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Challenges and Successes of Global Deprescribing Networks: A Qualitative Key Informant Study

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Abstract

The landscape of deprescribing has been rapidly evolving and expanding globally with the formation of regional and national deprescribing networks. The work of these networks is primarily focused on older adults and high-risk medications. The purpose of this qualitative study is to describe successes and challenges of deprescribing from thought-leaders across the world. Fourteen key informant interviews (KIs) were conducted from various disciplines, levels of experiences, and regions around the globe. From the interviews, six major themes across two domains were identified: 1) network structure, 2) public perception, 3) policy implications, 4) implementation, 5) challenges, 6) recommendations. These domains, themes, and insight provided by deprescribing leaders contribute to the advancement of deprescribing networks as global efforts continue to focus on optimizing medication management. Collaboration among interprofessional team members will be critical to the expansion as well as sustainability of this important work.

Keywords

Deprescribing; older adults; polypharmacy; public policy; qualitative; medication management; interprofessional collaboration

INTRODUCTION

Deprescribing is defined as the thoughtful process of “tapering, stopping, discontinuing, or withdrawing drugs, with the goal of managing polypharmacy and improving outcomes” (Thompson & Farrell, 2013). Deprescribing efforts are increasing globally, bolstered by the formation of regional and national formal and informal deprescribing networks aimed at bringing multi-disciplinary groups of professionals together to share resources, research, successes, and challenges. Deprescribing networks now exist in Australia, Canada, Europe,

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and the United States, among others. Given this momentum, the evidence base for deprescribing is rapidly growing. A PubMed search for the term "deprescribing" resulted in 0 publications in 2010 and 359 in 2020. Much has been described about older adult, caregiver, and provider perspectives regarding deprescribing (Kalogianis, Wimmer, Turner, et al., 2016; Turner JP, Edwards, Stanners, Shakib, & Bell, 2016). However, much less is known about deprescribing network leaders' perspectives and their efforts to disseminate research findings and collaborate within and across networks. Understanding network leaders' successes and challenges can help harmonize global efforts in deprescribing, inform future policy directions, and generate new research and outreach efforts to improve medication safety in older adults. Thus, the objective of this qualitative study was to synthesize successes and challenges of deprescribing efforts by conducting key informant interviews with network thought leaders around the world.

METHODS

Study Design

This study used a qualitative research design with key informant (KI) interviews. Interviews were conducted from June 3, 2020 to March 26, 2021. The study was reviewed and approved by the University of Maryland Institutional Review Board (HP-00089278).

Participant Sampling and Recruitment

Potential study participants were identified using a purposive sampling approach based on the following inclusion criteria: English-speaking, involvement in deprescribing clinical efforts or research, and published at least two peer-reviewed papers or policy documents in a relevant domain such as medication safety. A conscious effort was made to recruit KIs from different regions of the globe to increase the potential diversity of experiences and opinions. KIs were identified via professional networks, social media (i.e., LinkedIn, Twitter), literature review searches, and recommendations from other study participants.

Recruitment

Eligible participants received a standardized email from the principal investigator (NB) outlining the study purpose and procedures. Interviews were scheduled upon agreement to participate, and KIs were sent a copy of the interview guide in advance.

Semi-structured interview guide

The semi-structured interview guide was informed by the John Kingdon Policy Streams Framework, a tool for understanding the policy process and agenda-setting (Kingdon, 1984). The framework posits that windows to implement policy are created when independent streams of policy problems (e.g., polypharmacy and potentially inappropriate medication use in older adults), policies (e.g., researchers and experts who examine and propose solutions), and politics (e.g., public recognition of the problem enabling political change) collide (Béland & Howlett, 2016). Other key factors include proximity to power brokers, credibility, persistence, and willingness. The interview guide was centered around policy alignment, research gaps, barriers to implementation, and visions for the future of deprescribing networks and the global community.

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Data collection

A team of four investigators (AT, CK, GK, NB) conducted the interviews using the video-conferencing platform, Zoom. At least two investigators were present during each interview based on availability. One of the investigators present conducted the interview while the other recorded notes. All participants provided verbal informed consent during the recorded session. Each interview was transcribed by one investigator and reviewed by another investigator for accuracy.

