

# Persons with multiple chronic conditions and health systems for the future



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# Multimorbidity definition

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- The coexistence of two or more chronic conditions in the same individual



# Prevalence

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- Population over 30 years of age (2000-2021)
  - Global: 37.3%
  - Africa: 28.2%
  - Asia: 35%
  - Europe: 39.2%
  - North America: 43.1%
  - Oceania: 32.5%
  - South America: 45.7%
  - Female 39.4%
  - Male 32.8%

(Chowdhury, Das, Sunna, Beyene, and Hossainc (2023) - Global and regional prevalence of multimorbidity in the adult population in community settings: a systematic review and meta-analysis, eClinicalMedicine, 57, 16 February)



# Prevalence

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- US (2010, panel survey data)
  - 31.5% (total population)
  - Female: 34.7%
  - Male: 28.2%
  - By age group
    - 0-17: 6.8%
    - 18-44: 18%
    - 45-64: 49.1%
    - 65+: 80.1%
  - As percentage of individuals with chronic conditions: 61%

(Gerteis J, Izrael D, Deitz D, LeRoy L, Ricciardi R, Miller T, Basu J. Multiple Chronic Conditions Chartbook. AHRQ Publications No, Q14-0038. Rockville, MD: Agency for Healthcare Research and Quality. April 2014)



# Prevalence

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- Brazil (2019, household survey)
  - 29.5% (population 18+)
  - Female: 35.4%
  - Male: 22.7%
  - By age group
    - 18-39: 12.1%
    - 40-59: 34.1%
    - 60+: 56.5%
  - As percentage of individuals with chronic conditions: 53.6%

(World Bank, 2023)



# Prevalence

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- Colombia (2012-2016, administrative data)
    - 19.7% (all age groups)
    - By age group
      - 0-17: 15.3%
      - 18-59: 33.1%
      - 60+: 51.3%
    - As percentage of individuals with chronic conditions: 56.3%
- (World Bank, 2017)



# Impact on patients

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- Biological impairment
  - Poor mental health; psychological distress
  - Worse functional capacity
  - Higher rates of disability
- Worse clinical outcomes
  - Premature death (1.73 higher risk of death)
  - More hospitalizations and prolonged stays
  - More postoperative complications
  - Polypharmacy: greater likelihood of negative drug interactions
- Decreased quality of life and increased demand for social care and socioeconomic costs due to fragility, dependency, housing problems, social isolation, and economic instability



# Impact on utilization and costs: Brazil

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- 15.3% of patients represent 53% of the expenditures incurred by the Brazilian National Health System (2000-2015)
- Average expenditure (USD PPP)
  - 1 chronic condition: \$12,000
  - 2 or more: \$23,000-\$39,000
- Patient with multimorbidity: 129% increase in expenditure
- Average number of outpatient visits per year
  - 1 chronic condition: 4.3
  - 2 or more: 7.1-12.6
- Average number of hospitalizations per year
  - 1 chronic condition: 0.76
  - 2 or more: 1.21-1.87





# Impact on utilization and costs: Uruguay

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- Patients with 3 or 4 chronic conditions (10.4% of all patients)
  - 23.2% of total cost
  - 14% of hospitalizations
  - 18.3% of outpatient visits
  - 50.5% of expenditures with medications
- Patients with 5 or more chronic conditions (8.2% of all patients)
  - 41.7% of total cost
  - 16.3% of hospitalizations
  - 25.9% of outpatient visits
  - 26.3% of expenditures with medications

(World Bank, 2023)



# Implementing a multimorbidity model of care: Chile

- Reduction in total costs
  - Increase in PHC
    - Increase in medical visits and medications
    - Reduction in emergency care
  - Increase in secondary care
    - Increase in medical and non-medical visits
    - Decrease in medications
  - Reduction in tertiary care
    - Reduction in hospitalizations (0.31 IRR)
- Statistically significant reduction in mortality risk (0.56 OR)



# Building the health system of the future

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- Multimorbidity requires
  - PHC: A primary health care of quality and structured to identify, monitor, and manage these more complex patients
  - Financing: Changes in payment mechanisms (longer visits, team payment, home visits)
  - Pharmaceuticals: An appropriate drug utilization review to address issues related to drug interaction and rational use of medications
  - Integrated care: An integrated health system across levels of care and a well-structured referral system that is able to direct patients to those services that can appropriately deal with their problems
  - HHR: Multidisciplinary team, capacity development, and change of roles (Chile: case manager and “transition” professionals)
  - Information systems: a management and information systems that are able to capture the use of health services, medications, and the flow of patients in the system



# Building the health system of the future

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- Multimorbidity requires
  - Patient stratification
    - Kaiser Permanente pyramid
      - ✓ Case management (5% of patients)
      - ✓ Disease management (15-25% of patients)
      - ✓ Self care support (70-80% of patients)
      - ✓ Health promotion and prevention (general population)
    - Number of chronic conditions (+)
    - Adjusted clinical groups (Johns Hopkins ACG)
    - Frailty
  - A person-centered health system



# Closing message

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- The window of opportunity to change their health systems is rapidly closing in those countries with aging populations

Thank You!