

# Elder care: The need for interprofessional collaboration between Family Physicians, Clinical Pharmacists, and Physiotherapists in home-based primary care teams

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## ABSTRACT

**Background:** Elderly patients with pain and falls are commonly seen in family practice. **Aims:** (1) Highlight the role of a physiotherapist in the primary care team; (2) Discuss the collaboration between a family physician clinical pharmacist dyad and the physiotherapist that emerged; and (3) Share practice tools that emerged from our teamwork. **Settings and Design:** Home Based Primary Care Practice (a core component of family practice). We have described our home based primary care practice model in earlier publications. Our model utilizes a team based approach to address the prevention of diseases, promotion of health, provision of care for acute and chronic conditions (especially concurrent multi morbidity), and delivery of rehabilitation services in the home setting. **Methods and Materials:** Selection of three cases from our daily practice. Reflective discussion and learning towards arriving at novel insights and improving our care model. **Results:** Case discussion from the perspectives of the family physician, clinical pharmacist, and physiotherapist reveal important insights on the roles, responsibilities, benefits and tensions. A process flow to facilitate team based care is also outlined along with a referral communication tool. **Conclusion:** For our population of the elderly with falls and pain, there was a need for a physiotherapist, as part of the team, instead of a mere referral service. This was felt because of the growing needs of patients, multiple gaps in communication with external referrals, mismatch of values and approaches, and missed opportunities for high quality care. This enhances access, optimizes clinical outcomes, delivers patient centred care, reduces unnecessary hospitalizations, and avoids catastrophic and unwarranted costs. The paper highlights the critical need for interprofessional collaboration between family physicians, clinical pharmacists and Physiotherapist in elder care.

**Keywords:** Elder care, home based primary care, inter-professional collaboration, physiotherapy, team-based care

## Introduction

As per the National Census of 2011, the elderly population in India was 103 million, that accounted for 8.6% of the total population. Growing at around 3% annually, the number of elderly will rise to 319 million by 2050. According to the World

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Health Organization (WHO) global report on falls prevention, 28%–35% of people aged 65 years and above fall each year, and this proportion increases with age and frailty.<sup>[1]</sup> In India, this is estimated to be about 25%.<sup>[2]</sup> The prevalence of adults over 60 years living with chronic pain is estimated to be between 25–50% in India.<sup>[3,4]</sup>

Elderly patients with falls and pain are commonly seen in family practice and constitute a major part of the patient load. Pain (both physical and emotional) limits their daily activity resulting in muscle weakness and wasting. Patients develop a fear of movement and falls, which makes them lose confidence and independence, often resulting in depression. The ongoing COVID-19 pandemic has disrupted the routine of many elderly, forcing them to be homebound.

Understanding and treating pain in the elderly poses multiple challenges. Difficulties in describing the pain, limitations in functional activities of daily life, presence of comorbidities, difficulty in prioritizing conditions, and physical frailty are some challenges. Pain-relieving medications help in relieving pain temporarily; however, they come with their own side effects, which further contribute to the complexity of care.

In our home-based primary care team, we use the 8 C's of family practice: Care available at First Contact, which is Continuous; Comprehensive; Coordinated; Contextual; Complex; Community Based, and that incorporates **Community Voice**. Family Practice is unique in that it recognizes the central role of the patient's context and the interplay of family dynamics, social relationships, cultural background, and economics in the causation and presentation of any illness and the response to any given treatment.<sup>[5,6]</sup> Home-Based Primary Care is a core component of family practice that enshrines the principles of family practice with an emphasis on the elderly and palliative care.<sup>[7]</sup> According to Garcia-Baqueiro Merino, palliative care is about maximizing a person's quality of life by effective symptom control, psychological and spiritual support in a socially meaningful way, while truly allowing someone to be themselves at a difficult time. For effective symptom control, physiotherapy is critical. It "promotes the active participation of individuals in society, through the development, maintenance, and restoration of their health, mobility, physical activity, and function throughout their entire life."<sup>[8]</sup>

For our population of the elderly with falls and pain, there was a need for a physiotherapist, as part of the team, instead of a mere referral service. This was felt because of the growing needs of patients, multiple gaps in communication with external referrals, mismatch of values and approaches, and missed opportunities for high-quality care. Hence, it was natural for the home-based primary care team to include a qualified physiotherapist as an integral team member.

