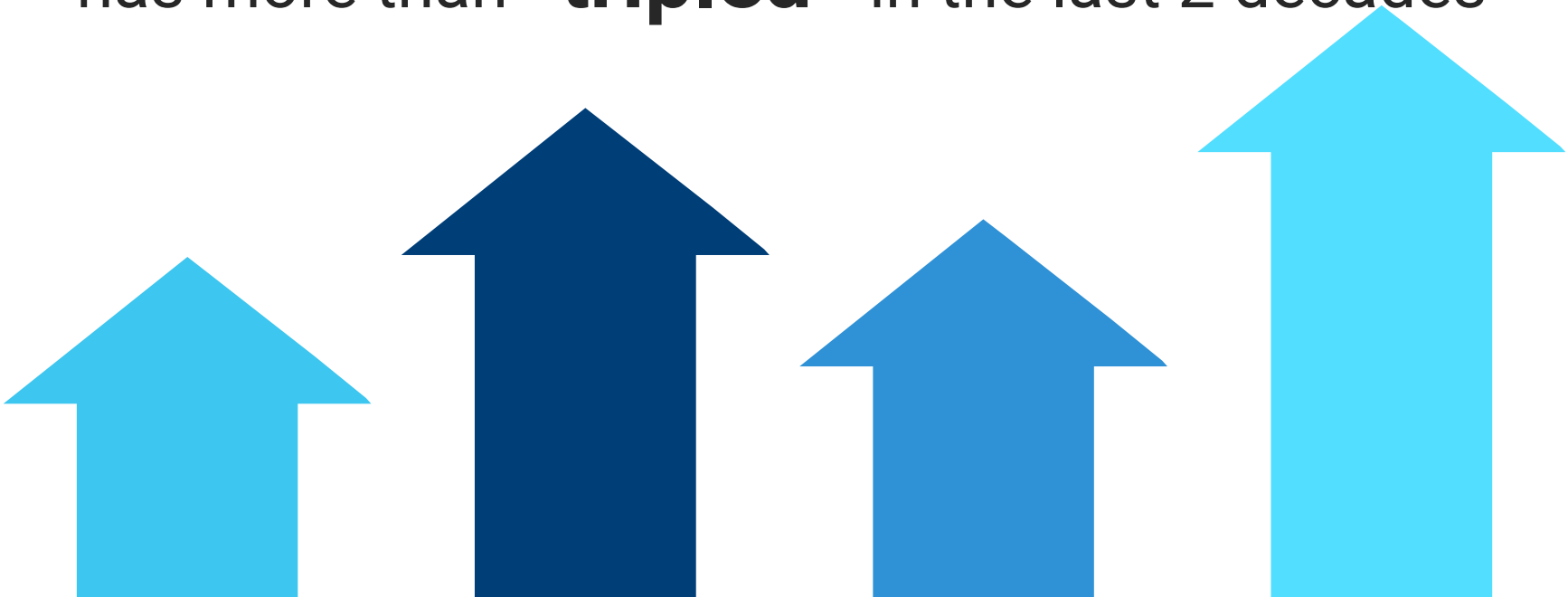
Barriers to TB Screening and poteintial solutions under Joint TB – Diabetes Collaborative activities.

Dr. Yeshwanth, 0014, MPH (IS)

