

Burden of Harm in NCD Care

A Patient Safety Perspective

Dr Rajiv Pathni
Advisor, Quality & Patient Safety,
National Health Systems Resource Centre

Towards Harm-Free NCD Care
Putting Patient Safety First





Learning Objectives

- 1 Describe the burden of harm in NCD care.
- 2 Identify patient safety risks across the continuum of care.
- 3 Recognize the impact of financial and health system barriers on patient outcomes.
- 4 Understand the role of patients, caregivers, and digital health in reducing harm.
- 5 Apply key strategies to improve patient safety in NCD care.





Global Scenario



NCDs accounted for 43 million deaths in 2021, which is 75% of non-pandemic related deaths.*

18 million premature NCD deaths occurred before age 70 in 2021; 82% were in LMICs.*



73% of all NCD deaths occur in low- and middle-income countries.*

Cardiovascular diseases accounted for at least 19 million deaths in 2021, followed by cancers (10 million), chronic respiratory diseases (4 million), and diabetes (over 2 million including kidney disease deaths caused by diabetes). *



Over 8 million excess deaths due to poor-quality health systems lead to economic welfare losses of \$6 trillion in 2015 alone.**

Quality gaps in care drive millions of preventable deaths in LMICs. **



5.7 million to 8.4 million deaths are attributed to poor-quality care each year in LMICs. ***



Source: *WHO ([Fact sheets NCD](#))

** [Stanford Medicine News Centre](#)

*** [Crossing the Global Quality Chasm: Improving Health Care Worldwide](#)



Impact of Poor-Quality Care on Health Outcomes

Condition	No. of Diagnoses	No. Untreated (% untreated among diagnosed)*
Hypertension	471.7	326.2 (49.7)
Diabetes mellitus	164.1	55.3 (33.7)
Depression	234.9	90.9 (38.7)
Anxiety	163.9	58.2 (35.5)
Bipolar disorder	19.9	8.1 (40.7)
Schizophrenia	13.2	7.6 (57.9)
Alcohol use disorder	45.2	8.1 (18.0)

Deaths Attributable to Poor-Quality Care*

- 84% of cardiovascular deaths
- 81% of vaccine-preventable disease deaths
- 61% of neonatal deaths
- Approximately 50% of maternal, HIV, TB, and injury-related deaths

Poor-quality care is a major driver of preventable harm, highlighting the need for safer, timely, effective, and patient-centered NCD care.

Source: * [Crossing the Global Quality Chasm: Improving Health Care Worldwide](#)



Indian Scenario

63% of total deaths in India are due to noncommunicable diseases of which 27% are attributed to cardiovascular disease.*

NCDs contributed to 47% of all DALYs.**

Nearly 65% of NCD deaths occurred before age 70, indicating substantial preventable loss of life.**

24% risk of premature deaths from target NCDs (2021)***

11.4% of Indians have diabetes, 35.5% have hypertension and 28.6% have generalised obesity.#

Source: *[WHO Health topic: Hypertension](#)

**[Burden of Non-Communicable Diseases and its Associated Economic Costs in India](#) (Menon et al., 2022)

*** [NCD Disease Progress Monitor 2025](#)

[ICMR-INDIAB national cross-sectional study](#)



NCD Care: a Lifelong Journey



Primary Care	Early detection, screening, diagnosis, and routine management.
Specialist Care	Advanced assessment, treatment planning, and disease-specific interventions.
Hospital Care	Management of acute episodes, complications, and specialized procedures.
Pharmacy	Safe dispensing, medication counselling, adherence support, and medication review.
Home Care	Self-management, medication administration, lifestyle modification, and monitoring.
Follow-up Care	Regular review of treatment effectiveness, adjustment of therapy, and prevention of complications.



Burden of Harm in NCD Care

Clinical Harm

- Premature death
- Disease complications
- Adverse events

Functional Harm

- Disability
- Dependence
- Reduced quality of life

Financial Harm

- High OOPE
- Catastrophic expenditure

System Harm

- Delayed diagnosis
- Fragmented care
- Treatment interruptions



Burden of Harm from Delayed Detection and Diagnosis



Low screening uptake:
Limited participation in routine NCD screening.