In this paper, using a selection of three cases from our daily practice, we:(1) highlight the role of a physiotherapist in the

primary care team; (2) discuss the collaboration between a family physician-clinical pharmacist dyad and the physiotherapist that emerged; and (3) share practice tools that emerged from our teamwork.

## Subjects and Methods

### Practice context

AVEKSHA is a Home-Based Primary care program that started as a Family Physician-Clinical Pharmacist (AA-PS) dyad (FP-CP) co-led team in Bangalore, India. The program was initiated in April 2019 to help individuals and families receive quality primary care in the comfort of their homes.

While people of all age groups are seen, the majority of patients seeking care are people who are homebound. They are particularly likely to be elderly, have mobility challenges, suffer from multiple comorbidities, are frail, and are without adequate support to navigate the fragmented healthcare ecosystem.

The core values of AVEKSHA-Home-Based Primary Care Program are: 1) Empathy; 2) Person/Family-Centric Care; 3) Team-Based Care; 4) Holistic Care; 5) Humility; 6) Listening to and Incorporating Community Voice; and 7) Continuous Learning.

### Case selection

These stories were selected from our daily practice and discussed for internal learning and quality improvement. The purpose of selecting them was to share novel insights into a team-based approach and improve our model to facilitate smooth transitions of care within the multidisciplinary team while taking into account the prevalent ecosystem for community-centred care. These cases were not submitted to the Institutional Ethics Committee for approval, but formal permission and support through written documentation from the individuals and primary care givers was obtained.

## Results

**Case 1:** Mrs. R, a 91-year-old woman, was active and independent in her daily activities. She was living by herself in a split-level house. She walked with the help of a walking stick (tripod stick). She had hypertension and diabetes. She had a history of a fracture of the right hip that had healed five years ago.

One day, her family physician (Dr. BCR) received a phone call and was told that she had been experiencing intense back pain since that morning. She had been unable to get up from bed and was suffering from severe constipation. There was no history of a fall or a recent injury. Based on Dr. BCR's experience spanning several decades in practice, he suspected a possible fracture of the spine and advised an X-ray of her spine. He also ordered an enema for constipation.

The X-ray showed a compression fracture of L2-3. It was surmised that the likely cause for the fracture was straining hard to pass stool. Knowing that this could be managed adequately at home, he requested a multidisciplinary home care team which included a physiotherapist to visit the patient and family at home.

When the home care team consisting of an FP-CP dyad visited, the patient was in bed and complained of constipation, abdominal bloating, and pain in the left lateral hip and sacral regions for the past five days. She was noted to be dehydrated, and the pain was assessed to 8/10 on the pain scale. She also appeared depressed as she had lost hope of getting back to her ambulatory routine.

After discussing with the family, given her physical condition and advanced age, it was decided to manage her adequate hydration and complete bed rest for six weeks. She was also started on a weak opioid (tramadol + acetaminophen) at night for pain relief, laxatives for constipation, three doses of injection Vitamin D 6 lakh IM once every ten days (three doses), and calcium supplements. The family was taught to give a light back massage with coconut oil to prevent bedsores and use an air bed if needed.

Four weeks later, during a review visit, she was noted to be better. She was able to sit up but had pain upon prolonged sitting (6/10 pain score). She wanted to walk, but it was not possible, as muscles were stiff and weak. At this point, the family was introduced to our team physiotherapist (PT) to help address these issues with musculoskeletal pain and facilitate ambulation.

### Assessment and intervention by the physiotherapist (PT)

On the assessment by Dr. CA (PT), there was muscle wasting of her lower limb with reduced muscle tone. There was slight ankle swelling and Grade I tenderness over her knee joint. On examination of her sensory system, the Meissner's corpuscles receptor (involved in the superficial sensation of light touch localization), along with barognosis and two-point discrimination (involved in the cortical sensation of weight and ability to perceive two points applied to the skin) 3 were impaired. She had minimal voluntary control of her lower limb, and even her reflexes were diminished.

She was started on treatment using an exercise prescription during which the patient's family was trained regarding the exercises (frequency, intensity, time, and type).

The patient was advised to do:

1. Straight leg raise (SLR): Ten repetitions/day (two sets of five repetitions each), with a hold of ten seconds and 20 seconds rest after each repetition.
2. Pelvic bridging (Pelvic lift): Eight repetitions/day (two sets of five repetitions each), with a hold of five seconds and 20 seconds rest after each repetition.
3. Hip Abduction: Ten repetitions/day (two sets of five repetitions each), with a hold of ten seconds and 20 seconds rest after each repetition.