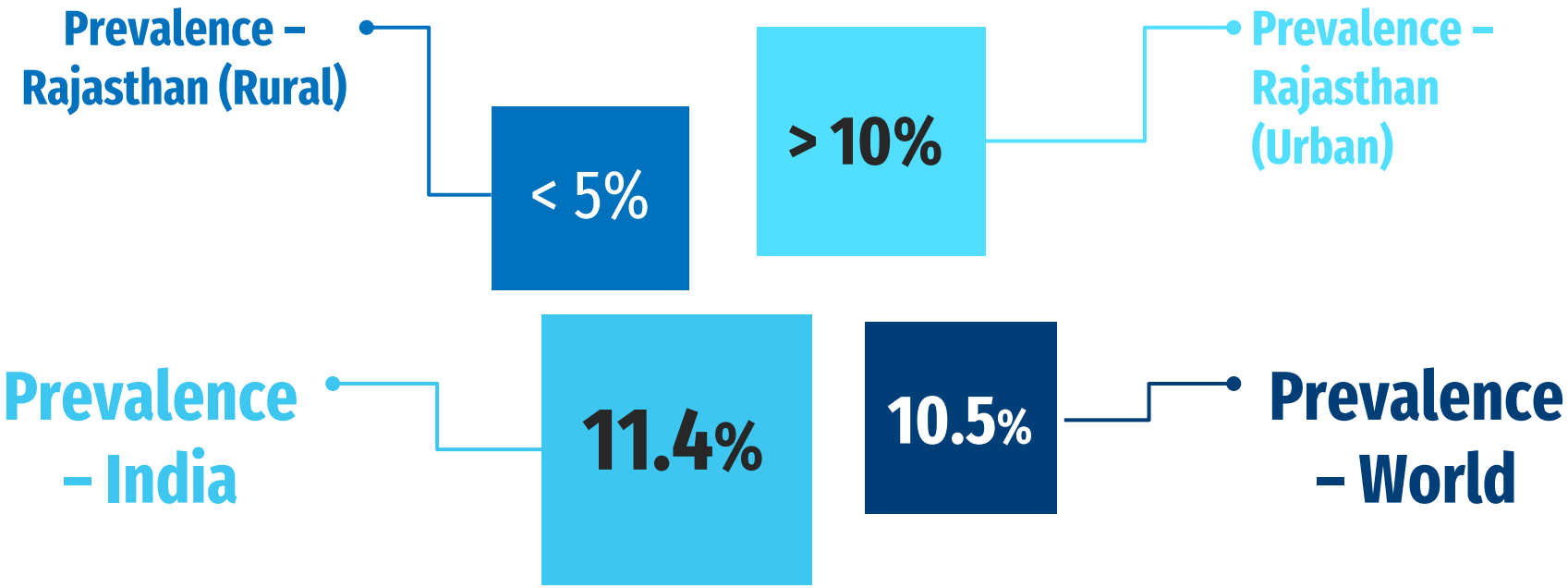
Faculty Advisor : Dr. S.D. Gupta

Diabetes

The Estimated Prevalence of diabetes in the world has more than **“tripled”** in the last 2 decades

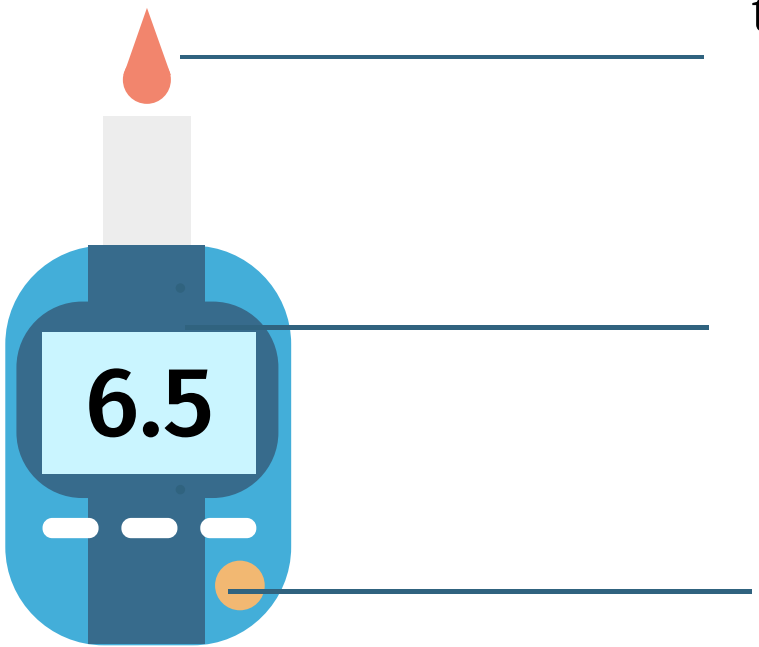


Estimated Prevalence (2021)



Source : International Diabetes Federation & ICMR –INDIAB 17

Diabetes & TB



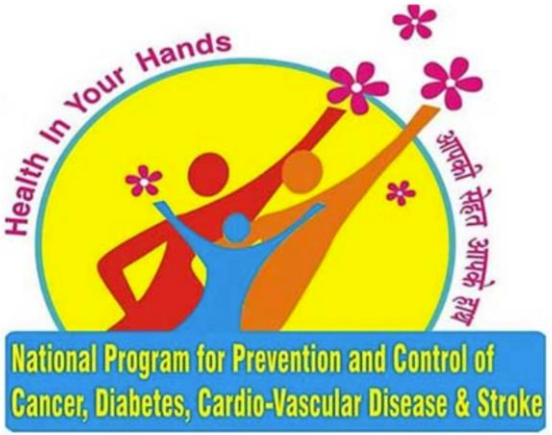
two-to four-fold higher risk of active TB in individuals with DM vs Non-DM
(Hayashi & Chandramohan, 2018 - SRMA)