Weak referral systems:
Delays in accessing diagnostic and treatment services.

Late presentation:
Patients seek care after symptoms or complications develop.

Missed early diagnosis:
Early signs and risk factors often go unrecognized.



Delayed diagnosis increases morbidity, mortality, and treatment complexity.



Burden of Harm from Poor Disease Control



Awareness-to-control gap:

Large drop-offs between diagnosis, treatment initiation, and disease control.

Poor disease control: Many patients remain uncontrolled despite being diagnosed and treated.

Consequences



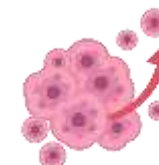
Stroke



Heart Disease



Kidney Disease



Cancer Progression



Avoidable Admissions

Diagnosis alone is insufficient; disease control is the ultimate safety outcome.



Burden of Medication- Related Harm



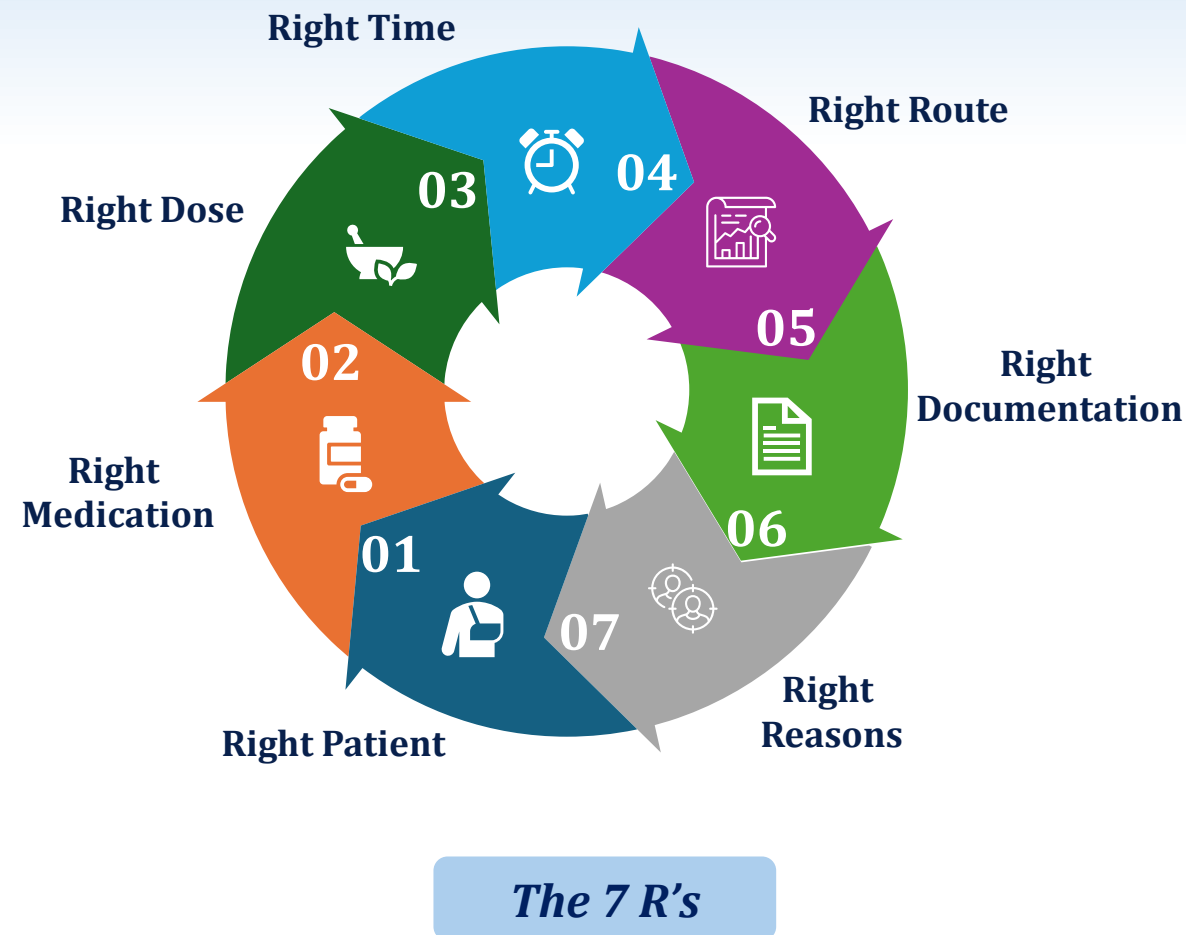
Patients with multimorbidity and continuous complex care needs are particularly vulnerable to medication-related harm across care settings.



