

Home Medicines Review (HMR): Concept, Components and Relevance to Geriatric Care – A Review

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Abstract: The geriatric population is highly susceptible to medication-related problems due to age-associated physiological changes, multiple chronic illnesses, polypharmacy, poor medication adherence, inappropriate self-medication, and unsafe medication storage practices at home. Home Medicines Review (HMR) is a structured, pharmacist-led service that has been successfully implemented in countries such as Australia to optimize medication use and improve health outcomes. However, such a formalized service is not routinely practiced in India. This review aims to describe the concept, principles, objectives, and process of Home Medicines Review and its relationship with medication adherence, polypharmacy, self-medication, and medication storage in elderly patients. The review also highlights the relevance of HMR in the Indian healthcare context and emphasizes the need for implementing pharmacist-led homebased medication review services to enhance geriatric pharmaceutical care.

Keywords: Home Medicines Review, Geriatric Population, Medication Adherence, Polypharmacy, Self-Medication, Medication Storage.

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I. INTRODUCTION

Older adults are particularly vulnerable to medication-related problems due to age-related physiological changes, multiple comorbidities, polypharmacy, self-medication practices, and inappropriate medication storage at home. Home Medicines Review (HMR) is an established, pharmacist-led service developed in countries such as Australia to optimize medication use, improve adherence, and reduce drug-related problems (DRPs). Although HMR has demonstrated significant benefits internationally, it is not formally implemented or funded in India, highlighting an important gap in geriatric pharmaceutical care. This review summarizes the concept, process, and components of HMR and discusses its relevance to the Indian healthcare context.

II. HOME MEDICINES REVIEW (HMR)

➤ Definition

Home Medicines Review (HMR) is a collaborative healthcare service provided by general practitioners and pharmacists, aimed at maximizing therapeutic benefits and minimizing medication-related problems through a structured review of medicines used by patients in their home environment. According to Australian guidelines, HMR adopts a multidisciplinary, patient-centered approach to ensure safe, effective, and appropriate use of medicines.

➤ Aim of HMR

The primary aims of HMR include:

- Ensuring safe, effective, and appropriate use of medicines by identifying and resolving medication-related problems

- Improving patient quality of life and health outcomes through individualized medication advice
- Enhancing patient and healthcare professional understanding of medicines

- Promoting collaborative working relationships among healthcare providers
- Providing accurate medicine-related information to patients and caregivers

