NCD HARD TALKS
DELIVERING ON THE PROMISES

WEBINAR
09 JUNE 2022 | 13-14:30 CEST

Harnessing the power of facility data to achieve global NCD targets

A FOCUS ON FACILITY-BASED PATIENT AND PROGRAMME MONITORING
NCD HARD TALKS
Thank you for joining

- This webinar will be recorded.
- Links to the recording and all slides will be shared.
- Please participate in the discussion by sharing your questions in the Q&A box. Experts are invited to type their answers throughout the session.
- General comments can be shared in the chat box.
- Please be respectful - we are here to learn and exchange ideas.
Agenda

Introductory remarks
Global NCD targets measurement challenges and solutions

**Hard Talk Panel**
- **Systematic approach toward standardized** NCD facility-based patient and programme monitoring
- **Information policy standards** for effective patient and programme monitoring
- **Comprehensive primary health care NCD solution**: building local health workforce capacities for facility-based patient and programme monitoring
- **Integration of NCD service package in the Iranian PHC**, based on electronic health records
- **Simple**: requirements of a pragmatic digital system for driving improvements in large-scale NCD programs

**Moderated discussion / Q&A**
**Closing remarks**
Introductory remarks

Dr Ren Minghui
Assistant Director General, Universal Health Coverage / Communicable and Noncommunicable Diseases, WHO
Welcome

Dr Temo Waqanivalu
Unit Head, WHO NCD Integrated Service Delivery
Global NCD targets measurement challenges and solutions

Leanne Riley
Unit Head, Surveillance, Reporting and Monitoring, Department for NCDs
Harnessing the power of facility data to achieve global NCD targets

Global NCD Targets Measurement Challenges and Solutions

Dr. Bente Mikkelsen
So far, the global response to NCDs is a test we have failed.

SDG target 3.4 on NCDs: The world is off-track.

- Unhealthy diets
- Tobacco use
- Physical inactivity
- Harmful use of alcohol
- Air pollution
- Mental health conditions
- Heart diseases and strokes
- Cancers
- Diabetes
- Chronic respiratory diseases

Only 14/194 countries are on track to reach SDG 3.4 by 2030 for women and 15 for men. The good news is that all countries can still meet the 2030 targets. But the window of opportunity for implementing policies with the highest return on investment is now and closing fast.
The risk of dying from a major NCD between the ages of 30-70 between 2000-2010: Rapid decline mainly due to reductions in cardiovascular and chronic respiratory disease mortality, and tobacco use.

2010-2016: The momentum of change has dwindled since 2010, with annual reductions slowing for the main NCDs.

Only 14 countries are on track today to meet SDG target 3.4 on NCDs.
NCD Services: Lagging behind

No change in service coverage in last two decades

Rapid improvements in coverage of infectious disease in UHC packages since 2000, vs relatively little change on NCDs

Value of index

Primary Healthcare on the road to UHC, 2019 Monitoring Report
1. Accelerate national response based on the understanding of NCDs epidemiology and risk factors and the identified barriers and enablers in countries

2. Prioritize and invest in scale-up the implementation of most impactful and feasible interventions in the national context

3. Ensure timely, reliable and sustained national data on NCD risk factors, diseases and mortality for data driven actions and to strengthen accountability
What we do need to complete the picture

Registries (vital statistics, cause of death)

Population Health surveys (STEPS, GSHS, Tobacco surveys)

NCD governance and policy tracking (NCD CCS)

Facility-based patient and program monitoring
Thanks!