Strategies for Safe Prescribing



- **Medication reconciliation** – Verify and update medication lists at every care transition.
- **Evidence-based prescribing** – Prescribe medicines based on the best available clinical evidence.
- **Clinical decision support systems** – Use digital tools to identify and prevent medication errors.
- **Review of allergies and interactions** – Check for allergies and potential drug interactions before prescribing.
- **Deprescribing when appropriate** – Safely discontinue medicines that are unnecessary or potentially harmful.





Burden of Harm from Fragmented Care

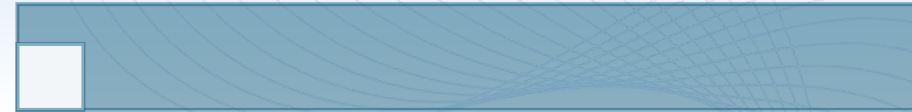


Challenges



- ☐ Weak referrals: Inefficient transfer of patients across levels of care.
- ☐ Poor patient tracking: Limited systems to monitor patient progress.
- ☐ Inadequate follow-up: Gaps in ongoing monitoring and care.
- ☐ Fragmented care: Multiple providers with limited coordination.

Consequences



- ☐ Missed follow-up: Patients are lost along the care pathway.
- ☐ Conflicting treatment plans: Lack of coordination leads to inconsistent care.
- ☐ Duplicate investigations: Repeat tests increase costs and delays.
- ☐ Delayed interventions: Treatment is postponed, increasing the risk of complications.

Continuity failures create cumulative patient harm.



Burden of Financial Harm

- High out-of-pocket spending: Significant financial burden on patients and families.
- Catastrophic expenditure: NCD care often exceeds household financial capacity.
- Private sector dependence: Many patients rely on costlier private healthcare services.

Highest Financial Burden

- Cancer
- Stroke
- Cardiovascular Disease

Consequences

- Delayed Care seeking
- Medication Non-adherence
- Treatment abandonment



Financial toxicity is a patient safety issue.



Health System Drivers of Harm



- Workforce shortages: Insufficient trained healthcare personnel to meet growing NCD care needs.
- Limited diagnostic capacity: Inadequate access to timely and accurate diagnostic services.
- Irregular medicine availability: Frequent stock-outs disrupt continuity of treatment.
- Weak information systems: Poor data management limits patient tracking and outcome monitoring.
- Inadequate public sector capacity: Limited infrastructure and services increase reliance on private care.
- Geographic inequities: Access to quality NCD care varies significantly across regions.

CONSEQUENCES

**Delayed
diagnosis and
treatment**

**Poor disease
monitoring and
control**

**Interrupted
continuity of
care**

**Inequitable
health outcomes
and increased
patient harm**



Ways to Reduce Harm in NCD Care

1

Prevention

Risk factor education
Health promotion

2

Early Detection

Population- based screening
Timely referral

3

Safe Treatment

Standard treatment protocols
Medication safety system

4

Continuity of Care

Patient tracking
Referral management

5

Financial Protection

Insurance coverage
Free medicines & diagnostics

6

Health System Strengthening

Workforce development
Better surveillance & monitoring



NQAS Framework for Reducing Harm in NCD Care



NQAS provides a comprehensive framework to improve quality and patient safety across public health facilities through eight Areas of Concern.

