Online Supplementary Table 1

Summary of Peer-Reviewed Studies and Resources included in the Literature Review

Author and Date	Study Purpose	Study/Resource Design	Summary of Key Findings
(Ailabouni et al., 2017)	To explore and investigate the views and perceptions registered nurses have towards medication use and the process of deprescribing in residential care settings.	Cross-sectional survey	-Medication reconciliation and the process of obtaining the most accurate and current list of medication for a patient appeared to be among the more challenging tasks. -Close to half of nursing respondents reported spending between 4-7 hours a day completing medication rounds. -More than two thirds of nursing respondents agreed or strongly agreed that deprescribing would provide many benefits, including: increasing the efficacy of regular clinical reviews, reducing the length of time spent on medication rounds, improving the patient's ability to take the remainder of their medication. -Respondents greatly valued the expertise of a pharmacist, and strongly believed that working together would be beneficial in the deprescribing process.
(Frank & Weir, 2014)	To review the current approaches to deprescribing, primarily based on principles, practice, and available evidence.	Review article of published systematic reviews and randomized control trials	-The first guiding principle found to be involved in deprescribing was the visual "brown bag review", where a patient brought in all medication (prescribed and over the counter) to be reviewed by a healthcare professional (physician, nurse, or pharmacist).-Physicians expressed more difficulty with regard to withdrawing medication because of a lack of evidence to inform patients about the risks and benefits, and

			because of the challenge of having to discussion life expectancy and quality of life. -Another barrier was the patient's belief that taking these medications was better than doing nothing.
(Gillis et al., 2016)	To determine the nurse-related prescribing patterns of medications in nursing homes.	Cross-sectional study	-The prevalence of polypharmacy in nursing homes remains high. -It is unclear if this can be explained by a more appropriate way of prescribing mediation or if there is a lack of skill when it comes to measuring pain by caregivers. -Nurses play an important role in reducing polypharmacy by implementing alternative approaches for reduced quality of sleep, symptoms of depression, obstipation, and changed behaviour.
(Harriman et al., 2014)	To identify common challenges associated with discontinuing medications and to explore the current deprescribing processes.	Descriptive Quantitative Survey	-Prescriptions written by specialists and other practitioners was a major factor identified that inhibited the commencement of the deprescribing process. Most respondents denied concerns about damaging relationships with this third party, thus leading investigators to believe that their lack of motivation may be due to low confidence of their own deprescribing knowledge and experience. -Based on the location of this study, investigators suggested that organizational challenges could be addressed by a multidisciplinary approach to deprescribing. -Half of respondents said they do not use a systematic approach or

			evidence-based method when discontinuing medications.
(Hermanowski et al., 2016)	-To explore and identify who is responsible for discontinuing and deprescribing drugs initially prescribed in critical care/pre-operative assessment clinics/acute pain wards/pain clinics. -To review the concept of deprescribing, as well as to identify the barriers and enablers when it comes to this process.	Editorial	-Top three barriers include: (1) attitudes and behaviours of physicians and other healthcare professionals, as well as patients and caregivers, (2) lack of education and knowledge, (3) lack of guidelines and treatment algorithms. -Clinicians and other members of the healthcare multidisciplinary team should receive education about the value of deprescribing on the individual, their circle of caregivers, and the overall healthcare economy. -This education curriculum should also include the correct use of opioids and their potential dangers (i.e. withdrawal, addiction, etc.), as well as the dangers associated with poor prescribing practice.
(Hugtenburg et al., 2013)	-To summarize the definitions and classifications of adherence with medication, as well as types of nonadherence. -To discuss the interventions available to improve adherence of medications.	Review Article	-Strong patient-provider communication is crucial among those who take many medications. -Presents information about medication management programs that aid in deprescribing processes (e.g. one study enabled healthcare professionals to carry out a counselling program for individual patients, with the following tools: (1) evaluating medications and their drug-related problems, (2) patient counselling and coaching, (3) patient education and information, (4) patient reminder technologies, (5) and communication tools.

(ISMP, 2018)	-To explore the use of validated processes and tools with regards to deprescribing in a clinical practice setting. -To explore the essentials of safe deprescribing practices.	ISMP Canada Safety Bulletin Article	-Deprescribing must be completed in partnership with the patient. -This process should begin with the healthcare professional carefully evaluating the patient's medication with the patient and caregiver present. -The monitoring process of the patient should include the family/caregivers, and a variety of healthcare professionals. -The NO TEARS tool is discussed and an example of how to implement this is provided through a real-life incident.
(Jassar, 2016)	To explore how nurse practitioners (NPs) can best promote the reduction of causes and outcomes of problematic polypharmacy.	Literature Review and Critical Appraisal	-In a nursing home setting, NPs should consider conducting medication reviews on admission, after a transfer back from acute care, and during resident status changes. At the same time, pharmacists should conduct these medication reviews every six months after admission. -NPs are encouraged to use effective screening criteria online (i.e. Beers Criteria, MedStopper Application, Ontario Pharmacy Research Collaboration guidelines) in order to ensure that current medications are safe and appropriate for continued use. -NPs should encourage RNs and LPNs to complete scales (i.e. MDS-ADL) to assess the functional status of their patients. -NPs should arrange for a wide range of educational opportunities, including interaction, informal, face-to-face methods, lectures, bi-annual