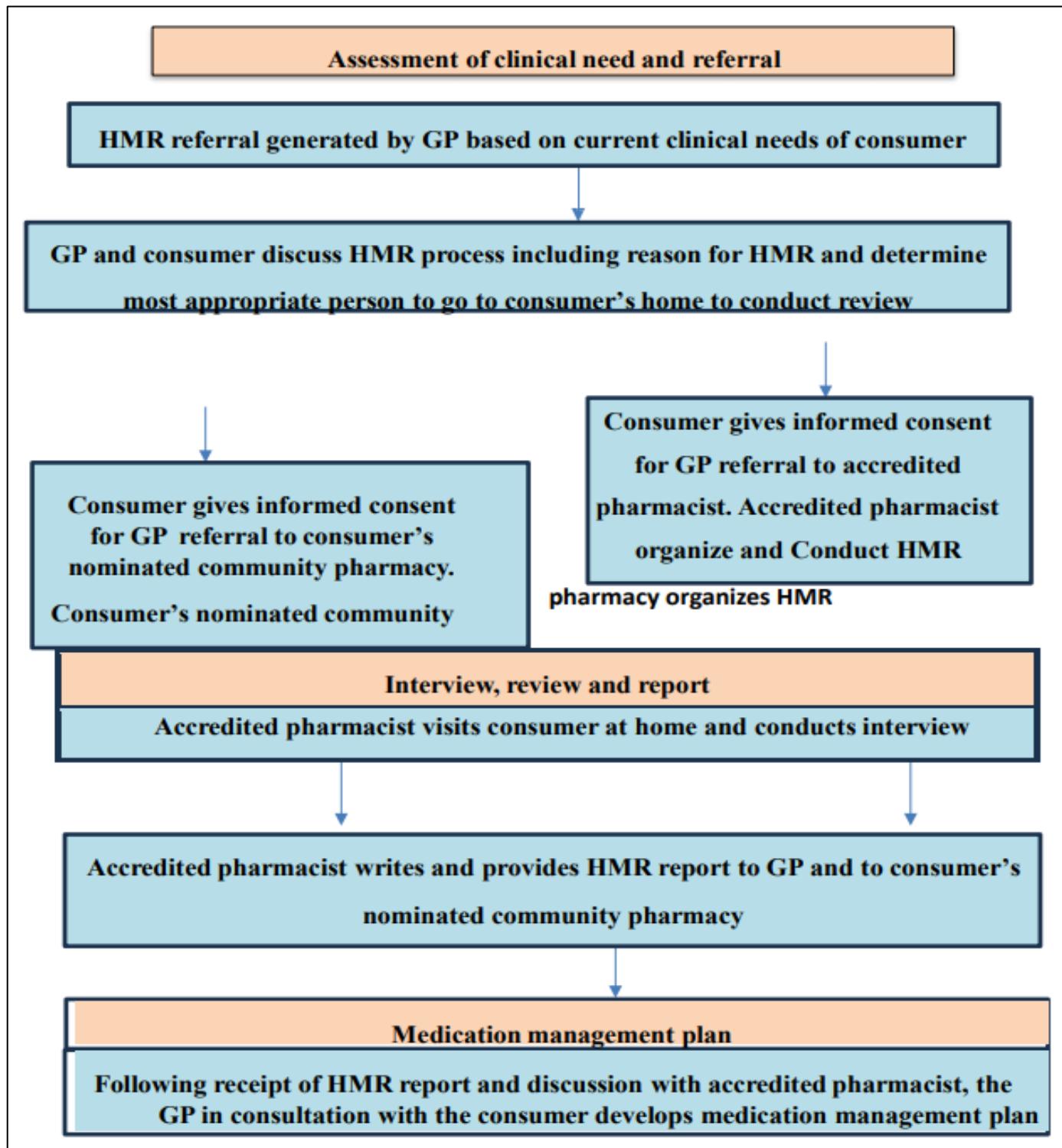


Fig 1 HMR flowchart

➤ *Purpose of HMR Guidelines*

HMR guidelines are designed to support pharmacists in delivering high-quality medication review services. They emphasize professional judgment, ethical practice, documentation, and collaboration with prescribers. These

guidelines also clarify professional responsibilities and encourage consistency in service delivery. Importantly, they are advisory rather than prescriptive and must be applied alongside professional practice standards.

➤ *Scope of HMR*

HMR services primarily target patients living in the community. The guidelines focus on best-practice implementation rather than clinical decision-making and expect pharmacists to comply with relevant legal and professional requirements. Pharmacists are required to assess risks, document significant decisions, and ensure that medication use is safe and appropriate.

➤ *Principles of HMR*

The core principle of HMR is direct interaction between the pharmacist and the patient within the home setting. This interaction enables:

- Assessment of actual medication use, including non-prescription and complementary medicines
- Identification of cultural, economic, physical, and literacy-related barriers
- Understanding patient beliefs, motivations, and adherence behaviors
- Detection of actual and potential drug-related problems

The pharmacist communicates findings and recommendations to the general practitioner, who collaborates with the patient to develop an actionable medication management plan.

➤ *Objectives of HMR*

The key objectives of HMR are:

- Identification and resolution of drug-related problems
- Optimization of medication therapy
- Improvement of medication adherence
- Enhancement of patient safety
- Reduction of preventable adverse drug events

➤ *Process of HMR*

The HMR process generally involves:

- Referral by a general practitioner
- Comprehensive review of medication and medical history
- Home visit and patient interview by an accredited pharmacist
- Identification of medication-related problems
- Preparation of a structured report with recommendations
- Implementation of changes through GP-patient consultation

III. MEDICATION ADHERENCE

Medication adherence is the degree to which individuals follow prescribed medication regimens as recommended by healthcare professionals. Among the geriatric population, adherence plays a vital role in achieving optimal therapeutic outcomes, as older adults frequently manage multiple chronic illnesses that require long-term drug therapy. Factors such as age-related physiological changes, polypharmacy, cognitive impairment, physical limitations, and socioeconomic challenges contribute to an increased risk of non-adherence in elderly patients. Inadequate adherence in

this population can lead to disease progression, medication-related complications, and increased healthcare burden.

➤ *Morisky Medication Adherence Scale (MMAS-8)*

The Morisky Medication Adherence Scale-8 (MMAS-8) is a standardized and validated self-administered questionnaire widely employed to assess adherence to prescribed medications. It is particularly useful in geriatric care as it identifies both intentional and unintentional patterns of non-adherence, such as forgetfulness, misunderstanding of dosing instructions, or concerns about adverse effects. Based on established scoring criteria, the MMAS-8 classifies patients into high, moderate, or low adherence categories, facilitating individualized interventions for elderly patients.

