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# Multiple chronic conditions: the need for integrated secondary care

M. Verhoeff\*, O.M. Meijer-Smit<sup>2</sup>, S.E.J.A. de Rooij<sup>3</sup>, B.C. van Munster<sup>1,4</sup>

<sup>1</sup>Department of Internal Medicine/Geriatrics, University Centre of Geriatric Medicine, University Medical Centre of Groningen, Groningen, the Netherlands; <sup>2</sup>Department of Internal Medicine, Zaans Medical Centre, Zaandam, the Netherlands; <sup>3</sup>Medical School Twente, Medical Spectrum Twente, Enschede, the Netherlands; <sup>4</sup>Department of Geriatrics, Gelre Hospitals, Apeldoorn, the Netherlands.

\*Corresponding author: m.verhoeff@umcg.nl

## SUMMARY

Current hospital-level care is “mostly disease-specific and monodisciplinary-oriented”. These three case reports show different journeys that patients with multiple chronic conditions experienced in Dutch secondary outpatient care, and aim to demonstrate why an integrated care approach might be beneficial for this group of patients.

## KEYWORDS

Hospital-level care, multimorbidity, multiple chronic conditions, integrated care, secondary care

## INTRODUCTION

With the aging population, the prevalence of patients with multimorbidity or multiple chronic conditions (MCC) is expected to rise.<sup>1,2</sup> This could have consequences for the current healthcare system: patients with MCC use more healthcare resources than patients with a single condition: they have more contact with healthcare providers; they are prone to polypharmacy (simultaneous use of  $\geq 5$  medications); and they have a higher risk of hospitalisation and complications.<sup>3-6</sup> For healthcare providers as well as for patients, keeping a real-time overview of appointments, recommendations, diagnostics, and current medication might be difficult and time-consuming. As a result, the provided care might be insufficient.<sup>7</sup> In addition, current hospital-level care is “mostly disease- or organ-specific and monodisciplinary-oriented”.<sup>1</sup> There are multiple programs that recommend an integrated care approach for patients with MCC, however the implementation and efficacy still fall short.<sup>1,8</sup>

### What was known on this topic?

The current secondary care organization appears to be insufficient for patients with multiple chronic conditions who visit multiple hospital physicians. Integrated care is viewed as a potential solution, but methods to implement this approach in secondary care are scarce.

### What does this add?

The creation of an individualized management plan by an appointed care professional could be a method to implement a more integrated care approach. Moreover, it aims to stress the importance of coordinating and tailoring care for these patients by presenting their individual, secondary care journeys.

In daily clinical practice, the need for a tailor-made, integrated approach is becoming more urgent, and the following case reports aim to illustrate why.<sup>1</sup> The last two cases also intend to show how an individualized management plan by an appointed care professional might be a method to achieve more integrated secondary care.

## CASE PRESENTATION

### Case 1

An 81-year-old male patient, with a history of mixed dementia (Alzheimer/vascular), an ischemic stroke and a moderate-severe valvular aortic stenosis (AS), suffered from acute vision loss of the left eye and visited the ophthalmologist and rheumatologist in September 2017. Because of an elevated erythrocyte sedimentation rate level, temporal arteritis was considered (although the

echo of the arteria temporalis was negative); a biopsy was performed and 60 mg prednisone was pragmatically started. As a consequence, his glucose levels started fluctuating, and the prednisone dosage was decreased by half. Temporal arteritis was excluded based on the biopsy and the diagnosis Non-Arteritic Anterior Ischemic Optic Neuropathy (NAION) was made. The rheumatologist recommended quick reduction of prednisone. However, this was accidentally not executed. One week after the last rheumatology consultation, the patient was admitted to the internal medicine department for a blood transfusion, analysis of anaemia with black stool, and dysregulated diabetes. A colonoscopy showed a cecum carcinoma.

For assessment of frailty in light of this new diagnosis, the internist referred the patient to the geriatrician. The geriatrician concluded that the patient was frail, based on the pre-existing cognitive disorder, moderate functional level, and moderate-severe AS. The frailty and high risks of invasive treatments were discussed. At first, the patient and his family members had different treatment preferences, so the geriatrician informed the general practitioner and advised to discuss the situation with the family. Two days later, the patient and his family visited the surgeon and they unanimously chose to defer surgery and to start with palliative radiotherapy.

During the palliative phase, a transthoracic echocardiogram was performed. The ophthalmologist also diagnosed ocular hypertension during a check-up, started pressure reduction treatment, and requested that the general practitioner optimize blood pressure and glucose levels. In March 2018, the patient moved to hospice care.

### Case 2

We report the case of an 80-year-old female patient, with a history of more than 30 treatments at the pain clinic (for arthrosis and chronic back pain due to a prior hernia surgery); chronic, low-dose prednisone use for acute febrile neutrophilic dermatosis since 2008; and intrinsic asthma with recurrent exacerbations since 2013.

In 2015, gradual decline started on several physical health domains and contact with care providers increased. The gastroenterologist performed a colonoscopy for anaemia and found arteriovenous malformations, which were treated with argon plasma coagulation (APC). A gastroenterologist referred the patient to an internist because of an elevated M-protein, who diagnosed her with multiple myeloma. During follow-up, the internist diagnosed an auto-immune haemolytic anaemia and increased the prednisone dosage. Two weeks later, the gastroenterologist performed another colonoscopy with APC because of recurring blood loss. This was complicated by a cecum perforation for which she received surgery. Postoperatively, she was readmitted twice with an exacerbation of her asthma. After three months, she

fell, due to muscle weakness, broke her hip, and received a surgical hip repair. Afterwards, she was readmitted with another exacerbation of her asthma, and the cardiologist diagnosed a valvular AS.