Service Provision

- Strengthen screening, referral, and follow-up systems



Patient Rights

- Empower patients and caregivers
- Improve financial protection



Inputs & Support Services

- Ensure adequate workforce, medicines, diagnostics, and infrastructure



Clinical Services

- Standard treatment protocols
- Medication safety
- Continuity of care



Quality Management

- Clinical audits
- Prescription audits
- Risk management
- Digital health solutions



Outcomes

- Monitor disease control, complications, disability, and mortality





Mapping NCD Harm Across NQAS Domains



BURDEN OF HARM	RELEVANT NQAS DOMAIN
Delayed diagnosis	Service Provision
Missed follow-up	Service Provision
Medication-related harm	Clinical Services
Poor disease control	Clinical Services
Financial hardship	Patient Rights
Workforce shortages	Inputs
Diagnostic gaps	Inputs
Medicine stock-outs	Support Services
Fragmented care	Quality Management
Poor monitoring	Quality Management
Mortality & Disability	Outcomes

Most NCD-related harms can be traced to gaps in one or more NQAS domains.



NQAS Across Different Levels of Healthcare Facilities



AAM Sub Health Centre (Primary Prevention)

- Risk-factor screening
- Community awareness
- Early identification of hypertension, diabetes, and cancers
- Follow-up and referral

PHC / UPHC (Early Diagnosis & Management)

- Screening and confirmation
- Initiation of treatment
- Medication counselling
- Patient education

CHC / SDH (Comprehensive NCD Care)

- Specialist consultations
- Diagnostic services
- Stabilization and referral
- Monitoring disease control

District Hospital & Higher Facilities

- Advanced diagnostics
- Specialized treatment
- Complication management
- Rehabilitation and continuity of care



From coverage to Quality



**100% quality-
certified
Ayushman
Arogya Mandirs
under NQAS by
March 2027**

#Access to care

#Skilled workforce

#Quality of Care

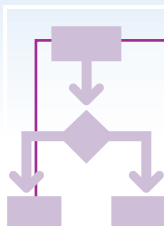
#Universal Health Coverage



Enabling Safer NCD Care Through Patient Engagement and Care Coordination



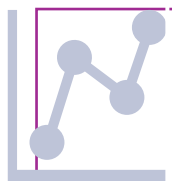
Health literacy and patient education



Shared decision-making and self-management



Medication safety and adherence support



Self-monitoring and early complication recognition



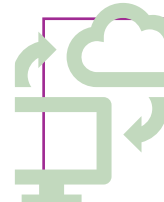
Caregiver engagement and support



Care coordination and continuity of care



Early detection and timely intervention



Digital tools for safer, data-driven care



Call to Action for Healthcare Leaders

Integrate patient safety across NCD programmes by proactively monitoring and reducing harm throughout the continuum of care.

Strengthen health systems through adequate resources and effective care coordination.

Empower patients and caregivers through health literacy, shared decision-making, and self-management support.

Leverage digital health solutions and data-driven insights to improve care coordination, identify risks, and enhance outcomes.

Measure patient safety and outcomes to drive continuous quality improvement.

Prioritize Patient Safety in NCD Care

Strengthen Systems for Safer Care

Empower Patients and Caregivers

Accelerate Digital Transformation

Measure What Matters



Key Takeaways

NCD-related harm extends beyond mortality to disability, treatment-related harm, financial hardship, and poor quality of life.

Patient harm can occur at every stage of the NCD care continuum, from prevention and diagnosis to treatment, follow-up, and long-term management.

Early detection, safe treatment, coordinated follow-up, and digital solutions can prevent many adverse outcomes.

Empowered patients, engaged caregivers, and technology-enabled self-management are critical to safer and more effective NCD care.

Reducing harm requires strong health systems, digital innovation, and patient-centered care approaches that improve continuity, safety, and quality of care.



Thank You