@MikkelsenBente_

Do you have any questions?

mikkelsenb@who.int
Systematic approach toward standardized NCD facility-based patient and programme monitoring

Farshad Farzadfar
Scientist, Surveillance, Reporting and Monitoring, Department for NCDs
Harnessing the power of facility data to achieve global NCD targets

Systematic approach towards standardized NCD facility-based patient and program monitoring

Dr. Farshad Farzadfar
Scientist, SMR Unit, NCD Department, HQ
1. Design Phase:
   - Standardization of the framework, indicators, and their metadata through a systematic and scientific process
   - Development of standardized digital platform for data collection and data visualization
   - Capacity building, consultancy, and supporting of the Member States for the implementation

2. Implementation Phase
   - Policies and governance
   - Implementation
   - Capacities
   - Data quality
   - Data utilization for action
Disease: Hypertension, Diabetes, CRD, Cancers, and (Oral Health)

Used WHO technical packages

Level of services: Limited to Primary Health Care delivery

Type of facility: Limited the scope to the public sector

Type of indicator: No finance indicator

Type of data: Only the data that can be retrieved from the same healthcare facility
Taken steps

• Internal experts’ collaboration to develop the list of the indicators and their metadata
  ▪ Hypertension
  ▪ Diabetes
  ▪ Chronic Respiratory Diseases
  ▪ Cancers

• Design the Delphi method for receiving consensus on the list of the indicators and their metadata
  ▪ Quantitative approach
  ▪ Qualitative approach
  ▪ Systematic review
Technical expert meetings

1. Meeting on Feb 9th, 2022:
   - Inputs: framework, indicators, their metadata, and Delphi questionnaire
   - Outputs: indicators’ scores and comments

2. Follow up meetings on March 1st to 4th, 2022
   - Inputs: Indicators’ scores and comments
   - Outputs: Required Modifications

• Modifying the list of the indicators and their metadata
# NCDs primary care facility-based patient and program monitoring framework

## Programme determinants

<table>
<thead>
<tr>
<th>System resources and management</th>
<th>Early detection and diagnosis</th>
<th>Treatment</th>
<th>Complication assessment</th>
<th>Disease control</th>
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<td>Hypertension and cardiovascular disease</td>
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<td>Breast cancer</td>
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<td>All diseases</td>
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## Service delivery

- **Inputs/Processes**
  - Availability of trained staff
  - Complete and timely reporting
  - Supervision visit

- **Outcomes**
  - Loss to follow-up

## Programme objectives

- **Outcomes**
  - Availability of trained staff
  - Complete and timely reporting
  - Supervision visit

- **Outputs**
  - Early detection and diagnosis
  - Treatments
  - Complication assessment
  - Disease control

### Hypertension and cardiovascular disease

- **System resources and management**
  - Anti-hypertension core medicine availability
  - CVD core medicine availability
  - Functional BPMD availability

- **Early detection and diagnosis**
  - Assessment of CVD risk (aged over 40 years)
  - Hypertension screening as part of routine service
  - Hypertension detection rate from screening

- **Treatment**
  - Diabetes treatment
  - Statin therapy
  - Treatment for CVD
  - Treatment for hypertension

- **Complication assessment**
  - CKD assessment
  - CVD risk assessment (among people with hypertension)

- **Outcomes**
  - Blood pressure control
  - Blood pressure control (follow-up)

### Diabetes

- **System resources and management**
  - Diabetes core medicine availability
  - HbA1c testing availability

- **Early detection and diagnosis**
  - Asthma diagnosis using peak flow measurement
  - COPD diagnosis using peak flow measurement

- **Treatment**
  - Asthma treatment
  - COPD treatment

### Asthma and COPD

- **System resources and management**
  - Asthma core medicine availability
  - COPD core medicine availability
  - Peak flow meter and mouthpiece availability

- **Early detection and diagnosis**
  - Assessment of asthma control
  - Assessment of COPD control rate
  - Asthma core medicine availability
  - COPD core medicine availability

- **Treatment**
  - Asthma treatment
  - COPD treatment

- **Complication assessment**
  - Asthma core medicine availability
  - COPD core medicine availability

### Breast cancer

- **System resources and management**
  - HPV testing availability
  - Pap smear testing availability
  - VIA testing

- **Early detection and diagnosis**
  - Screening with high-performance test
  - Referral for diagnosis

- **Treatment**
  - Referral for diagnosis

### Cervical cancer

- **System resources and management**
  - HPV testing availability

- **Early detection and diagnosis**
  - Screening with high-performance test
  - Referral for diagnosis