~ 40% higher prevalence of Diabetes-TB in South-East Asia in comparison to global.
(Gautam, S. et al.2021 - SRMA)

TB-DM patients have **1.74** times higher odds of mortality compared to non-DM TB.
(Gautam, S. et al.2021 - SRMA)

NPCDCS

- The National Programme for Prevention and Control of Diabetes, Cardiovascular Disease and Stroke (NPDCS), now renamed as National programme for Prevention and Control of Non-Communicable Diseases , was launched in 2010.



National framework for joint TB–Diabetes collaborative activities

Revised National Tuberculosis Control Programme (RNTCP)

National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)

March 2017

Supported by WHO Country Office for India

Role of counsellor

- Conduct screening for TB symptom complex in persons attending the NCD clinic
- Ensure proper display of IEC material of TB–diabetes collaborative activity at NCD clinic
- Be involved in the training of TB–diabetes collaborative activity
- Ensure screening of TB symptom complex during domiciliary visits
- Assist MO in preparing the action plan.

Role of staff nurse

• Conduct screening for TB symptom complex in NCD clients attending the NCD clinic and at outreach camps

• Ensure completeness of the referral card filled for the suspected TB patient
under the guidance of MO and refer using RNTCP Laboratory Request Form

• Ensure that the patient referred from TB clinic is screened for diabetes and feedback is shared

• Ensure that the suspected TB patient attends the TB clinic during his/her next
NCD clinic visit.

• Maintain the NCD clinic register and assist data entry operator

Role of Medical Officer

Assist in training of NCD clinic staff and others staff involved in the management of NCDs for TB–diabetes co-morbidities

- Collaborate with district TU for the implementation of TB–diabetes activity
- Ensure screening of TB symptom complex at NCD clinic and its report sharing with district TB officer
- Ensure submission of accurate and timely reporting of TB–diabetes formats to the District NCD Cell along with feedback about the progress of TB–diabetes collaborative activity
- Ensure other NCD staff are appropriately involved in the collaborative activity
- Collaborate with relevant stakeholders to strengthen TB–diabetes activity in the district

- Prepare action plan for implementation of framework

4 Symptom Complex (4S) Screening

Cough

Persistent
> 2 Weeks

Fever

> 2 Weeks

Night Sweats

Weight Loss

Significant

Objectives

- To understand the on-ground implementation strategies for TB Screening.

- To identify the gaps in implementation and the potential reasons.

- To ideate potential solutions for successful implementation.

