need it to be … that promotion of interdisciplinary, right? It can't just be an issue for nutrition and food services. It has to be everyone' (KI-17, healthcare professional and policy maker). KIs believed that stronger engagement across sectors would increase the likelihood for the DRM policy to gain momentum. The importance of mobilising various levels of governance to develop, implement and evaluate DRM policy, was emphasised. Across countries and jurisdictions, there were examples of health policies that were more 'successful' when the issue being addressed (eg, fall prevention) was deemed relevant by multiple levels of governance, and the individuals representing them, within governments or organisations.

> It would require a neutral platform to bring all of these organizations together and we have done that ourselves … Usually, it's a third sector organization that provides that neutral platform. And essentially all of this needs to result in maybe two sets of policy actions which might be aimed for. One at the level of clinical policy guidance and the other one at the level of parliamentary policy action. (KI-11, academic and healthcare professional)

Mandating and other reinforcement strategies

KIs expressed support for DRM policy that mandates screening, diagnosis and treatment across settings, especially hospitals and care homes. They described that implementation challenges would persist regardless of policy mandates, secondary to the above mentioned contextual factors. This was exemplified by KIs from countries where national standards for DRM exist, or previously existed but had been removed. KI-10 (academic and healthcare professional) explained:

> I think that these quality indicators that we have had for more than 12 years, they have made a difference because it [screening] was mandatory. It was implemented everywhere, 100% implementation. They let it go as of 2019 so I'm really anxious to see what will happen now, whether the hospitals will continue to register [outcome of screening] because it was built into the electronic patient files or whether they will lose attention and forget about it.

Many KIs expressed that implementation strategies such as establishing required organisational practices, moving to an accreditation process, measuring key performance indicators and having a reimbursement model for patients with DRM were required in addition to mandates to foster DRM policy development and implementation. KIs perceived these strategies as effective and more easily achievable than a mandated DRM policy across countries and jurisdictions.

Windows of opportunity

This subtheme captured the timing of DRM policy development and implementation processes. KIs suggested that policy negotiation would be facilitated when other HPT framework factors (ie, context, actors and content) aligned with opportunities to implement DRM policy. For example, KIs suggested that change in hospital meal service, release of new or updated national guidelines, or involvement of individuals with lived experience were windows of opportunity for DRM policy development and implementation.

Evaluation and research

Evaluation of DRM policies was discussed as vital for demonstrating the impact of DRM treatment, particularly for healthcare cost. This subtheme, overlapped with context (cost and capacity), as evaluation of the healthcare costs associated with DRM were thought to be a key driver to policy development and implementation. KIs discussed the importance of having measures in place to demonstrate impact and continuing to raise awareness of DRM among actors (eg, healthcare professionals, policy makers, patient advocates, etc).

Research was seen as key for knowledge generation and dissemination relevant to DRM policy initiatives that

can extend to other countries, settings and organisations. KIs discussed research as it related to DRM screening, diagnosis and treatment. Many emphasised the vital role research played in raising awareness of DRM among key policy actors and healthcare professionals. KIs believed that DRM research was an important piece for DRM policy content and context development because it would enable different organisations and settings to prioritise DRM actions. KI-17 (healthcare professional and policy maker) explained:

> In my role, we really are thankful for all of the work done by [name of research group] because that has enabled us to have the proof that we need to implement into action various strategies related to malnutrition. We didn't have to gather all the evidence. The evidence is there.

As such, evaluation was tied to knowledge translation where results from DRM interventions and policies needed to be communicated broadly and effectively to actors across many sectors.

DISCUSSION

Findings from KI interviews suggest that DRM is not well recognised or addressed through health policy in Canada or globally. Key gaps and barriers to DRM policy development and implementation included multi-level governments, jurisdictional priorities and the need for continued advocacy. Social determinants of health, including food insecurity, also emerged as important considerations. These findings align with other work that suggested factors internal and external to the health system have inhibited incorporation of DRM into health policy.[26] Building on advances in the field over the past two decades, there is opportunity to leverage the capacity and momentum of DRM initiatives to generate policy that will positively impact health and decrease associated health systems costs.[1] This qualitative analysis of KI interviews contributes to the literature describing DRM policies and the value of incorporating implementation initiatives into policy.