Data Analysis

Transcripts were de-identified and Atlas.ti was used for data analysis. A two-member team (AT, CK) independently reviewed and coded all interviews utilizing thematic analysis (Braun & Clarke, 2012). An initial codebook was created using the interview guide, which guided the initial coding. Each transcript was reviewed to identify additional themes and discussed among the team for code creation. After a final discussion, the codes were collated and used for each transcript. Each interview was coded twice individually and deliberated collectively. Atlas.ti was utilized to extract and organize codes and excerpts into overarching themes. Each set of extracted codes was reviewed to identify additional emerging patterns and further categorized into sub-themes.

RESULTS

As outlined in Table 1, a total of 14 KI interviews were conducted from 4 disciplines, 7 practice settings, and experience ranging from new practitioner to 21+ years. KIs represented 10 countries: Australia, Belgium, Canada, Denmark, France, Germany, Israel, Taiwan, United Kingdom, and the United States. The average interview length was 48.75 minutes. Based on these interviews, the following five themes were identified: network structure, public perception, public policy, implementation, and challenges. As illustrated in Figure 1, these themes were grouped into two broader domains: regional resources and knowledge gaps. Additionally, a sixth theme, recommendations, was identified as an overarching theme with relevance to the five previously described. Key themes and supplemental quotes for each are presented in Table 2.

1. Network Structure

Networks provide the opportunities for engaged professionals to collaborate on a specific topic or interest area. KIs shared their involvement and experience with deprescribing networks and other organizations contributing to this work. According to KIs, networks are largely regionally based and vary in terms of organizational structure, leadership, focus, and initiatives.

Organizational Structure—During the 14 KI interviews, six established networks were identified. These networks exist in a continuum from highly structured organizations to loosely grouped professionals. Some networks are comprised of a distributed leadership team including an executive board, various committees, and stakeholder representatives. Other less-structured networks operate primarily off an email list with no leader or organized meetings. One KI from a network that falls in the middle of the structure continuum stated,

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"we like the fact that we're an informal network because it's very inclusive in that way." Several networks reported being in early stages of development and looking to strike a balance between being an organic, open conversation among engaged members while also being established enough to leverage effective change. One KI expressed their hope for the network as, "doing really great research and linking people but I do also want us getting a seat at the table at other things and having direct lines to government and other organizations to be able to really enact a national strategic plan."

Network Focus—Networks ranged in terms of focus, primary goals, and actionable initiatives. All KIs (14/14) mentioned research playing a role in network programming. One network intentionally shifted the focus from research to public engagement to address regional needs and another network focuses primarily on engaging practitioners. In addition to research, most KIs expressed a strong interest in global collaboration among the networks. This is discussed further in the 'Vision and Recommendations' section, but it is important to note that one network made global collaboration their main priority for the foreseeable future.

2. Public Perspective

KIs demonstrated consensus around the limited awareness of the public with the term and concept of deprescribing. KIs did agree that fundamentally there is some awareness and concern from the public about the consequences of medication overuse. This awareness is primarily due to personal experiences or anecdotes. As one KI summarized, "the general public's recognition of [deprescribing] is more anecdotal through individual experiences with their own healthcare and healthcare of friends and family members." Per two other KIs, the increase in public interest can also be attributed to increased levels of health literacy, global spread of information, and public health crises such as the opioid epidemic.

KIs noted the knowledge gap and cultural norms as potential barriers to the public's awareness of deprescribing. One KI shared, "the public is aware that [taking] a lot of medications is generally not good, but they do not know how to cut down on medications." From this KI's perspective, the public prefers specialists over generalists to manage their medications because the public perceives them as being "better". In terms of cultural norms, one KI shared, "I don't know if it's something that is seen as normal. People are familiar with going to the doctors and getting a prescription, but I don't think it's necessarily a big part of culture in terms of knowledge around harms of medication use and the need to regularly review medications and potentially stop medications."

3. Policy Implications

The KIs described several different strategies employed to engage policymakers and enact policies around deprescribing. Policy opportunities varied between regions, health systems, and cultural norms.

Network Involvement—For those with established networks, there was some correlation between the level of organization and policy focus. Networks with multiple committees tended to prioritize policy change more than less-structured networks solely focused on

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research. For these organizations, impacting policy was an afterthought. One KI from a less-structed network stated, "I don't think we will ever get to a policy phase."