### Childhood cancer

- **System resources and management**
  - Availability of trained staff

- **Early detection and diagnosis**
  - Referral for diagnosis

### General cancers

- **System resources and management**
  - Availability of trained staff

- **Early detection and diagnosis**
  - Referral for diagnosis

### All diseases

- **System resources and management**
  - Availability of trained staff

- **Early detection and diagnosis**
  - Referral for diagnosis

- **Treatment**
  - Referral for diagnosis

- **Complication assessment**
  - Referral for diagnosis

- **Disease control**
  - Referral for diagnosis
  - Referral for diagnosis

- **Outcomes**
  - Loss to follow-up
1. **Hypertension:**
   - C1-Availability of anti-hypertensive core medicines
   - C2-Availability of cardiovascular disease core medicines
   - C3-Availability of a functional blood pressure measuring device
   - C4-Assessment of cardiovascular disease risk among people aged over 40 years
   - C5-Blood pressure control among people with hypertension

2. **Diabetes:**
   - C1-Availability of diabetes core medicines
   - C2-Availability of plasma glucose testing
   - C3-Availability of HbA1c testing
   - C4-Glycaemic control among people with diabetes
Product and publications

- NCD facility-based patient and program monitoring framework
- Health facility data analysis module: for NCD managers
- NCD facility-based patient and program monitoring Implementation package
- Facility level complementary questionnaire/package of STEPS survey
- Digital platform
• Coordination with countries for implementation

• Virtual training workshop

• Evaluation package

• Expansion to hospital and tertiary services
Indicators related availability of medicines, device, test, and staff and people in control are crucial in diseases such as HTN, diabetes, CRD

Indicators that concern timeliness and referral pathway are crucial for cancer group

List of medications could vary from one country to another one since it includes minimum set of medications introduced by WHO technical packages

For the sake of consistency across countries, no major modification is possible at country level, which includes title, definition, purpose, numerator and denominator, as well as method of calculation

Minor modifications including report frequency, data users, and disaggregation could vary from a country to another country

Cross sectional indicators due to being easier to understand, and easier to obtain needed data are preferred over cohort based indicators
Next steps

- Evaluate feasibility
- Assess FBPPM impact and outcome on the Global NCDs Targets
- Data quality concerns
  - Facility level survey
  - Linkage with other data source
- Statistical models to compare the results with available most recent population estimates
- Expansion the model to private sector
Information policy standards for effective patient and programme monitoring

Roberta Caixeta
Advisor, NCD Surveillance, Prevention and control, NCD and Mental health department, WHO Regional Office for the Americas
Harnessing the power of facility data to achieve global NCD targets: a focus on facility-based care and programme monitoring

Efforts to improve the availability and quality of healthcare facility data in the Region of the Americas

Roberta Caixeta
Advisor on NCD Surveillance, Prevention and Control
Noncommunicable Diseases and Mental Health Department
Pan American Health Organization
PAHO/WHO interprogrammatic technical working group: Digital Health and NCDs

Department of Noncommunicable Disease and Mental Health – NMH:
Anselm Hennis
Silvana Luciani
Pedro Orduñez
Roberta Caixeta
Daniel Otzoy

Department of Evidence and Intelligence for Health - EIH
Sebastian García-Saisó
Marcelo D’Agostino
Myrna Marti
Daniel Doane
The logical structure: Global Monitoring Framework & Policies and Interventions

IMPACT INDICATOR
NCD Premature Mortality

PERFORMANCE INDICATOR
- 30% reduction
- 10% reduction
- 30% reduction
- 10% reduction
- 25% reduction
- 80% meds & tech availability
- 50% drug therapy & counselling

PROGRESS INDICATOR
1. NCD targets
2. Mortality system
3. Surveys
4. NCD Plan
5a. Taxes
5b. Smoke-free environments
5c. Health warnings
5d. TAPS bans
5e. Media campaign
6a. Availability
6b. Advertising restrictions
6c. Taxes
7a. Salt policies
7b. Trans-fats policies
7c. Children marketing
7d. Breastmilk substitute
8. Physical Activity guidelines
9. NCD CVDs
10. Premature Mortality