			seminars, and web-based activities. -Yearly competency checklists should be administered and completed by all staff to maintain updated on best practices.
(Lim et al., 2010)	-To identify the degree of knowledge that registered nurses (RNs) have with regards to medication management, and adverse drug reactions (ADRs). -To increase polypharmacy knowledge and prevent ADRs in the older adult population.	Quasi-experimental design	-Effective medication management involves the following skillset: safe administration, vigilant assessment and monitoring of the residents. -Effective medication management involves the following knowledge: pharmacokinetics, pharmacodynamics, ADRs, and risks of drug interactions. -Nurses scored significantly higher after receiving the education session and self-directed earning package. -Results show that not all RNs were aware of some of this fundamental knowledge, and that there is room for improvement when it comes to education.
(B. C. Liu & Chi, 2013)	To explore the interaction of polypharmacy and medication review on loneliness.	Letter to the Editor	-Individuals who used more than five medications were more likely to develop negative feelings, a sense of emptiness, and emotional loneliness. -There are indications that medication reviews likely serve as a psychosocial buffer in older adults who experience polypharmacy. -Better social support can lead to better health outcomes in these individuals. -Providing medication reviews may provide the older adults the strength to manage their stress and feelings of negativity.

			-Healthcare professionals should work together with the patient and their caregivers to promote a sense of hope and strength.
(L. M. Liu, 2014)	To explore the challenges associated with the process of deprescribing. -To describe the ethical and clinical uncertainties that exist when it comes to polypharmacy.	Scholarly Report	-Healthcare professionals need to consider the follow factors when it comes to deprescribing: care goals, disease progression trajectory, and life expectancy of specific patients. -Observations relating to polypharmacy within older adult patients should be discussed with all healthcare professionals in contact with that individual, especially nurses. -A team-based approach is necessary and should include physicians, nurse practitioners, pharmacists, and nurses. -Discontinuing medication should involve proper planning, communication, and coordination between all nursing home staff. -Nurses can be especially useful in monitoring the patient during the entire process, keeping an eye out of potentially harmful side effects and dealing with them accordingly. -One major benefit of deprescribing is the reduction of pharmacy costs, which will decrease healthcare expenditures overall.
(Lueras & Lueras, 2017)	To suggest a practical nursing home deprescribing approach.	Systematic review and experimental design	-It is feasible to start a deprescribing guideline in a nursing home setting with a primary focus on PRN medication as Phase 1 of the entire process. -A team-based approach is recommended for the discontinuation, as well as continuous staff training.

(Maher et al., 2013)	-To provide information about prevalence rates and the types of medication primarily taken by older adults who experience polypharmacy.-To explore the evidence gathered from RCTs and how polypharmacy can be improved among this population.	Review Article of RCTs that addressed polypharmacy in older adults	-There are numerous consequences of polypharmacy, including: increased healthcare costs, adverse drug events, drug interactions, medication non-adherence, functional status, cognitive impairment, falls, urinary incontinence, and nutrition. -Main analysis of RCTs demonstrate that deprescribing works. -Interventions used included: medication reviews, patient and caregiver counselling, sharing medication information with all healthcare providers including pharmacists, MDs, and nurses, multidisciplinary involvement, and case conferences between healthcare providers. -Best overall intervention/approach for tackling polypharmacy is inter-professional and often includes a pharmacist.
(McGrath et al., 2017)	To explain and present a 4-step plan that can be used to safely deprescribe medication in older adults.	Research Paper (Applied Evidence)	-Four steps include: (1) "brown bag" review of all patient medication, (2) discuss process with the patient and their caregiver/family, (3) deprescribe medications, (4) create a follow-up plan. -Nurses and other care providers can greatly influence the patient and their beliefs/misconceptions about ceasing medication. -Using a team-based and step approach to deprescribe medication will help hesitant patients by providing education and complete support.
(Midão et al., 2018)	To evaluate the prevalence and factors associated with polypharmacy	Cross-sectional Analysis	-Polypharmacy is highly prevalent in Europe and should be considered a multifactorial condition associated with the