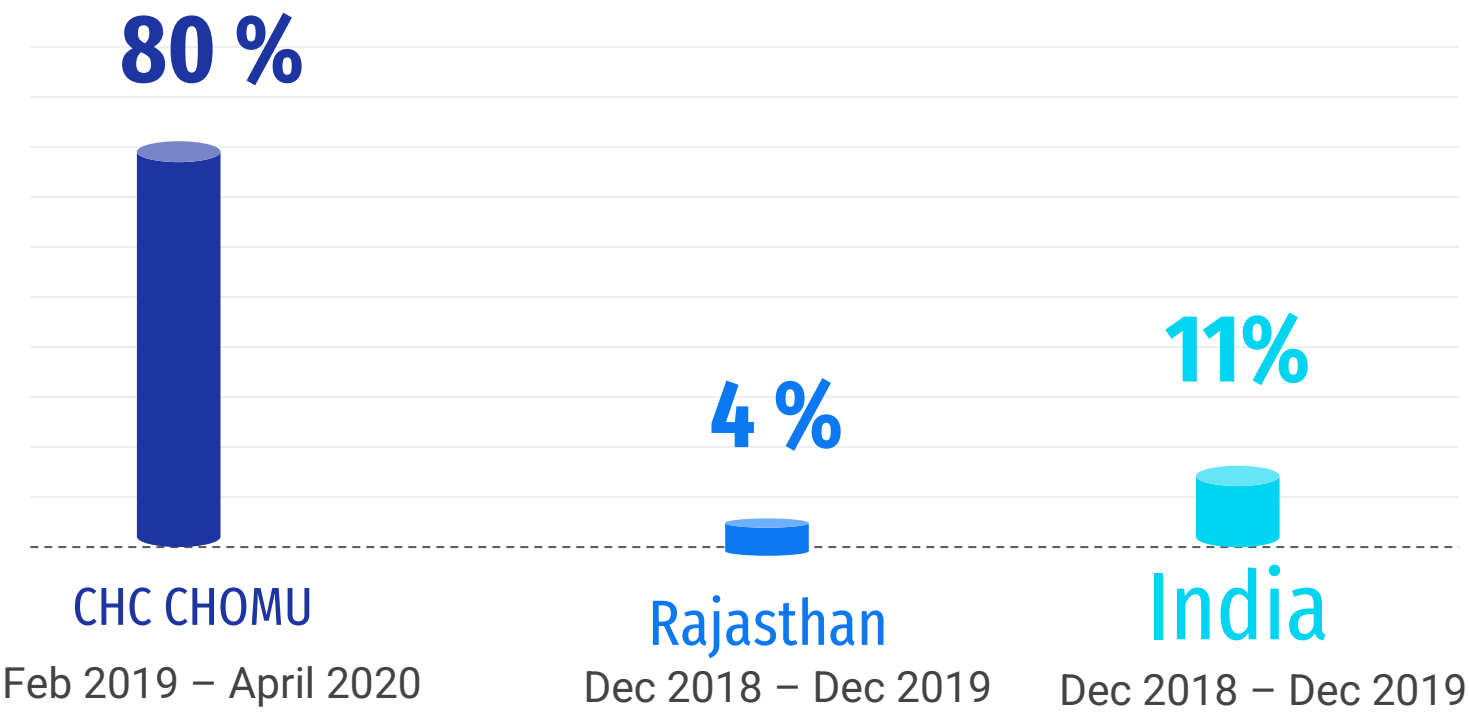
Methodology

Observational Study

Qualitative and Quantitative Data

Data Collection Methods : Desk Review, Key Informant Interview, Observation Checklist, etc.,