4. Sit to Stand: Five repetitions/day, a caregiver was suggested to make her stand once every four hours.

The family was instructed to gradually overload the muscles, like making her walk with the help of a walker to the restroom twice a day and after three weeks to the living room.

At the time of writing this report (18 weeks from diagnosis of compression fractures), Mrs. R was able to walk with a tripod stick and able to independently perform her daily activities, with a score of 84 out of 126 in the Functional Independence Measurement Scale.<sup>[9]</sup>

**Case 2:** Mrs. J, an 89-year-old lady from Kolkata, had a history of diabetes, hypertension, asthma, and had undergone coronary angioplasty in the past. She moved to her daughter's place in Bangalore in February 2020, just before the COVID-19 lockdown. During lockdown, she had to be hospitalized on account of breathlessness and collapse. In the hospital, coronary angioplasty was repeated. When the FP-CP dyad visited, they noted that post-hospitalisation, the patient had lost her confidence and was now completely bed-bound. Additionally, the cognitive loss was noted. The daughter expressed that she wanted her mother to be up and about. Following the conversation, the family was introduced to our physiotherapist to help her mother to be mobile.

### Assessment and intervention by the physiotherapist

On examination, overstimulated nociception (pain sensation) and diminished touch perception, impaired graphesthesia, 2-point discrimination, and kinesthesia were noted. There was muscle weakness of the lower limbs along with reduced muscle tone, coarse crepitus over her knee joints, and grade 2 tenderness in both quadriceps. The patient was able to complete only the first four activities of the Berg Balance Scale.<sup>[10]</sup>

Dr. CA (PT) started by doing mild exercises in bed, like SLR, Quads and Gluteal setting, half SLR, Pelvic Bridging and Hip Abduction. After this, the PT made her sit at the edge of the bed and made her do Leg Raise and Seated March. Subsequently, she was made to stand five times a day and then slowly made to walk over the next few sessions. Gradually, she was made to walk front and back and work on weight shifts as well as her compensatory strategy, after which she was able to stand with support and walk five steps with support.

After six months of the intervention, the patient was able to sit and stand and also reported improved quality of life. Consistent counseling and empathetic support to the family by the team helped them cope better and the patient to recover faster.

**Case 3:** Mrs. S, a 66-year-old female, known diabetic, hypertensive, with varicose veins and osteoarthritis. She live alone in an apartment, and her daughter and son-in-law live on the second floor. Her husband had passed away a year previously. Mrs. S had a failing vision. The architecture of the home was

not on one level, with steps to enter and exit the washroom leading to frequent falls. Mrs. S has a helper who is available for 12 hours a day.

The relationship dynamics between the daughter and Mrs. S were strained, and there seemed to be a lack of support for Mrs. S. Over the course of the COVID-19 pandemic, Mrs. S had a fall and became bound to her bed and chair, and struggled to walk due to fear and lack of support.

The FP-CP dyad, who knew the patient well, referred the patient to Dr. CA (PT) and had an internal discussion about her situation.

### Assessment and intervention by physiotherapist

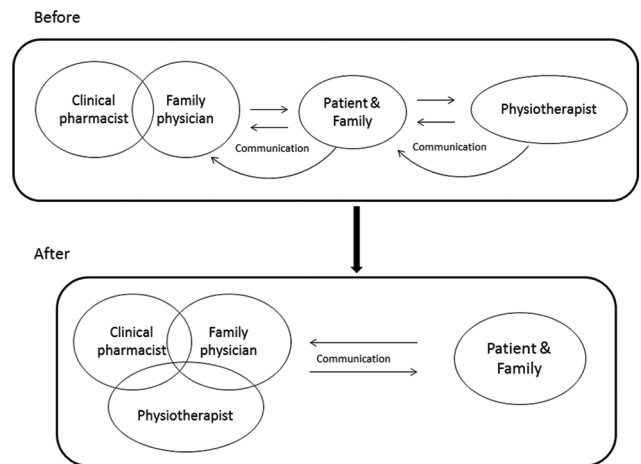
On the first visit to the patient's home, the physiotherapist used multiple assessment forms, including the Functional Independence Measure and Berg Balance Scale.