Technical Packages, Tools, Plans & a legally binding Treaty

GSHS
GTSS
FCTC
SAFE
SHAKE
HEARTS
mPower
Replace
Active

NCDs: Non-Communicable Diseases, NCD: Noncommunicable diseases, CVDs: Cardiovascular Diseases
The power of healthcare facility data to achieve global NCD targets

Save and improve quality of life

1. Death/premature death

2. Risk Factors/Disease Management

3. Policies and Interventions (WHO Best Buys)

How can healthcare facility data help countries to achieve the global NCD targets?

- Monitor the continuity and quality of care
- Improve diagnosis and adherence to treatment
- Improve quality of care of those people living with more than 1 condition (multimorbidity)

People-centered healthcare

Requires an information system with a people-centered approach instead focusing the data collection on individual disease/condition - interoperability
The power of health facility data to achieve global NCD targets

Key features to consider when implementing healthcare facility and program monitoring tools:

Data policy/governance constraints:

- **National authority** with responsibility for decision-making on data and standards.
- **Policies** related to data **collection, use and dissemination**:
  - Protection of personal health information.
  - Mandatory use of data standards and reporting.
- **Policies and SOPs** related to **information management**:
  - Establish the responsibilities for collection, processing, and data analysis.
  - Data quality framework and processes.
- **Capacity building** and personnel training plans.

Key data standards:

- Leveraging current standards for **interoperability** (e.g. HL7/FHIR).
- Establishment of **data dictionaries** (definitions of individual data elements).
- **Indicator definitions** aligned with both national and international standards.
Regional Efforts: Digital Health Transformation
Opportunity to improve the facility-based care and programme monitoring
Health care facility data and monitoring programs
PAHO/WHO Initiative – Regional repository on Digital Public Goods

- Map the needs and maturity level of the health information system (IS4H) – scale up approaches (from paper-based to electronic tools).
- Assessment of the regulatory frameworks available in countries and development of tool to guide the preparation of regulatory acts/legislation on Digital Health (including Electronic Health Records/Monitoring health care tools).
- Inventory/identify certified tools available to be used to monitor NCDs at the primary health care level.
- Dissemination/adaptation of the WHO set of standard indicators developed for health care facility.
- Self-management tools available to improve disease management by PLWNCD.

Digital public goods must include open-source software, standards, algorithms, data, applications, and content designed with the appropriate architecture and licensing. These attributes should allow to be scaled to diverse populations and contexts, and to be implemented with the appropriated local adaptations.
Thank you!

caxetro@paho.org
Comprehensive primary health care
NCD solution: building local health workforce capacities for facility-based patient and programme monitoring

M.A. Balasubramanya

Advisor, Community Processes and Comprehensive Primary Health Care in National Health System Resource Centre, Ministry of Health and Family Welfare, India
Using a Digital Platform to Enhance Community-based Primary Health Services In India

Govt. of India’s CPHC NCD IT System – Designing and Implementing an Effective NCD patient and Programme monitoring

Dr.M.A.Balasubramanya
Advisor, Community Processes and Comprehensive Primary Health Care
Ministry of Health and Family Welfare, Govt of India

June 2022
Indian Context

Rising burden of NCDs

Epidemiological Transition

Contribution of major disease groups to total deaths in India, 1990 and 2016

- Communicable, Maternal, Neonatal & Nutritional Diseases: 8.5% in 1990 vs 10.7% in 2016
- Non-communicable Diseases: 37.9% in 1990 vs 27.5% in 2016
- Injuries: 53.6% in 1990 vs 61.8% in 2016

63% Of deaths caused by NCDs

24% Of men and 21% women suffer from hypertension*

*N: Elevated blood pressure (Systolic ≥140 mm of Hg and/or Diastolic ≥90 mm of Hg) or taking medicine to control blood pressure - National Family Health Survey 2019-21

National Health Policy – 2017

- Change from very selective to comprehensive primary health care package
- Up to two-thirds or more of financial resources to be spent on primary care
- Extensive deployment of digital tools for improving the efficiency and outcome of the healthcare system.
- Inclusive partnerships –

Integrated health information system - Ayushman Bharat Digital Mission (ABDM) - Enabling Digital Healthcare for all
Leveraging digital health for two-way systemic linkages between various levels of care viz., primary, secondary and tertiary.