Policy Initiatives—Several key proposed and implemented policy initiatives were shared by KIs. Some examples include:

- efforts by government sponsored organizations to reduce the use of antipsychotic medications in long-term care;
- government incentives to reimbursement for pharmacist services for deprescribing medications;
- the development of recommendations for a national strategic action plan to address medication optimization in older adults;
- using government channels to publicize education campaigns around the appropriate use of medicines;
- government-led initiatives to improve the accessibility, affordability, and appropriateness of prescription medications;
- de-listing medications from national formularies;
- increasing medication monitoring and stewardship programs;
- increasing nurse practitioner scope of practice; and
- promotion of age-friendly health care systems.

Regional Impact on Policy—KIs shared how their country or region's health care system played a role in the attitudes and perceptions of deprescribing. Government involvement and system incentivization of policy and procedures around deprescribing was brought up multiple times by KIs from different regions. As discussed above in the Public Perception section, the delivery of health care was often considered. KIs in regions with centralized health care were generally more skeptical of new initiatives that would minimize the number of services or products available to the public.

4. Implementation Science

KIs reported that the deprescribing research field could benefit from the further integration of implementation science frameworks, methods, and theories. For example, across the deprescribing networks, KIs noted that there was an important need to identify and evaluate evidence-based implementation strategies or tested ways to increase uptake of deprescribing interventions and guidelines. Explained one KI, "I think one of the gaps is the implementation piece, really learning [and] taking a bit more from the implementation science field…" For instance, KIs noted that structural factors such as lack of time and other priorities in primary care limited uptake of deprescribing interventions by primary care physicians and could be limiting their effectiveness. The use of implementation science could be useful in identifying and mitigating these important barriers.

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Other KIs explained that there was an important gap between guidelines such as the American Geriatrics Society Beers Criteria, the results of randomized controlled studies, and the results from deprescribing interventions in actual practice. KIs noted that this large gap could be addressed through more implementation science studies which could demonstrate how results from guidelines, academic medical centers, and randomized controlled studies could translate to community-based settings. Explained one KI:

*"I like to think that pharmacists can facilitate deprescribing… trials like D-PRESCRIBE shows it works (*Martin, Tamblyn, Benedetti, Ahmed, & Tannenbaum, 2018)*., but as an implementation scientist, I'm saddened when I look at the report …where they looked at pharmacists [performed] medication reviews on these patients. Did those patients deprescribe? No, three out of four inappropriate medications stayed the same…maybe it's something in our implementation of these research projects… just because we fund them, doesn't mean they are actually effective."*

KIs recommended that leveraging behavioral science theories could be useful in identifying strategies that could increase uptake of the deprescribing interventions. One KI working on a deprescribing initiative in the long-term care setting noted the use of a resource called the "Behavior Change Wheel" which describes "all the different frameworks with changing behavior, compiled into one very large framework" (Michie, 2014).

5. Challenges

In addition to challenges highlighted previously, funding was noted as a significant barrier by all KIs (14/14). Furthermore, 64% of KIs (9/14) noted that the lack of consistent outcomes to illustrate the value of deprescribing is a challenge. One KI noted: "… I think if we can show that it is cost effective to deprescribe, that there is actually a return here, not just in health terms but in monetary terms, I think that would really push deprescribing along."

Furthermore, there needs to be more collaboration as well as incentives for clinicians to do this work. One KI noted, "…constraint with all the externalities, limited time, no remuneration for doing this, not being able to access people's records, maintaining their medication list, they have five different pharmacists, so I have to contact them all to tell them about the deprescribing plan, etcetera, etcetera. There are a few hurdles, this is definitely not easy to do. It sounds easy but in many ways it is not."

6. Recommendations

Several visions were well articulated by the KIs through various recommendations and hope and excitement was expressed about the work that is being done. One KI stated that "just looking at the numbers of deprescribing networks and groups that have arisen over the last few years, I think that in itself is a good thing."

To further strengthen the networks, KIs emphasized the importance of increasing collaboration by "establishing more deprescribing networks around the globe and the need of having a more unifying feeling." One KI called for a "true interdisciplinary approach" to

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tackle deprescribing, which continues to be one of the biggest challenges in the care of older adults.

In addition to regional in-person meetings, several KIs also expressed an interest in international meetings "where everyone can meet with one another to share ideas." To facilitate this, one KI called for a conference to "push forward an international agenda" based on the ideas of collaborators throughout.