Program Data – Enrolled under DM Care, Growth in %



Source : Form -3A CHC Chomu, Annual Reports of NPCDCS

Program Data (Feb 2019) – 101% Achievement

242

Total

No. of Diabetic Patients (Old + New) Visited CHC

3

On ATT

No. of Patients on ATT

239

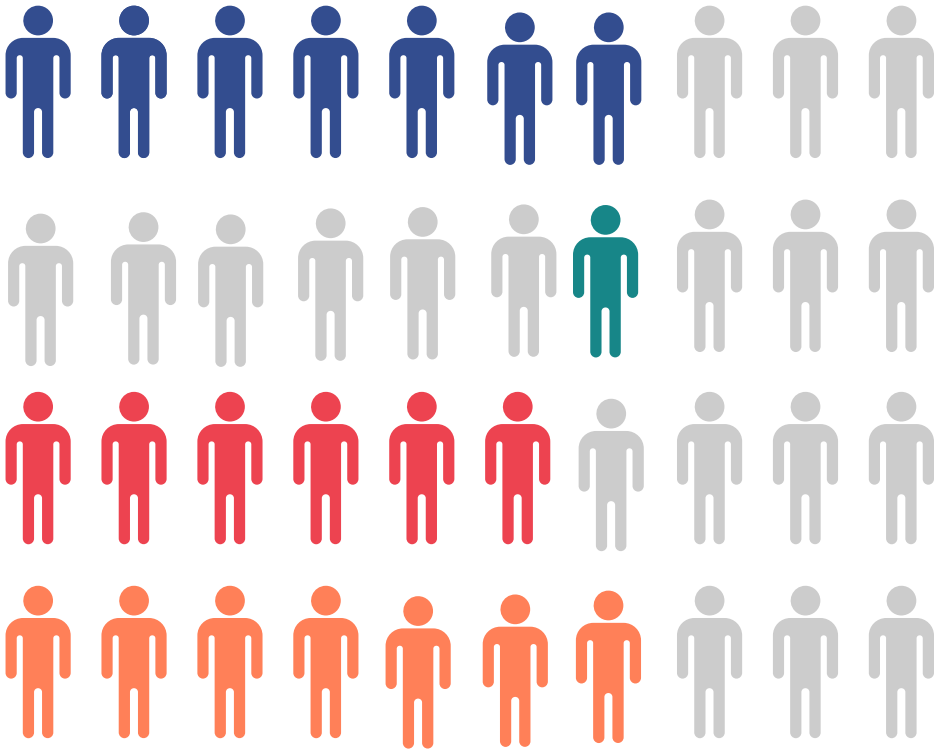
Eligible

No. of Patients Eligible for 4 Symptom Screening

242

Screened

No. of Patients Screened for 4 Symptoms



Secondary Data (April 2020) – 100.5% Achievement

436

Total

No. of Diabetic Patients (Old + New) Visited CHC

2

On ATT

No. of Patients on ATT

434

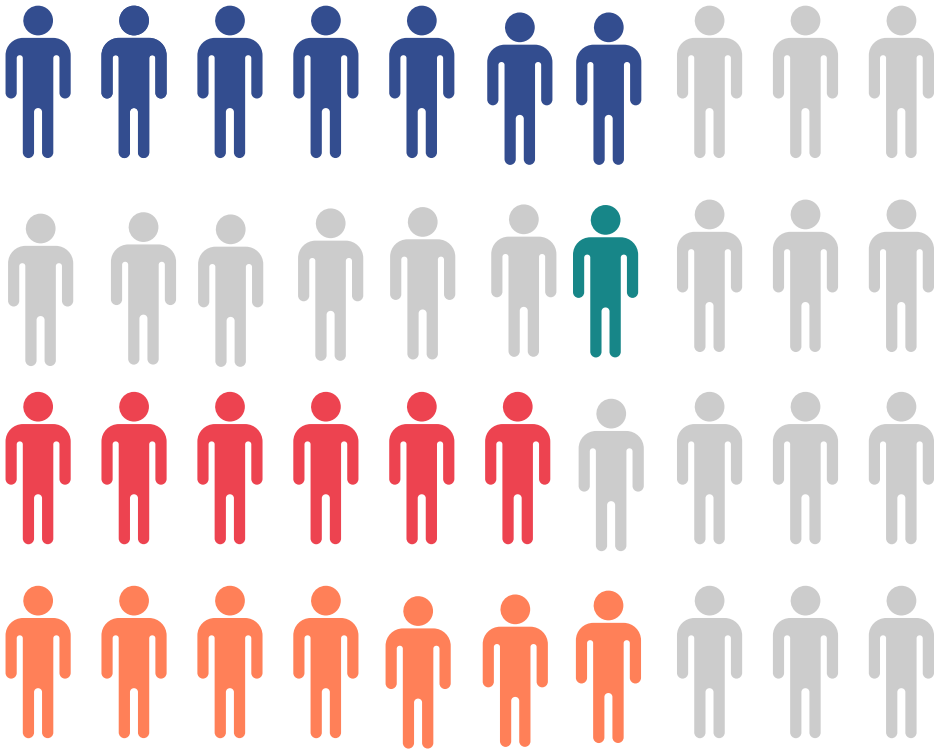
Eligible

No. of Patients Eligible for 4 Symptom Screening

436

Screened

No. of Patients Screened for 4 Symptoms



Q 01: How do you manage a patient with complaint of cough ?

"Agar Patient ko Khasi hai tho Doctor saab unke Parchi pe likh ke , Sputum test ke liye bhejte hai"

Counsellor

"If a Patient has cough, the doctor mentions it on the OP Sheet and refers him for sputum Test."

Counsellor

राजकीय सामुदायिक स्वास्थय केन्द्र चौमूँ(जयपुर)

नैशनल प्रोग्राम फॉर प्रिवेशन कन्ट्रोल ऑफ कैंसर डायबिटिज, कॉर्डियोवास्कलर डिजिज एण्ड स्ट्रोक(एनपीसीडीसीएस)

....

संस्था प्रभारी का नाम...................

कुल जनसंख्या.....................