KIs acknowledged coalitions, organisational champions and individuals with lived experiences as key actors for DRM policy development and implementation. Organisational leadership (eg, healthcare administrators), interdisciplinary champions (eg, healthcare providers, policy makers, researchers) and nutrition experts (ie, dietitians) are drivers of change and can embody implementation efforts through support, promotion and leadership.[15] These actors can be leaders and advocate for change within their local settings to propel DRM policy development and implementation. The conceptual model of champion impact by Shea suggests that commitment, experience and self-efficacy influence champion performance and ultimately impact.[27] These champion characteristics align with those mentioned by KIs and suggest that champions are fundamental leaders of change who can support DRM policy and advocacy.

Globally, coalitions of actors have been advocating for improved DRM management. NutritionDay aims to improve DRM awareness and nutrition care of patients.[8] This effort is a worldwide scientific programme that operates on a continuous improvement circle and encourages care institutions (hospitals, intensive care units and nursing homes) to register for the initiative, collect data during a 1-day cross-sectional audit and contribute to the growing body of global DRM literature.[8] These large-scale efforts to advance DRM would not be possible without key actors including champions, organisational leaders and individuals with lived experience. The results of the current study indicate that further involvement from organisational leaders and individuals with lived experience are needed. DRM policy development and implementation should occur based on setting-specific needs and contexts but can be informed by cross-country coalitions (eg, ONCA[9]) that provide overarching goals and objectives.

Despite global and national advancements in DRM, gaps exist between current policy and evidence-informed practice. The economic impact of DRM was viewed as a key context consideration for future policy and a lever to gain attention from senior healthcare administrators. In Canada, it is estimated that DRM costs the healthcare system an additional $2 billion per year (pre-COVID-19).[1] Patients with DRM remained in hospital 3 days longer, on average, than patients without DRM and incurred approximately $2900 more in hospital costs compared with well nourished patients.[1] A complete economic impact analysis is needed to fully appreciate the gravity of this situation post-COVID-19. Appreciation for the problems and implications of DRM is lacking for many organisational leaders who can implement organisational and system-level change. Absence of widespread DRM diagnosis using ICD-codes relates to policy content and actors, as formal diagnoses would draw attention and awareness to DRM among a broader scope of actors (eg, interdisciplinary care team, hospital leadership, etc). Related to HPT context, specifically cost and capacity, the economic impact of poor screening tool sensitivity is one example of the importance of DRM diagnosis by ICD-codes, especially in settings where DRM is prevalent.[28] Strategies to combat DRM exist but are not widely implemented given the lack of policy mandate.

Another key group of actors with ability to influence DRM policy are individuals with lived experience. Patients with DRM have lived experience and play a critical role in shaping strategies, advocacy efforts and DRM policy that will impact patient-oriented outcomes, yet their voice is lacking in these initiatives. Similarly, a study that defined DRM as a health policy issue found that the patient plays a key role in policy development.[26] A phenomenological study suggested two key approaches to addressing clinical nutrition policy (eg, DRM) including the need for an interdisciplinary approach and a human rights-based

approach.[26] Nutrition care as a human right has been recognised by an international declaration[29] and underpins our findings whereby access to food as treatment for DRM and implications of social determinants of health came through broadly across themes.

Our findings suggested that DRM policy development processes should centre around cross-sectoral and multilevel governance; mandating and other reinforcement strategies for policy; capitalising on windows of opportunity; and using research and evaluation. Current government health policy is focused on prevention of conditions related to overnutrition and chronic diseases whereas healthcare policy addressing disease states, such as DRM, was often viewed as a local facility or organisation responsibility by KIs, rather than the purview or mandate of government.

The need for research to inform policy development and implementation overlapped with all areas of the HPT framework. It was clear that DRM policy processes evolve relative to the HPT actors, content and contexts within the target setting. It is essential for actors invested in DRM policy to understand their setting, context, purpose and evaluative needs to foster targeted and sustainable policy. KIs identified need for policy processes, contexts and content, but provided few tangible examples of policy implementation or evaluation. Key initiatives to standardise the nutrition care process related to DRM (eg, GLIM) in countries that include screening, assessment and diagnosis of DRM[10 11] provide examples for others to build on in their efforts to advance DRM policy development and implementation. KIs discussed GLIM as one step towards DRM care consensus, but the need for tangible policy related to nutrition screening, diagnosis and treatment cannot be understated.