Following this complicated course, the general practitioner referred the patient to the geriatrician for a comprehensive assessment and coordination of care. The patient's main complaints were pain, dyspnoea, fatigue, and loneliness, and she was using 14 medications. The geriatrician consulted all physicians about their diagnostic/treatment plans. The gastroenterologist, anaesthesiologist, cardiologist, and orthopaedic surgeon decided to delay more diagnostics/treatment/check-ups because of the risks and lack of results; the haematologist planned periodical blood tests that could be performed by the general practitioner; the ophthalmology and pulmonology check-ups were evaluated and coordinated. Several medications were changed. The geriatrician advised psychological guidance for coping with physical decline. After six months, the patient's secondary care could be transferred to the general practitioner.

### Case 3

A 77-year-old female patient had been consulting a rheumatologist for gout and rheumatoid arthritis; an internist for recurrent erysipelas, diabetes mellitus (DM), and renal function deterioration; and a gastroenterologist for follow-up of a Side-Branch Intraductal Papillary Mucinous Neoplasm of the pancreas (SB-IPMN).

In January 2018, she visited a dermatologist because of itching, which had possibly started after switching insulin analogues. The dermatologist diagnosed asteatotic eczema, influenced by anaemia, uraemia, and DM and prescribed an ointment and a corticosteroid cream. In February, she visited the internist at the emergency department, because of acute redness of both lower legs and pain in the left upper leg and groin. She was diagnosed with cellulitis, received an antibiotics prescription and went home. The following day, she visited the internist again; earlier, she had been referred by an acting general practitioner to evaluate whether her fatigue, weight loss, and itching could be paraneoplastic. The internist ordered an abdominal ultrasound and thoracic X-ray to exclude lymphoma, and concluded that the itching might be medically induced. The internist also referred her to the neurologist because of muscle weakness of the left leg.

At this point, the general practitioner referred the patient to the geriatrician for a comprehensive assessment and coordination of care, because of the multitude of physicians and polypharmacy. The itching and functional decline also caused a sleep disorder and anxiety, and her informal caregivers were overburdened. The pharmacologist advised to stop medication by trial-and-error to investigate their effect on the itching. The geriatrician advised psychological

treatment and consulted the other involved physicians: the dermatologist ended the follow-up; the referral to the neurologist was cancelled and the general practitioner agreed to coordinate the follow-up with the internist and rheumatologist. The patient was referred to rehabilitation care to relieve the burden on the informal caregivers since the itching was not completely abrogated.

## DISCUSSION

The three cases presented here are examples of journeys that patients with MCC can experience while receiving secondary care. These case reports aim to show that during a patient's journey, it can become difficult for both the patient with MCC and the involved physicians to maintain an overview. All patients had a history of MCC and experienced causal or synergistic morbidity, causing the number of involved physicians and contacts with care providers to increase.<sup>9</sup> The treatment of MCC might become complicated at some point, for example, when there is another new, acute condition.<sup>10</sup> Moreover, the treatment by one specialist might interact with other diseases or medication prescribed by another specialist.<sup>1</sup> However, it is a common situation that every hospital physician only carries out the diagnostics and treatments within their own area of expertise;<sup>1</sup> the patient with MCC is expected to keep an overview of their care. Yet, with increasing numbers of involved care providers and complexity, this task can become increasingly demanding.<sup>11</sup> These case reports try to illustrate that patients with MCC might need a different, more integrated care approach. Care fragmentation and low continuity of care have been associated with overuse of medical procedures.<sup>12</sup> By designing an individualized management plan and discussing this with involved physicians, the geriatricians in the last two cases seemed to prevent unnecessary diagnostics, treatments, and check-ups. Moreover, early discussions about care planning have shown to enhance patient satisfaction and improve quality of care.<sup>13</sup> Individual care planning, comprehensive assessment, and care coordination are important elements of an integrated approach for patients with MCC.<sup>8,14</sup> The United Kingdom's National Institute for Health and Care Excellence guideline about this topic recommends the design of an individualized management plan, yet it has left implementation the responsibility of local organizations.<sup>8</sup> In the World Health Organization's report, several models of integrated care are described: individual models, group- and disease-specific models, and population-based models.<sup>14</sup> Individual models focus on high-risk patients, for example, with multiple conditions, through individual care plans and case-management. In the last two case reports, the geriatrician performed a comprehensive assessment,

and coordinated and managed care for these older adults. However, as Tinetti, Fried and Boyd (2012) described in their article: depending on patient characteristics and type and complexity of the health problems, an individual, integrated approach could also be delivered by other care providers or specialists.<sup>15</sup> Recognizing the need for this approach could be a starting point for exploring implementation options with all disciplines involved, and stimulate the development and realization of group-specific or even population-based integrated care models within the hospital.

In conclusion, these case reports aimed to illustrate why an integrated approach in secondary care can be beneficial for patients with MCC. A starting point and method of implementation could be comprehensive assessment and the design of an individualized management plan by an appointed care professional in the hospital, in cooperation with the general practitioner and other physicians involved in treatment. The appointed care professional should be able to manage and coordinate care and to perform a comprehensive assessment of the patient's care and needs. General practitioners are an obvious candidate, but other care providers or specialists with the right competencies might be able to manage this as well. Future research should further elucidate which groups of patients with MCC might benefit from which integrated care approach, how to identify these groups, and which methods could be used to further incorporate integrated care in the current hospital system.

## DISCLOSURES

All authors declare no conflicts of interest. No funding or financial support was received.

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