रजिस्टर का दांयी तरफ

कोई गैर-संचारी बीमारी (कृपया बीमारी ... करें)	निजि जानकारी: धूम्रपान	तम्बाकू: धुम्रहित(चबाने वाला /सूंघने वाला)	शराब का सेवन गत एक माह से पूर्व	आलसी जीवन शैली	डायबिटिज	हाई ब्लडप्रेशर	परिवार का विवरण: सीवीडी	लकवा	कैंसर
	हां/नहीं	हां/नहीं	हां/नहीं	हां/नहीं	हां/नहीं	हां/नहीं	हां/नहीं	हां/नहीं	हां/नहीं
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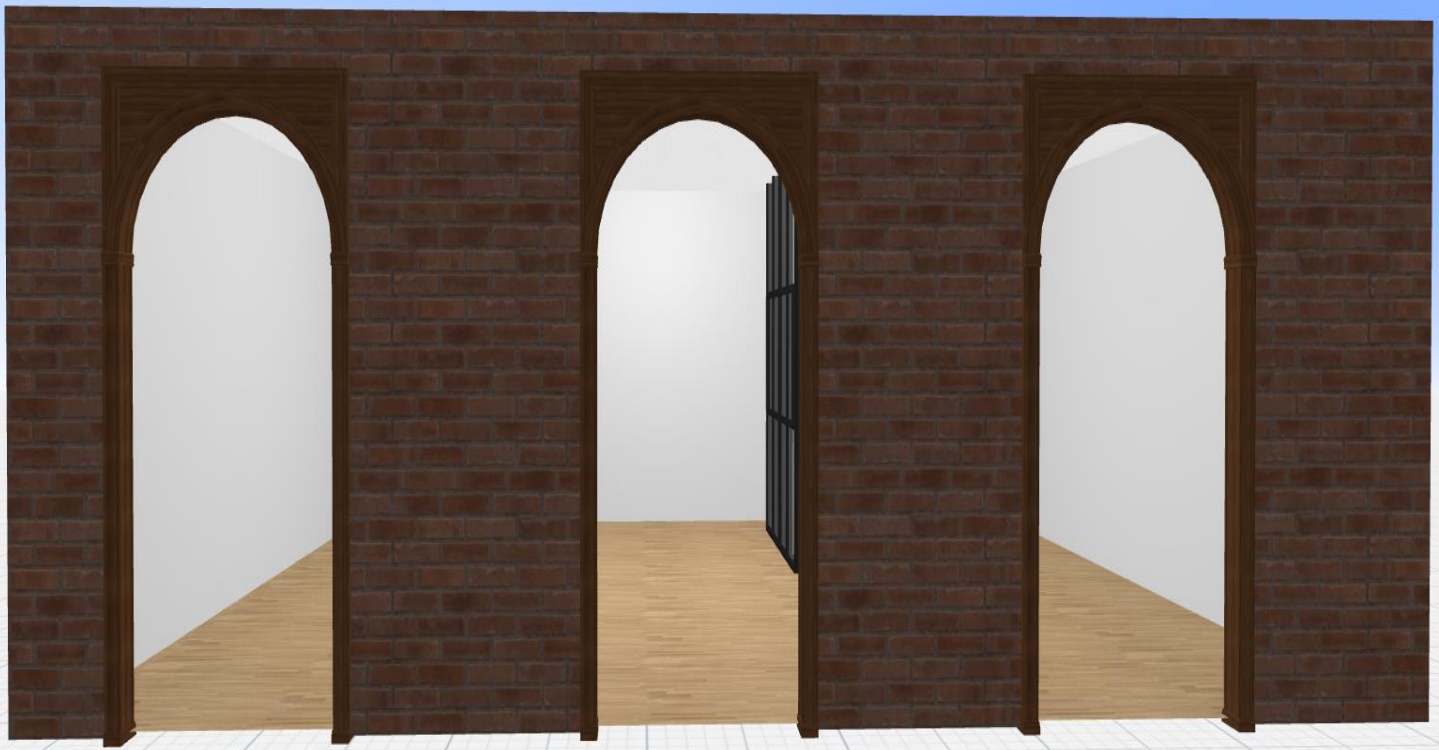
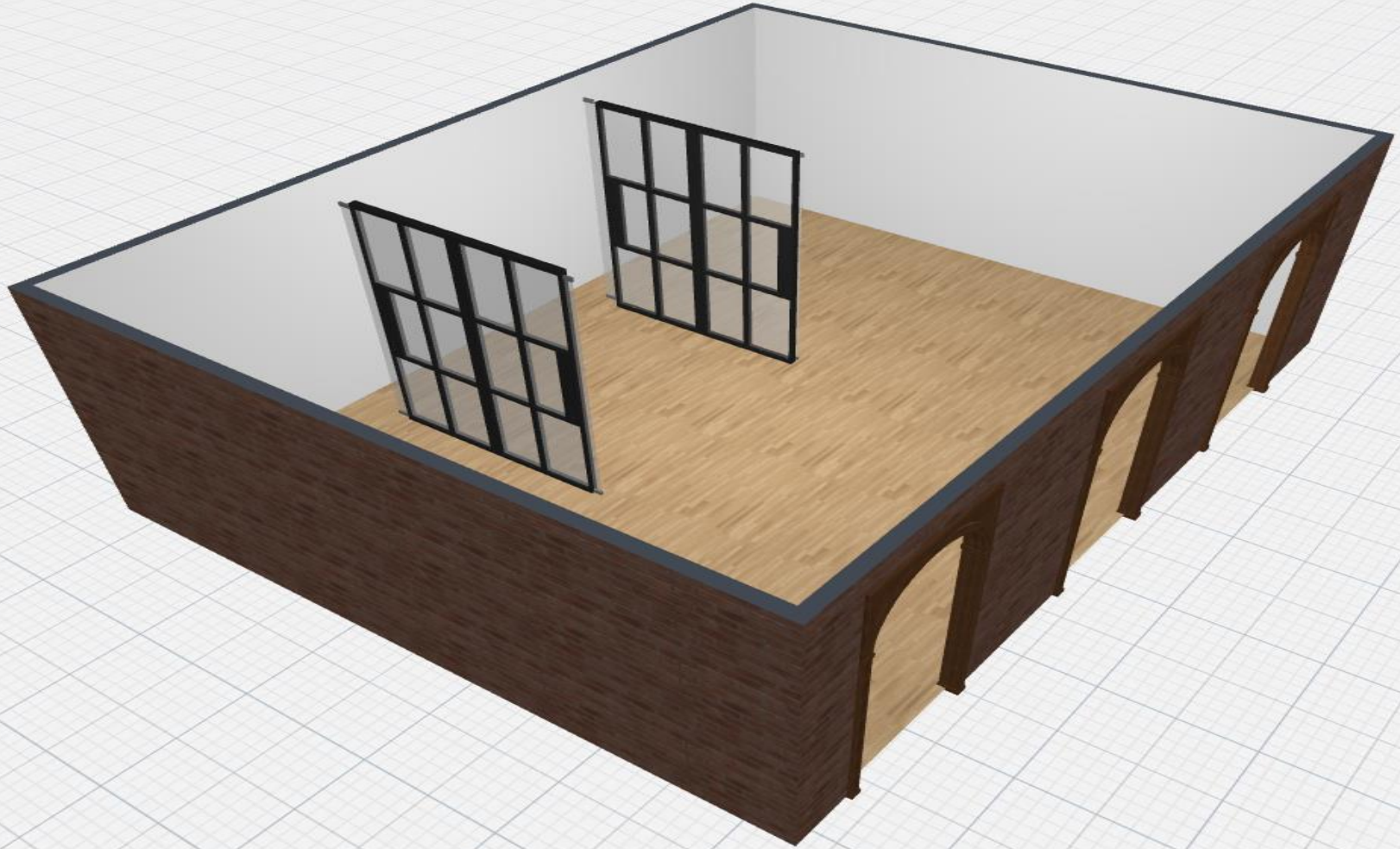
ऊंचाई/ वजन	बीएमआई	ब्लडप्रेशर	ब्लडशुगर फास्टिंग/रेण्डम (to mention FBS/RBS)	मुख की जांच	स्तन जांच	बच्चेदानी के मुंह का हस्त निरीक्षण	अन्य कोई जांच/जांच परिणाम	COUNSELLING	जांच का परिणाम: अन्तिम निदान	उपचार प्रारम्भ करने की दिनांक	उपचार प्रारम्भ करने के बाद स्थिति: रैफर/ फॉलोअप/ फॉलोअप नहीं/ मृत	अन्य कोमोर्बिडिटी: टी.बी. के लक्षण की जांच	टी.बी. के उपचार पर
(मीटर)/ (kg)	kg/m²	mm/Hg	mg/dl	सामान्य/ असामान्य	सामान्य/ असामान्य	सामान्य/ असामान्य						हां/ नहीं	हां/ नहीं
		120/80	106 Mg/dL	सा0	सा	—							
		130/80	135 Mg/dL	सा	सा.	सा.							
		150/100	120 Mg/dL	सा	—	—							
		120/80	127 Mg/dL	सा0	—	—							
		130/80	112 Mg/dL	सा	—	—		y.					
		140/90	120 Mg/dL	सा	—	—							
		120/80	102 Mg/dL	सा	—	—							
		120/80	143 Mg/dL	सा	—	—							