Strengths and limitations

The multi-national first-hand perspectives from experts in policy and/or DRM across settings was a strength of this work. We recognise that this is a large and complex topic, and our broad approach of focusing internationally and across multiple care settings introduced further complexity. The decision to take this broad approach was based on the lack of DRM policy within Canada, and the need to learn from the experiences of other countries and settings. The HPT framework provided structure to the interview questions and analysis. A broad range of perspectives were provided which further strengthens our results and their potential utility. Snowball sampling allowed for inclusion of KIs beyond the researcher's networks. Finally, use of the HPT framework to inform our approach aligns with health policy analysis and is generalisable across jurisdictional settings (from local-level to global-level policy).[18]

Purposive sampling is a strength and limitation. KIs were selected based on their ability to provide diverse perspectives from a range of expertise and levels of influence on DRM and health policy implementation, including senior leaders in prominent international organisations. Thus, KIs were selected from countries actively working in DRM policy development and/or implementation.

Potential impact

In line with the CANDReaM commitment to the United Nations Decade of Action on Nutrition,[14] our findings inform DRM policy development and implementation and are a key step towards advancing DRM policy efforts in Canada and globally. The opportunity identified is the need for DRM policy that involves interdisciplinary care team members, individuals with lived experience and policy makers. The creation of an alliance with involvement from these groups will facilitate DRM policy development. Guidance documents such as the Integrated Nutrition Pathway for Acute Care[30] and the CAN/HSO 5066:2021(E) Malnutrition Prevention, Detection and Treatment standard[13] are closely related to DRM policy content and exemplify important key steps towards DRM policy development and implementation in Canada. DRM policy context is system-specific and cost analysis is a facilitator for policy advocacy at the health system level. Direction on setting-specific standardised treatment remains a gap to be further explored. A further understanding of the linkage between food security and DRM may provide one avenue for considering the more systemic issues impacting prevention and treatment of DRM. Finally, DRM policy processes are complex and occur at the jurisdictional level (eg, health system, hospital or facility, other). Strategies to support policy implementation[13 30] exist but are not widespread. Research and evaluation throughout the policy development and implementation processes in the clinical setting has begun[31] and should be spread to community to better understand setting-specific processes.

CONCLUSION

Gaps and barriers to DRM policy development and implementation exist. There are opportunities and enablers to inform a DRM policy framework. Findings from this study can be used to guide implementation strategies across countries and jurisdictions that incorporate policy as a lever to accelerate practice change. Ultimately, DRM policy will vary and will likely be seen at country-, province-, zone- or site-levels around the world. The landing spot of DRM policy will be informed by actors, content, context and process specifics for each jurisdiction.

Author affiliations
[1]Department of Kinesiology & Health Sciences, University of Waterloo, Waterloo, Ontario, Canada
[2]Clinical Nutrition Services, Saskatchewan Health Authority, Regina, Saskatchewan, Canada
[3]Clinical Nutrition Services, Alberta Health Services, Edmonton, Alberta, Canada
[4]Institute for Health System Solutions and Virtual Care, Women's College Hospital, Toronto, Ontario, Canada
[5]Department of Agricultural, Food & Nutritional Science, University of Alberta, Edmonton, Alberta, Canada
[6]Department of Medicine, University of Alberta, Edmonton, Alberta, Canada

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ORCID iD
Katherine L Ford http://orcid.org/0000-0002-8620-9360