➤ *Applications, Reliability, and Limitations*

MMAS-8 is commonly utilized in clinical practice and research to evaluate adherence, guide therapeutic decision-making, and monitor treatment outcomes, especially in older adults receiving chronic therapy. The scale has demonstrated satisfactory reliability and internal consistency in multiple studies. However, as a self-reported measure, it may be influenced by recall errors and social desirability bias, which can be more pronounced in geriatric individuals with cognitive or sensory impairments. Furthermore, variations in language, literacy, and cultural background should be carefully considered when applying the MMAS-8 in diverse populations, including the elderly population in India.

IV. POLYPHARMACY

Polypharmacy is a major concern in the geriatric population, as advancing age is commonly accompanied by multiple chronic health conditions that require ongoing pharmacological management. Older adults experience physiological changes that alter drug absorption, metabolism, and elimination, thereby increasing their susceptibility to medication-related harm. As a result, the presence of multiple medications in elderly patients demands special attention to ensure safe and effective therapy.

➤ *Definition*

Polypharmacy refers to the regular use of five or more medications simultaneously, including prescribed drugs, over-the-counter products, and traditional or complementary medicines. In geriatric patients, polypharmacy often arises as a consequence of multimorbidity; however, without regular evaluation, it may increase the likelihood of inappropriate medication use.

➤ *Clinical Consequences*

In elderly individuals, polypharmacy is associated with a higher risk of adverse drug reactions, drug-drug interactions, falls, functional decline, hospital admissions, and mortality. Age-related reductions in physiological reserve further amplify these risks. Although deprescribing initiatives may successfully reduce the overall number of medications, their influence on long-term clinical outcomes in the geriatric population remains inconsistent across studies.

➤ Causes

The development of polypharmacy in older adults is driven by several factors, including the coexistence of multiple diseases, involvement of multiple healthcare providers, and poor coordination of care. Additional contributors include self-medication practices, widespread use of traditional remedies, misinterpretation of adverse drug effects as new illnesses, and the absence of structured medication review processes. These challenges are particularly evident in the Indian healthcare system, where limited access to integrated geriatric and pharmaceutical care increases the risk of inappropriate polypharmacy.

V. SELF-MEDICATION

Self-medication is defined as the use of medicinal products to manage perceived health problems without advice or prescription from a healthcare professional. This practice holds particular significance in the geriatric population, as older adults commonly experience recurrent symptoms, limited mobility, and difficulties in accessing formal healthcare services. Age-associated physiological changes, the presence of multiple chronic conditions, and concurrent use of several medications increase the risk of harmful outcomes in elderly individuals who self-medicate. In India, the easy availability of over-the-counter drugs, antibiotics, and traditional remedies further promotes unsupervised medicine use. Among older adults, such practices may lead to inappropriate drug selection, adverse reactions, clinically relevant drug interactions, delayed diagnosis of serious illnesses, and compromised treatment outcomes, underscoring the importance of structured medication counselling and regular medication review for geriatric patients.

VI. MEDICATION STORAGE

Correct storage of medicines is essential to ensure their quality, safety, and therapeutic performance throughout the period of use. This issue is highly relevant to the geriatric population, as older adults often manage multiple medications and may face challenges such as reduced vision, cognitive impairment, or limited physical ability, which can affect safe storage practices. Research has shown that medicines are frequently kept in unsuitable areas of the home, including kitchens and bathrooms, where exposure to moisture, heat, and environmental contaminants may reduce drug stability. Within geriatric care, Home Medication Review (HMR) serves as an effective approach to evaluate household storage conditions, identify expired or improperly stored medicines, and provide tailored education to older patients, thereby promoting safer and more effective medication use.

VII. GERIATRIC POPULATION

Geriatric care focuses on individuals aged 60–65 years and above. Age-related physiological changes, cognitive decline, and social factors increase susceptibility to medication-related problems, underscoring the need for structured medication review services.

VIII. STATUS OF HOME MEDICINES REVIEW IN INDIA

Despite strong evidence supporting HMR internationally, India does not have a formally structured, government-funded Home Medicines Review program.

Medication review activities are largely hospital-based, fragmented, or informal, with limited pharmacist involvement at the community level. Given the growing geriatric population, high prevalence of polypharmacy, self-medication, and poor adherence, adapting HMR-like services in India could significantly improve medication safety and therapeutic outcomes.

IX. CONCLUSION

Home Medicines Review is an effective, patient-centered intervention that addresses key challenges in geriatric pharmacotherapy, including polypharmacy, medication nonadherence, unsafe storage, and self-medication. Although well-established in countries like Australia, HMR remains underutilized in India. Integration of pharmacist-led home medication review services into the Indian healthcare system represents a promising strategy to enhance geriatric care and reduce preventable medication-related harm.

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