The pain was noted to be gradual in onset, increasing during movement and at night. The patient had grade 2 tenderness over her left lower limb along with active trigger points, which were limiting her activity and increasing her pain. She was experiencing heaviness over her left lower limb and numbness in both hands. Diminished Pacinian corpuscles receptor (superficial sensation with the ability to perceive pressure on the skin surface), touch (superficial sensation with ability to perceive the tactile touch input), graphesthesia (cortical sensation with ability to perceive to recognize letters, numbers, or designs traced on the skin), and 2-point discrimination sensation (cortical sensation with ability to perceive the two points applied to the skin simultaneously)<sup>[11]</sup> Her left lower limb was weaker than her right lower limb.

The Physiotherapist (PT) started treating her with trigger point release, stretches, and Balance Rehabilitation (Trigger point release for the Quadriceps, Iliotibial band (ITB), Gracilis, and Adductor Magnus along with stretches of Hamstrings, ITB, Quadriceps, and Adductors and Balance Rehabilitation). By the end of 10 sessions over a few weeks, she was able to stand independently and take four steps without support, and her pain and heaviness reduced gradually. By the end of 20 sessions, she was able to walk with minimal support and was able to sit independently and stand without support for 30 seconds.

## Discussion

In this paper, we, as a team of practicing family physicians, a clinical pharmacist, and a physiotherapist who work together as a home-based primary care team, have shared three stories from our daily practice. We use these stories to reflect on our own practice context and the context in which our patients experience challenges related to musculoskeletal problems compounded by old age, frailty, concurrent multimorbidity, polypharmacy, limited mobility, and being homebound. This paper is particularly significant because it adds to the very limited



**Figure 1:** Evolution of the multidisciplinary model of care collaboration over time with the inclusion of the Physiotherapist (PT) to the FP-CP dyad led home-based primary care team

literature on the roles played and collaboration between family physicians, clinical pharmacists, and physiotherapists that emerge in multidisciplinary home care teams.

### Inter-professional collaboration between the family physician - Clinical pharmacist dyad and the physiotherapist: process, outcomes, and family dynamics

*Continuity of care.* Although family physicians often ask patients to go to a physiotherapist for their condition, few physicians check in with their patients on their progress. This fragmented care leads to a gap in the continuity of care. Figure 1 shows the conceptual evolution of the multidisciplinary model of care over time with the inclusion of the Physiotherapist (PT) to the FP-CP dyad-led home-based primary care team. Figure 2 shows the summary of the home-based care workflow, enhanced by physiotherapy, followed by the team.

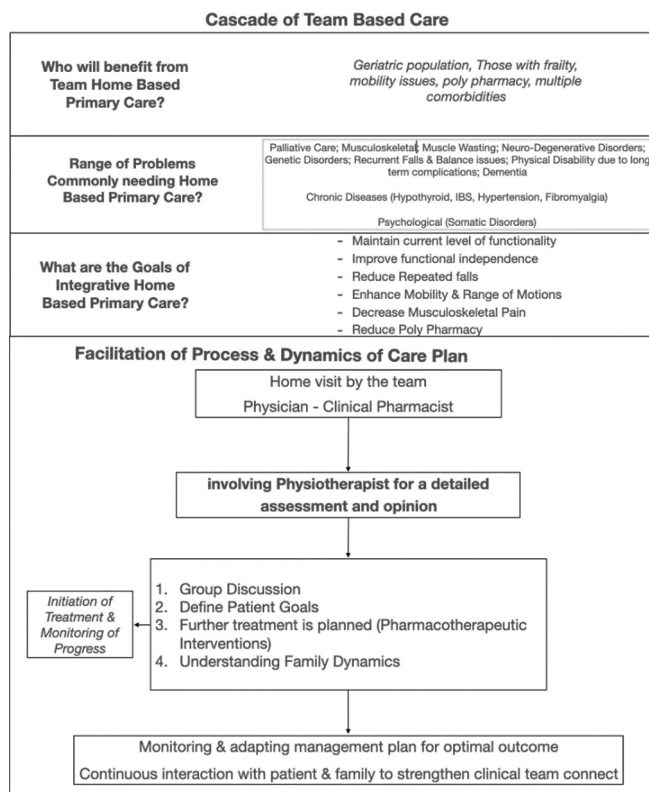
In case 1 - the family physician (FP) and clinical pharmacist (CP) functioned as a dyad. After they determined the pain points of the patient and family, they initiated a referral to the physiotherapist (PT) using a referral form (accompanied by a phone call). Figure 3 shows the referral form developed and used in our practice. This form contains the basic details of the patient along with her short and long-term goals. These goals had been arrived at along with the patient and family.