DISCUSSION

Summary of Findings

In this qualitative study of key informant interviews conducted with 14 active deprescribing investigators from 10 different global regions, two domains were identified: regional resources and knowledge gaps; five sub-themes: network structure, public perception, public policy, implementation, and challenges; and an additional overarching theme: recommendations.

The Importance of Public Engagement

When considering the role of the public as important stakeholders in creating momentum for change, implementing strategies to educate and spread information on deprescribing is crucial. (Turner, Currie, Trimble, & Tannenbaum, 2018). As shown by the KIs' experiences, while the public is unaware of the concept of deprescribing, they are interested in the harms and benefits of medication overuse (Turner, & Tannenbaum, 2017). A survey conducted in Canada found a positive association between exposure to information on deprescribing and initiating discussion with healthcare providers. Similar findings have been identified in other regions. In the U.S., 2016 survey of Medicare beneficiaries representing 33.4 million older adults in the U.S. found that 92% agreed or strongly agreed that they would stop one or more of their medications if their physician said it was possible, and two-thirds reported that they would like to reduce the number of medications they are taking (Reeve, Wolff, Skehan, Bayliss, Hilmer, & Boyd, 2018). These surveys demonstrate openness to the concepts of deprescribing, even if the general public is less aware of the technical terms. An emphasis should be placed on the inclusion of the public in the planning, organization, and dissemination of information in order to empower patients/caregivers to engage in shared decision making (Turner, Currie, Trimble, & Tannenbaum, 2018).

Aligning Existing Initiatives

Study participants also noted that it was critical to align deprescribing efforts with existing regulatory and policy initiatives, including opportunities to insert guidance on deprescribing in medication package inserts, international efforts to improve medication safety led by the World Health Organization (WHO), new health plan measures on polypharmacy and drug-drug interactions in the U.S., and financial incentives to reduce polypharmacy through the implementation of value-based care. In 2017, the WHO launched a global patient safety challenge entitled "Medication Without Harm," an effort to reduce medication-related harm by 50% in the next five years. (World Health Organization, 2017) Countries are asked to target three priority areas, including high-risk situations (e.g., dangerous drug-drug

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interactions), polypharmacy, and transitions of care (Donaldson, Kelley, Dhingra-Kumar, Kieny, & Sheikh, 2017). Deprescribing networks have the opportunity to drive the work in this area by disseminating existing effective models to address these areas. In the U.S., new geriatric medication management metrics were introduced for review as part of the Healthcare Effectiveness Data and Information Set (HEDIS), used to rate the quality of health insurance plans. One metric focuses on high-risk medication use in older adults using the Beers Criteria using prescription data and a second metric measures potentially harmful drug-disease interactions in older adults (Proposed New Measure for HEDIS ®1 MY 2022). Additionally, there are potential deprescribing quality measures that focus on benzodiazepines. These metrics will allow health plans and organizations to identify and address potentially inappropriate medication use and may drive deprescribing initiatives.

Improving Reimbursement for Deprescribing

As KIs noted, critical to furthering the mission of the deprescribing networks will be improving reimbursement opportunities for deprescribing. In the U.S., if payers find the value in this service, interprofessional reimbursable models of care engaging nurses or pharmacists could help lead this important work. This model currently exists in other countries such as Australia, Canada, and the United Kingdom, but in the U.S., these professionals are not reimbursed for comprehensive medication management services (Buss, Shield, Kosari, & Naunton, 2018).

Limitations and Future Research

This study is limited by a small number of key informants but harnesses strength in the interdisciplinary, global perspectives that are represented. Despite this limitation, our findings complement a 2020 global public policy paper that provides an overview of common deprescribing interventions, including enablers and barriers to implementing deprescribing across settings (e.g. primary, secondary, residential care facilities) and current deprescribing policies in place internationally (Sawan M, Reeve E, Turner J, et al, 2020). Both studies indicate the need for additional deprescribing research focusing on 1) interdisciplinary approach, 2) real-world efficacy and sustainability, and 3) pharmacoeconomic implications.