A Robust IT system is of they key reforms for transformation of primary health facilities (SHC, PHC) to AB-HWCs.
CPHC NCD Objectives

- **Individual:** Continuum of Care
  - Every individual is counted and followed up from enrolment to treatment and management over time

- **Care Providers:** Productivity & Quality
  - Standardizing care quality, task-shifting

- **Health Officials:** Executing at Scale
  - Providing timely, quality data down to village level for program managers and decision makers
  - Dashboards, analytics. Interoperability

**CPHC NCD IT System** - Ministry of Health & Family Welfare, Govt of India

- Suite of 6 apps powered by a Platform designed to enable smooth delivery of services

- **231 mn** people digitally enrolled
- **58 mn** over age of 30 screened
- **1,00,000+** Individuals trained (Data as 30 May'22)
Application screenshots for each stage

- **Enrolment**
  - Health record portability enabled by unique Health ID
  - Beneficiary can walk into any facility; health provider can search & access health record with latest patient status visibility
  - SMS sent to beneficiaries - Reminder for preventive screening, Annual Re-screening
SMS to mobilize beneficiaries

- Reminder for preventive screening
- Reminder for Annual Re-screening
- Reminder to complete referral visit
- Proactive communication with beneficiaries
- Improved follow adherence and continuum of care
- Improved awareness of NCD and HWC services

Dear Anita

ID no. 12-3456-7891-6543

Your annual free screening for Diabetes is due on 15-12-2021. Please visit your nearest Ayushman Bharat Health and Wellness center or any government health center to complete your screening. Kindly ignore if already done.

Thank you - National NCD Program
Dashboards for data driven Program Monitoring

**Screening Coverage vs Target Population**

Data insights through **dashboards** enable health officials to **plan and track performance** against targets.

**User-friendly interface** with multiple filter options for data analysis, Drill Down till lowest monitoring catchment level.

**CPHC NCD Dashboard** helps to analyze trends of **Continuum of Care** and identify the unreached population through treatment and follow up.
## Challenges and Solutions-Human Resources

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<thead>
<tr>
<th>Challenges</th>
<th>Solutions</th>
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<tr>
<td><strong>1. Human Resource issues</strong></td>
<td><strong>App-based</strong></td>
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<tr>
<td>a. Perceived increased work-load</td>
<td>✓ <strong>User-friendly Design</strong> - Participative design, Intuitive layouts, minimal data entry, simple language</td>
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<td>b. Front line workers</td>
<td>✓ Easy tracking of clients - Creation of ABHA* number with. QR code</td>
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<tr>
<td>i. Inadequate digital literacy amongst Field Level Functionaries (ASHAs, ANMs);</td>
<td>✓ <strong>SMS reminders</strong> to beneficiaries ease the work of field level functionaries to make in-person home-visits.</td>
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<td>ii. Language preferences</td>
<td>✓ Apps for <strong>Community health workers</strong> operate in offline mode</td>
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<tr>
<td>iii. Terrain of work with poor internet connectivity</td>
<td>✓ CPHC –NCD system supported in <strong>11+ languages</strong> Training support in vernacular languages</td>
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<tr>
<td>c. Medical professionals</td>
<td>✓ Suggestive treatment protocols for faster decision</td>
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<tr>
<td>i. Poor adherence to technology</td>
<td>✓ User level Dashboard for better planning and self monitoring</td>
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<td>✓ Peer support</td>
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<td><strong>Training and support</strong></td>
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<td></td>
<td>✓ Cascade training and tiered support</td>
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<td>✓ Innovative learning mechanisms</td>
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Cascade Field Training & Tiered Support Models

- A robust training process tailored for low digital literacy and technology acceptance by users.
- Cascade model of training - sustainable pool of trainers.
- 1,00,000 + health workers & doctors trained.
- Support mechanism is a well-structured SOP driven, 3-tiered system with an escalation matrix.