REFERENCES

1 Curtis LJ, Bernier P, Jeejeebhoy K, *et al*. Costs of hospital malnutrition. *Clin Nutr* 2017;36:1391–6.
2 Allard JP, Keller H, Jeejeebhoy KN, *et al*. Decline in nutritional status is associated with prolonged length of stay in hospitalized patients admitted for 7 days or more: A prospective cohort study. *Clin Nutr* 2016;35:144–52.
3 Jeejeebhoy KN, Keller H, Gramlich L, *et al*. Nutritional assessment: comparison of clinical assessment and objective variables for the prediction of length of hospital stay and readmission. *Am J Clin Nutr* 2015;101:956–65.
4 Allard JP, Keller H, Jeejeebhoy KN, *et al*. Malnutrition at Hospital Admission-Contributors and Effect on Length of Stay: A Prospective Cohort Study From the Canadian Malnutrition Task Force. *JPEN J Parenter Enteral Nutr* 2016;40:487–97.
5 Norman K, Haß U, Pirlich M. Malnutrition in Older Adults-Recent Advances and Remaining Challenges. *Nutrients* 2021;13:2764.
6 Wendland BE, Greenwood CE, Weinberg I, *et al*. Malnutrition in institutionalized seniors: the iatrogenic component. *J Am Geriatr Soc* 2003;51:85–90.
7 Murphy J, Bracher M, Tkacz D, *et al*. Malnutrition in community-dwelling older people: lessons learnt using a new procedure. *Br J Community Nurs* 2020;25:193–5.
8 Schindler K, Pichard C, Sulz I, *et al*. nutritionDay: 10 years of growth. *Clin Nutr* 2017;36:1207–14.
9 de Man F, Barazonni R, Garel P, *et al*. Towards optimal nutritional care for all: A multi-disciplinary patient centred approach to A complex challenge. *Clin Nutr* 2020;39:1309–14.
10 Cederholm T, Jensen GL, Correia MITD, *et al*. GLIM criteria for the diagnosis of malnutrition – A consensus report from the global clinical nutrition community. *Clin Nutr* 2019;38:1–9.
11 Jensen GL, Cederholm T, Correia MITD, *et al*. GLIM Criteria for the Diagnosis of Malnutrition: A Consensus Report From the Global Clinical Nutrition Community. *JPEN J Parenter Enteral Nutr* 2019;43:32–40.
12 Nations U. Decade of Action on Nutrition, Available: https://www.un.org/nutrition/ [Accessed 2 Feb 2023].
13 CAN/HSO 5066:2021 - malnutrition prevention, detection, and treatment.
14 Nations U. The Canadian Nutrition Society and the Canadian Malnutrition Task Force commit to the Nutrition Decade, 2022. Available: https://www.un.org/nutrition/news/canadian-nutrition-society-and-canadian-malnutrition-task-force-commit-nutrition-decade [Accessed 28 Feb 2023].
15 Powell BJ, Waltz TJ, Chinman MJ, *et al*. A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project. *Implement Sci* 2015;10:21.
16 Organization WH. Health System Governance, 2023. Available: https://www.who.int/health-topics/health-systems-governance#tab=tab_1 [Accessed 27 Feb 2023].
17 Prevention CfDCa. Definition of Policy, 2023. Available: https://www.cdc.gov/policy/opaph/process/definition.html [Accessed 28 Feb 2023].
18 O'Brien GL, Sinnott S-J, Walshe V, *et al*. Health policy triangle framework: Narrative review of the recent literature. *Health Policy OPEN* 2020;1:100016.
19 Walt G, Gilson L. Reforming the health sector in developing countries: the central role of policy analysis. *Health Policy Plan* 1994;9:353–70.
20 Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *Int J Qual Health Care* 2007;19:349–57.
21 Patton M. *Qualitative research & evaluation methods*. 3rd edn. Sage Publications Inc, 2002.
22 Mayan MJ. *Essentials of qualitative inquiry*. 2nd edn. New York, NY: Routledge, 2023.
23 Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77–101.
24 Braun V, Clarke V. Can I use TA? Should I use TA? Should I*not*use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Couns Psychother Res* 2021;21:37–47.
25 O'Brien GL, Sinnott S-J, O' Flynn B, *et al*. Out of pocket or out of control: A qualitative analysis of healthcare professional stakeholder involvement in pharmaceutical policy change in Ireland. *Health Policy* 2020;124:411–8.
26 Cárdenas D, Pérez Cano AM, Díaz G, *et al*. Nutrition care as A health policy in the 21st century: A phenomenological study. *Clin Nutr ESPEN* 2022;47:306–14.
27 Shea CM. A conceptual model to guide research on the activities and effects of innovation champions. *Impl Res Pract* 2021;2:2633489521990443.
28 Bell JJ, Bauer JD, Capra S, *et al*. Quick and easy is not without cost: implications of poorly performing nutrition screening tools in hip fracture. *J Am Geriatr Soc* 2014;62:237–43.
29 Cardenas D, Correia MITD, Hardy G, *et al*. International Declaration on the Human Right to Nutritional Care: A global commitment to recognize nutrition care as A human right. *Nutr Clin Pract* 2023;38:946–58.
30 Keller HH, McCullough J, Davidson B, *et al*. The Integrated Nutrition Pathway for Acute Care (INPAC): Building consensus with a modified Delphi. *Nutr J* 2015;14:63.
31 Keller H, Koechl JM, Laur C, *et al*. More-2-Eat implementation demonstrates that screening, assessment and treatment of malnourished patients can be spread and sustained in acute care; a multi-site, pretest post-test time series study. *Clin Nutr* 2021;40:2100–8.