Conclusion

In conclusion, this qualitative study highlights challenges and opportunities faced by stakeholders across the globe aiming to improve medication safety and promote deprescribing. Our findings reinforce the need for deprescribing research outcomes that illustrate cost-effectiveness, global collaboration among networks, concerted efforts to sustain engagement of different stakeholders, and shared learning on national policies that support deprescribing efforts. Gerontological nurses are integral part of deprescribing in older adults in collaboration with the interprofessional team. We are hopeful by sharing the views of global thought leaders that we can unify efforts and share resources to optimize medication use especially for older adults.

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Conflict of Interest/Funding:

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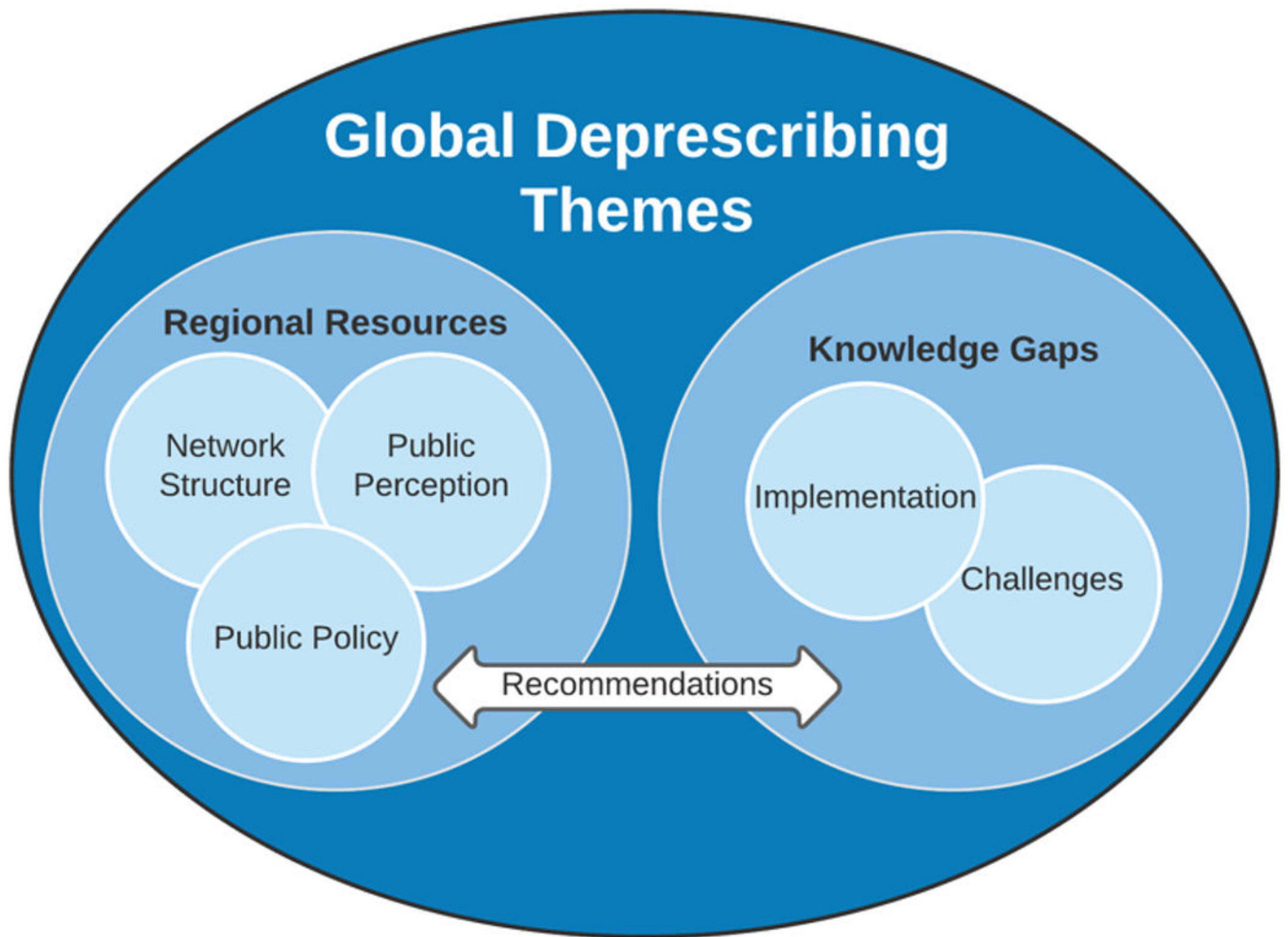

Figure 1. Global Deprescribing Themes.