The physiotherapist (PT) then visited the patient and reviewed the form with them. After the visit, the physiotherapist, family physician, and clinical pharmacist had a detailed internal discussion about the condition of the patient, affordability of care, family support, physician goals and explained the physiotherapy diagnosis, assessment, and physiotherapy management plan. There was a mutual agreement that aligned with the expectations of the family and patient.



**Table 1: Interprofessional collaboration between physician, pharmacist and physiotherapist**

Family Physician	Clinical Pharmacist	Physiotherapist
Roles and responsibilities	Family Physician: 1) Conduct a thorough investigation, provide counseling and comprehensive care; 2) Promote preventive and curative person-centred care; 3) Advanced Pain management; 4) Coordinate care with the referral networks; 5) Provide Holistic non-judgmental care; 6) Understand the various interplay of dynamics for a better outcome Clinical Pharmacist: 1) Optimise and individualise medications and care plans; 2) Co-lead the team, working along with the doctor and nurse practitioner (if present); 3) Capacity building; 4) Regulating the use of medications (Opioids and Antibiotics) Physiotherapist: 1) Conduct a thorough evaluation; 2) Connect with the concerned physician and collaborate to draw an optimal therapeutic plan for the patient; 3) Promote preventive and curative person-centred care; 4) Advanced Pain management; 5) Suggest modification of house in when required	
Benefits	Interprofessional collaboration Minimise unnecessary interventions (Diagnostics, Prescription, & other health services) Training and mentoring to form dyads for growth (e.g., FP-CP dyad)	
Tensions	Overlapping of professional responsibilities Overlapping of response to patient's condition Varying levels of confidence to push forth for further treatment in certain frail individuals among team members Dynamics of Patient & Family goals Self-Medications Leading to untoward effects Agreeing to disagree within the team	



**Figure 2:** Represents the process flow of team based care

The family was a bit hesitant about the need for physiotherapy initially. Here, the FP played a crucial role in counselling and navigating the family dynamics. Given the family's trust in their FP, a shared understanding was forged. This led to a significantly smoother collaboration process. Weekly meetings were held to check on the condition of the patient. After four months of physiotherapy, the family physician and clinical pharmacist (FP-CP dyad) reviewed the patient and found substantial improvement in movement, functional independence, and measurably enhanced quality of life.

Physiotherapy Referral Form	
Patient Name: Mrs. R	Age: 91 years
Gender: Female	Date of Referral: DD/MM/YYYY
Diagnosis: L3-L4 Compression Fracture	
Morbidity: HTN, DM	
Medication: (Currently on) Ultracet, Laxatives, Inj Vit D 6ml	
Short term Goal: Improve her Balance Improve her ADL Reduce the muscular pain	
Long term Goal: Reduce falls Strengthen the muscle and maintain flexibility	
Signature & Contact Details of Referring Doctor:	

**Figure 3:** Referral form used by the physicians to refer patients

*Factors that improve team dynamics:* Given the different backgrounds of the physician, pharmacist, and physiotherapist, it is not unusual for differences to affect the performance of the team as a whole. We have found the following factors play a crucial role in the cohesion of the team: mutual respect, open-mindedness, non-hierarchical and shared decision-making, consistent internal and external communication.

Table 1 shows the elements of inter-professional collaboration between physicians, pharmacists, and physiotherapists. It also describes shared roles, benefits, learnings, and tensions in teamwork and team-based care approach. Figure 2 shows the process flow that has emerged in our practice through inter-professional collaboration and teamwork.

## Conclusion

Home-Based Primary Care is a core component of family practice that enshrines the principles of family practice with an emphasis on the elderly and palliative care. For effective symptom

management, physiotherapy is critical, particularly for the elderly. In this article, we describe a team-based approach to prevent falls, reduce pain, promote health, provide care for acute and chronic conditions (especially concurrent multi-morbidity), and deliver rehabilitation in the home setting with the inclusion of a qualified physiotherapist. We have found that this enhanced team for home-based care improves access, optimizes clinical outcomes, delivers patient-centred care, reduces unnecessary hospitalization, and avoids catastrophic and unwarranted costs. We have also found that inter-professional clinical teams that invest in developing shared values, communicate with open-mindedness and mutual respect, and engage in non-hierarchical decision making, deliver better care that enhances the quality of life.

### Key Messages

Home-Based Primary Care is a core component of family practice that enshrines the principles of family practice. Physiotherapy is critical for effective symptom management in the elderly. Inter-professional clinical teams need to invest in developing values, better communication, and mutual respect to deliver care.

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### Conflicts of interest

There are no conflicts of interest.

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