Cascade Training Model

Support & Escalation structure
Challenges and Solutions-Human Resources

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<td><strong>1. Infrastructure</strong></td>
<td><strong>App-based</strong></td>
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<tr>
<td>• Inadequate IT hardware</td>
<td>✓ Dedicated NHM funds for IT</td>
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<td>• Poor internet penetration in</td>
<td>infrastructure(smartphone,</td>
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<td>remote, interior, hilly areas</td>
<td>laptop) and internet at AB-</td>
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<td>HWCs.</td>
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<td>✓ Offline data syncing</td>
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<td>reported in CPHC-NCD system</td>
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Inclusive partnerships for the design and implementation

**Government**
- AIIMS
- NHSRC
- NHA
- NCDIR
- NICPR
- National Informatics Center
- NCD, DGHS, NHM & eGov Divisions of Ministry

**Academic Partners**
- AIIMS

**Development Partners**
- WHO India
- Dell Technologies
- TATA TRUSTS
- CCDC
End of Presentation
Integration of NCD service package in the Iranian PHC, based on electronic health records

Ardeshir Khosravi
Head of Health Information and Statistical Group, Deputy for Public Health at the Ministry of Health and Medical Education, Iran (Islamic Republic of)
Integration of NCD Service Package in the Iranian PHC Based on Electronic Health Record

Presented by: Ardeshir Khosravi
Technical Deputy of Center for PHC Network Management
Iranian Ministry of Health and Medical Education
In Iran, Health service delivery is based on PHC that was designed and implemented in 1983.

During the last 4 decades, the Iranian health system has made acceptable achievements that the role of PHC in these achievements is undeniable.

By changing the epidemiological pattern of diseases and increasing non-communicable diseases in Iran, as in other countries, by implementing the Health Transformation Plan in Iran, non-communicable diseases were considered as one of the priorities in the designing new PHC.
Iran HTP and integration of NCD in the New PHC

• Revising service packages based on population needs NCD, Nutrition and mental health (with new workforces)

• Integration NCD based on Package of Essential Non communicable Disease:

• Prevention of heart attacks and strokes through integrated care for diabetes, hypertension, hyperlipidemia and obesity

• Prevention, early detection and screening of colon cancer, breast cancer, cervical cancer

• Developing Electronic Health Record based
Fig. 1 The inter and intra-sectoral collaboration of Iranian Non Communicable Diseases Committee
District Health Networks in IRAN (PHC)

Chancellor of University of Medical Sciences & Health Services

Directorate of District Health Network

BTC: Behvarz Training Centre
HP: Health Post
HH: Health House
UCHC: Urban Comprehensive Health Centre
RCHC: Rural Comprehensive Health Centre
SP: Specialized Polyclinic
WHV: Woman Health Volunteers

BTC → District Health Center → District Hospital → SP

RCHC

No=2821

HH → HH → HH → HH

No=180000

No=2815

UCHC

HH → HP

No=5370

WHV
Population Registration in EHR

Has he/she cardiovascular disease history?

