Multiple Chronic Conditions: The Global State

What is multiple chronic conditions (MCC)?

Multiple chronic conditions refers to the presence of two or more chronic conditions in a single patient.

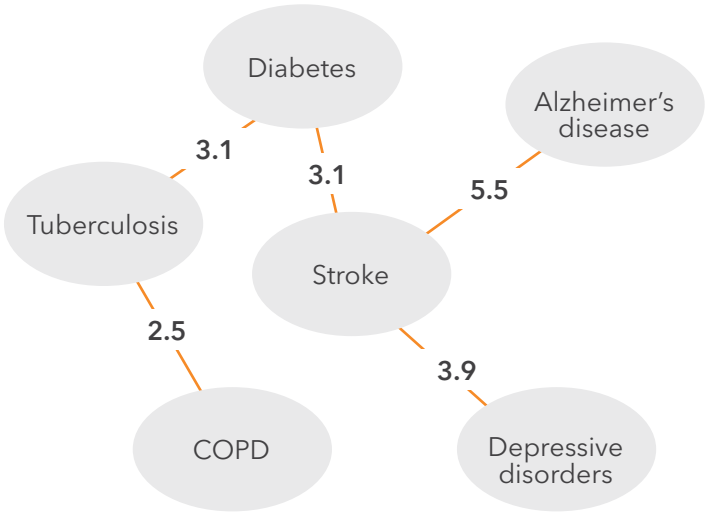
Most common lifestyle risk factors[1]

- High blood pressure
- High total cholesterol
- Smoking
- High fasting glucose
- High body mass index

Relationships between common chronic conditions[2-5]

Certain chronic conditions occur together more frequently due to independently high prevalence rates, common risk factors, or interactions between conditions.[6]

HOW TO READ THIS FIGURE:
Those with diabetes are 3.1 times more likely to have tuberculosis than those without diabetes.



*Odds ratios and relative risks are used in this figure to demonstrate the strength of the relationship between conditions. While some connections are bi-directional, only one direction is included here.

Why is this important?

MCC affects
1 in 3 of all adults[7]
2 in 3 of those 65+[8]

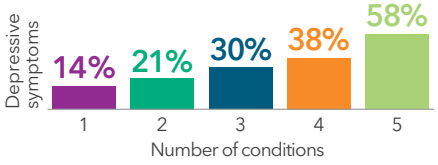
MCC has been associated with older age, undesirable lifestyle factors, and low socioeconomic status[9]

In low-income countries, those with MCC are more likely to suffer from both infectious and non-infectious chronic conditions, making management and treatment complex

WITH EACH ADDITIONAL CHRONIC CONDITION:

Older adults are prescribed as many as **8 MORE** medications[10]

Depressive symptoms increase:[11]



Healthcare costs more than double[12]

In general, medication adherence declines with each additional dose per day:[13]

79% 69% 65% 51%

"She has her bad days and lashes out, which is a big drain on me. She comes first, of course. But I also value my own health. It's a vicious cycle. I need to be healthy to have the energy to look after her, but in looking after her, I often neglect my own health."

Judith, caregiver to her mom, Anne, who has four chronic conditions

What can be done to reduce the impact?

CROSS-CONDITION MANAGEMENT: A patient-centered, holistic approach to care can improve management of MCC, as compared with the current norm of treating conditions individually.

- Innovative **primary care models**, including integrated care across providers to manage different conditions[14]
- Care guidelines to help providers assess and treat MCC patients using **symptom-based algorithms**[15]

MEDICATION REGIMEN SIMPLIFICATION: Manageable dosing can increase medication adherence and control of conditions.[16]

- **Synchronization** of drug dosages
- **Fixed-dose combination** medicines (multiple medications in a single pill)
- **Digital compliance technology** (e.g., pill with sensor that provides adherence data)[17]

TECHNOLOGY-BASED SOLUTIONS: Scientific advancements can make care more accessible and individualized.

- **Telemedicine**, such as remote monitoring, to provide on-demand care[18]
- **Cognitive computing** to derive insights into medication interactions and personalized care[18]

> My life used to be so different. I used to have the energy to leave the house, go to work, see my friends. Now my life revolves around my conditions. And the pain. There is constant pain, both from my conditions themselves and from my medications. And there is no end in sight."
>
> Eric, *who has six chronic conditions*

MCC is an emerging and unaddressed public health issue that is straining the infrastructure of the global healthcare system. It is exponentially increasing costs, and more importantly, taking a toll on individuals and families. As the global population ages, the burden will continue to grow.

While the need is great, there is also significant opportunity to introduce cross-sector solutions that can improve quality of life for patients and caregivers, while also decreasing health costs to individuals and society.

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