	in the older adult population across 17 European countries.		following: age, gender, physical activity, limitations in ADLs, quality of life, depression, number of chronic diseases, difficulties taking medication, years of education, and shortage of money. -It is important to identify these variables in each individual. -Interventions and healthcare professionals should consider how and why these variables link to polypharmacy, and address some of these factors wherever possible.
(Mortazavi et al., 2016)	To identify the defintions of polypharmacy in older adult populations.	Systematic Review	-There are several subgroups depending on the following: specialty field of medicine, type of study participant, and settings. -The heterogeneity presents potential differences in the definition of polypharmacy, and therefore, its recommended course of treatment.
(Page et al., 2016)	To explore the various methods used for deprescribing since 2000.	Review Article	-Compared abrupt vs. tapered cessation of medication. -High risk medications were often identified via a Delphi panel of multidisciplinary healthcare professionals. -The following deprescribing aids were deemed helpful to the process: (1) Garfinkel Good Palliative Geriatric Practice (GPGP), (2) Deprescribing algorithm, (3) Confirm, Estimate, Assess, Sort, Eliminate (CEASE), (4) 10-Step Algorithm, (5) Prescribing Optimization Method (POM), (6) (Assess, Review, Minimize, Optimize, Reassess (ARMOR), (7) Medication Appropriateness index (MAI). -Ongoing medication reviews are necessary to ensure that each

			medication continues to be beneficial for the older adult.
(Reeve et al., 2014)	To review and develop a patient-centred deprescribing process.	Review Article	-Steps of the patient-centred deprescribing process include: (1) complete a medication history, (2) identify potentially inappropriate medications, (3) determine whether medication can be ceased and prioritizing medication, (4) plan and initiate medication withdrawal, (5) monitoring, support, and documentation. -The patient should feel supported by the healthcare professional throughout the duration of deprescribing. -Other kinds of support that should be included are education of lifestyle measures as necessary (i.e. avoiding certain foods or OTC medications), advice on coping strategies when it comes to targeted or controlled medication, or further referral to other counselling sessions.
(Reeve & Wiese, 2013)	To explore the ways in which deprescribing may improve medication adherence	Review Article	-Possible ways of improving adherence through deprescribing include: reduction in medications being taken, reduced financial costs, improved medication knowledge, encouraging self-monitoring, resolution of adverse drug reactions. -Some points to keep in mind: (1) if one healthcare professional deems a medication as inappropriate, the patient may come to believe that others are also not necessary and either experiment with those medications or have a lack of trust towards the prescribing healthcare professional, (2) if the process works, some individuals

			may feel the need to stop or taper off other, potentially useful medications. -To combat these problems, it is essential to have good communication between healthcare professionals conducting or observing the deprescribing process.
(Salazar et al., 2007)	-Explores the potential consequences of polypharmacy in older adults.-Addresses the common medication administration errors that can occur.	Review Article	-Continuous, expanding knowledge of pharmacodynamics and pharmacokinetics is necessary as drugs are constantly evolving and being introduced onto the market. -Poor training and inadequate knowledge in geriatric medication management may lead to inappropriate polypharmacy. -Multidisciplinary work is vital.
(Shah & Hajjar, 2012)	To describe various factors associated with polypharmacy (including epidemiology, consequences of polypharmacy, and clinical approaches to improving polypharmacy).	Review Article	-Extensive medical histories should be conducted and include prescription and OTC medications, as well as any food/drink health-related items. -Items such as anti-acids, vitamins, and supplements are often excluded from these lists, even though they should not be. -Two helpful techniques include SAIL and TIDE. -Providers should be able to weigh between the risks and benefits of all types of health-related medication.
(Thompson & Farrell, 2013)	To examine the different evidence involving deprescribing.	Review Article	-A focused evidence-based guide to deprescribing is necessary. -Based on the research conducted, there is a lack of long-term prospective evidence that shows deprescribing results in a clinically relevant manner.

(Turner et al., 2016)	To use the nominal group technique to generate rank factors that various healthcare professionals deem as most important when it comes to deciding whether or not to deprescribe a medication.	Qualitative Research Study using a Nominal Group Technique	-No two groups had the same priorities when it came to deprescribing. -Nurses ranked the following factors as most important: (1) GP receptivity to deprescribing, and (2) nurses' ability to advocate for residents. -Other important factors ranked as important by other healthcare professional groups include: (1) evidence for deprescribing, (2) communication with family/resident, (3) clinical appropriateness of therapy, (4) identifying residents' goals of care, (5) wellbeing of resident, (6) continuity of nursing staff, (7) adequacy of medical and medication history.
(Wang et al., 2015)	To identify effects of polypharmacy on clinical outcomes among older adult patients over the age of 80.	Prospective Cohort Study	-Of all participants, 70% presented polypharmacy after the 3-year period. -Healthcare providers tend to follow guidelines derived from clinical trials that do not include older adults or individuals who have multiple chronic conditions. -Guidelines should include multimorbidity and polypharmacy.