Yes
Refer to physician

NO

Measure and record height and weight, waist circumference and blood pressure and perform fasting blood sugar and cholesterol tests with POINT OF CARE devices according to the instructions or in the center’s laboratory and recording information

10 years cardiovascular risk assessment
Each health provider has role in the HER this a testing program and I selected as no physician role for a client above 30-year-old
10 years cardiovascular risk assessment service can be selected from the list of care
The person has any of the following History:

- History of myocardial infarction
- History of invasive treatment intervention (ballooning or cardiac stent)
- History of Open-Heart Surgery (CABG)
- History of stroke
- History of lower extremity artery occlusion
- None
Height
Weight
Waist (first time)
Systolic blood pressure (first time)
Diastolic blood pressure (first time)

Which of the following risk factors does a person have:
- Smoking
- Alcohol consumption
- History of diabetes in first-degree family members
- History of cardiovascular events in first-degree family members (including myocardial infarction under 65 years in women and under 55 years in men)
- History of kidney failure in first-degree family members
- Patient known to have high blood pressure
- Known patient with diabetes

Is a person with high blood pressure taking antihypertensive medicine? Yes

No Fasting blood sugar mg/dL
Total Cholesterol
Blood pressure test result:
- Suffering from high blood pressure
- Controlled blood pressure

Blood sugar test result:
- With diabetes
- Diabetes with optimal control of fasting sugar

Blood lipid test result:
- Possibility of lipid disorder

The result of examining the appearance of body mass:
- Body mass view 27.78
- Overweight
- He has abdominal obesity

Result of risk level assessment:
- Risk level less than 10%

Actions
- Follow-up and care by a health worker one month later and by a doctor three months later
- Next follow-up date
- Refer to a nutritionist for nutrition advice
- Referral to Community Health Center (Physician / Nutritionist)
- Follow up 12 months later
- Next follow-up date
- Referral to a physician

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Number of people how received risk assessment of CVD
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<td>40591</td>
<td>25573</td>
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</table>
Conclusion

• Near to all PHC facilities are using EHR (about 30000 units)
• NCD service packages have been integrated in the PHC based on the EHR
• Many NCD information and indicators can be produced based on the EHR
• Limitations:
  ❖ no data from private sector are included in the EHR
  ❖ We need to devolve a Comprehensive technical formwork for the EHR data quality
Thanks for your attention
Simple: requirements of a pragmatic digital system for driving improvements in large-scale NCD programs

Andrew Moran
Director, Global Hypertension Control
Resolve to Save Lives and Associate Professor of Medicine, Columbia University
Requirements of a pragmatic digital system for driving improvement in large-scale NCD programs.

Lessons learned from creating an NCD management system used in over 10,000 clinics in India, Bangladesh, Ethiopia, and Sri Lanka.

simple.org
Fast, free software for clinicians to manage patients with hypertension & diabetes.

Simple is designed to support large-scale hypertension and diabetes control programs. Healthcare workers record every patient's visit in an app, managers receive daily reports to monitor progress, and patients can chart their own BPs and blood sugars.

simple.org

Pilot
Punjab, India, Oct 2018
Managers monitor where the hypertension or diabetes program is succeeding and where interventions are required.

- Track BP control
- Track registrations
- Track retention in care
- Retain patients with auto-SMS and call lists
- Track treatment trends
- Monthly feedback loops

**NOTE:** Because Simple is fast and easy-to-use, a high % of follow-up visits are recorded. Last month over 850,000 patients had a follow-up recorded.
Why does Simple work?

- Easy to train and learn
- Fast to use during clinical care
- Feedback loops for clinicians and public health officials
- Offline-first
NCD care is **very high volume**. A typical clinical visit in Bangladesh is under 4 minutes.
High volume makes everything more difficult for recording patient info on NCDs.

Aim for recording follow-up visits in Less than 20 sec
Measure only what matters

Correct patient
- Name
- National ID
- Sex
- Age
- Mobile number*
- Home address

Light history
- Heart attack
- Stroke
- Kidney disease
- Diabetes

Visit data (each visit)
- BP measure
  - SBP
  - DBP
- Blood sugar measure
  - mg/dL
  - FBS
- Current HTN+DM meds/ dosages
  - Pick list of common medications...
- Next expected visit date
  - Choose date...
**Key measures** for a hypertension control program

**Health system managers**
- How many patients are enrolled?
- How many patients visit regularly?
- How many patients have their BP under control?

**Healthcare workers**
- Is patient’s BP lowering?
- What was patient’s previous treatment?
- Which patients are overdue?