Five individual themes were identified from 14 key informant interviews (network structure, public perception, public policy, implementation, challenges). They were grouped into two domains as illustrated below (regional resources and knowledge gaps). A sixth overarching theme (recommendations) was identified with spanning relevance to all themes.

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Table 1.

Key Informant Characteristics (n=14)

	Categories	**Number of Key Informants (%)**
Profession	Clinical Nurse	1 (7.1%)
	Pharmacist	5 (35.8%)
	Physician	7 (50%)
	Researcher	1 (7.1%)
Years of Experience	0-5	1 (7.1%)
	6-10	2 (14.3%)
	11-15	3 (21.3%)
	16-20	2 (14.3%)
	21+	6 (43%)
Years of Experience with Deprescribing	0-5	4 (28.6%)
	6-10	2 (14.3%)
	11-15	5 (35.8%)
	16-20	0 (0%)
	21+	3 (21.3%)
Area of Practice	Family Medicine	3 (21.3%)
	Geriatrics	10 (71.4%)
	Internal Medicine	2 (14.3%)
	Palliative Care	2 (14.3%)
Primary Practice Setting	Academic	1 (7.1%)
	Academic Medical Center	6 (43%)
	Community Hospital	1 (7.1%)
	Geriatrics Research Center	1 (7.1%)
	Hospice	1 (7.1%)
	Outpatient Clinic	2 (14.3%)
	None	2 (14.3%)

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Table 2.

Selected quotes for six themes identified from key informant interviews of deprescribing network members.

Quotes selected were based on content, relevance, and significance to the themes identified. Quotes were selected from different key informants to capture a variety of perspectives.

Theme	Quote 1	Quote 2
Network Structure	*"I think the most energizing thing has been the in-person meetings we've had. Where there have been a hundred people present and just the feeding off of each other, motivation to go back, or new partnerships made - that has a lot of value to me."*	*"But the main challenge is going to be that we actually have no permanent funding for the deprescribing network. When this round of funding runs out, we have no money."*
Public Perception	*"I don't think there is an awareness of what is happening on a real policy level whether it be the health system, local, regional, or national efforts. I think that's really translated down to individual patient awareness or caregiver awareness."*	*"I don't think the general public is aware of the concept of deprescribing. In fact, we have documented very extensively that the public is not aware of the concept of deprescribing. The public is very aware or rather concern about the potential for over prescribing or over use of medications."*
Policy Implications	*"I think it is helpful actually to have a policy committee that focuses on that. I don't have the greatest sense to know how to influence policy in [your region] but I know that here, a lot of it comes down to educating and interacting with people who have influence on political level."*	*"The first thing that we really did as an organization to try and effect some policy change was…we developed recommendations for a national strategic action plan relating to optimizing medication use in older adults. It wasn't completely framed around deprescribing but it was very much coming from that point of view and that document was essentially born out of a national stakeholder meeting that we held in conjunction with our deprescribing network…"*
Implementation	*"How do we implement deprescribing approaches in routine practice? Because if you talk to general practitioners in this country, like a family doctor, they typically have 12 minutes with a patient and that patient may have lots of problems and they've got to deal with those problems. And often while deprescribing is recognized as important, it's often not considered the most important problem."*	*"Once you identify what behaviors need to change, say around deprescribing, then you determine whose behavior needs to change, how it needs to change, when it needs to change, and what are the different actions that have evidence to support facilitating that kind of a change…that's the framework that we are using for our deprescribing in long-term care initiative right now."*
Challenges	*"Lack of clinical outcome data is the major barrier to implementing the policies. So we really have to head for endpoints studies like hospitalizations and mortality to show that certain efforts of deprescribing do not cause any harm."*	*"We are, I think, limited by being currently focusing on what is happening in our own yard…quite a lot of deprescribing research going on is underpowered or with somewhat narrowed scope."*
Vision/ Recommendations	*"I think my vision would be to bring together – probably what you have already – an active group of researchers, policy makers, practitioners, and patients to really map out whatever our agenda is for the next five or ten years and have a strategic plan."*	*"My vision would be there will be system support for true interdisciplinary approach to this. Older adults make up the largest part of our healthcare system. So my vision is that we will be an interdisciplinary approach."*