**Patients**
- Am I getting healthier?
- When should I return?
Simple Dashboard: 3 Key Indicators

1. **BP controlled**
   % of patients that visited in last 3 months with BP <140/90 at their most recent visit

2. **Patients with no recent visit**
   % of patients with no BP measure recorded or did not receive medications in the last 3 months

3. **Registered patients**
   Cumulative and monthly enrolled patients
Using data to drive quality improvement

**Implement**
The hypertension package has 5 components to be implemented.

**Review data**
The Simple Dashboard and data analysis used to identify gaps and areas for improvement.

**Interventions**
QI cycles generate feedback loops, to identify what is effective.

**Improved Outcomes**
Improve BP control %
3 drivers of low BP control

- Poor retention in care
- Therapeutic Inertia
- Lack of consistent drug supply
## Retention in Care

### Calls made to overdue patients

We count a patient as being "called" if any reason was added to a patient in the Overdue list for "Result of call".

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Aug-2020</th>
<th>Sep-2020</th>
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<tbody>
<tr>
<td></td>
<td>Overdue patients</td>
<td>Overdue patients called by staff</td>
</tr>
<tr>
<td>All</td>
<td>10,456</td>
<td>1,490</td>
</tr>
<tr>
<td>HWC Strawberry</td>
<td>567</td>
<td>56</td>
</tr>
<tr>
<td>PHC Blueberry</td>
<td>423</td>
<td>45</td>
</tr>
<tr>
<td>PHC Peach</td>
<td>123</td>
<td>12</td>
</tr>
<tr>
<td>SDH Pomegranate</td>
<td>8</td>
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<tr>
<td>PHC Grape</td>
<td>9</td>
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</table>

### Overdue Calls Report

Monitor facility performance contacting overdue patients.
# Therapeutic Inertia

## Medication Titration Report

Identify facilities with low titration to implement quality improvement interventions.

<table>
<thead>
<tr>
<th>Facility</th>
<th>Jul-2020</th>
<th>Aug-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Follow-up visits with BP ≥140/90</td>
<td>Visits with medication titrated</td>
</tr>
<tr>
<td>PHC Jersey City</td>
<td>174</td>
<td>104</td>
</tr>
<tr>
<td>HWC Queens</td>
<td>199</td>
<td>94</td>
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<tr>
<td>DH Manhattan</td>
<td>216</td>
<td>78</td>
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<tr>
<td>HWC Brooklyn</td>
<td>234</td>
<td>25</td>
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</tbody>
</table>

**Numerator:** Follow-up patients with BP ≥140/90 where medications were titrated (increased dose or addition of new HTN medication).

**Denominator:** Follow-up patients who visited that month with BP ≥140/90.
Facility Drug Stock

Drug Stock Report
Monitor and address supply chain in facilities with low days supply before a stockout happens

<table>
<thead>
<tr>
<th>Facilities</th>
<th>CCB TABLETS</th>
<th>ARB TABLETS</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Amlodipine 5 mg</td>
<td>Amlodipine 10 mg</td>
</tr>
<tr>
<td>All</td>
<td>63,979</td>
<td>56,799</td>
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<tr>
<td>Facility 2</td>
<td>2,412</td>
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<tr>
<td>Facility 3</td>
<td>4,452</td>
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<td>43</td>
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<td>Facility 6</td>
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Drug stock on hand: End of Nov-2021
Patient days is calculated by comparing assigned patients against current stock on hand, normalized by estimated patients at each step of the hypertensive treatment algorithm.
Keep. It. Simple.

- Design with healthcare workers: Give them value
- Fast to Use: Measure only what matters
- Focus on few key indicators:
  - BP control, missed visits, registrations
- Provide actionable real-time data that program managers can use to drive performance improvement
Thank you!

Many thanks to our partners and the health workers and patients who make this work possible.
Moderator

Leanne Riley
Unit Head, Surveillance, Reporting and Monitoring, Department for NCDs
Moderated discussion and Q&A
Thank you for joining

See you next time