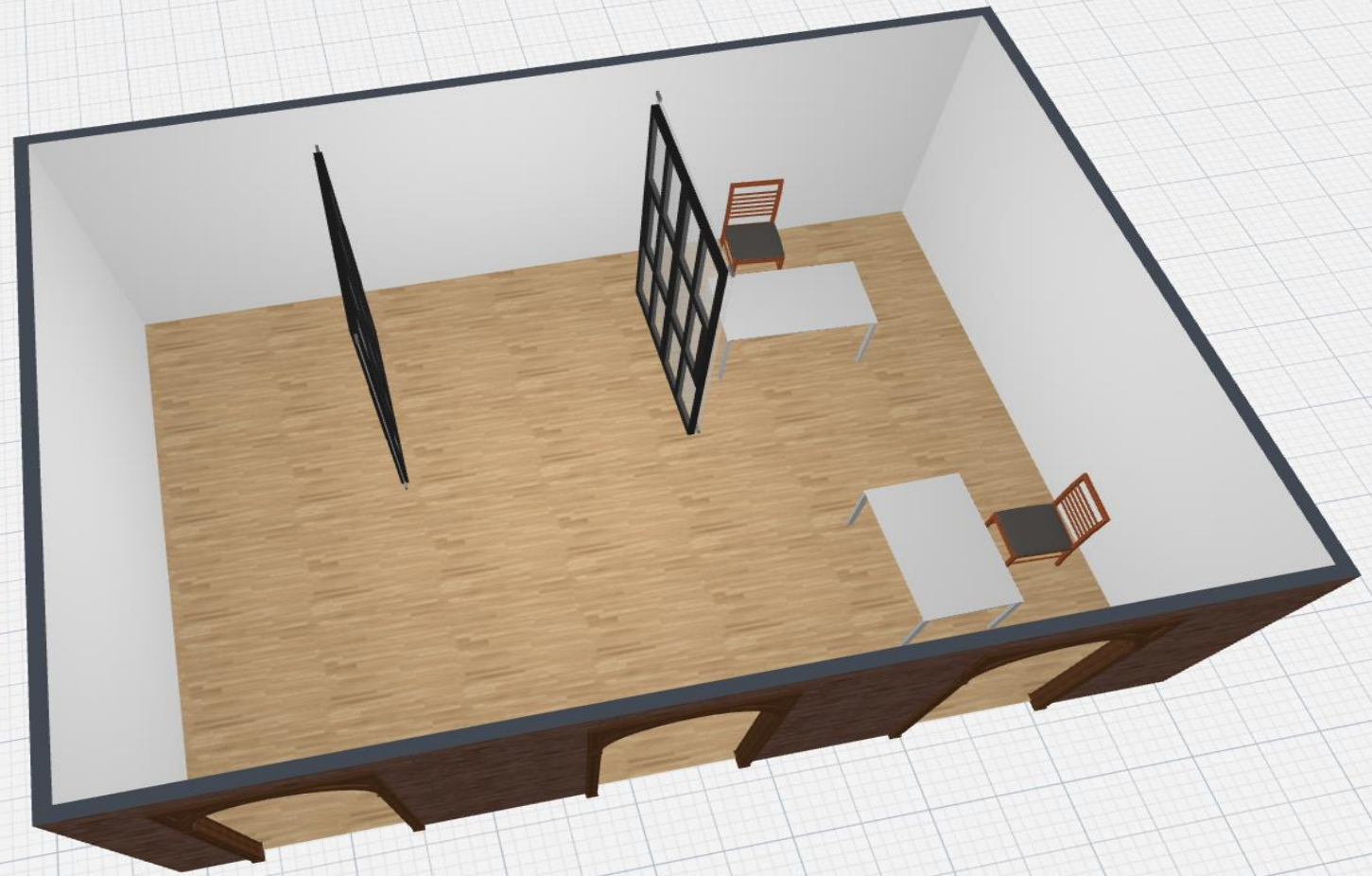
Problem 1

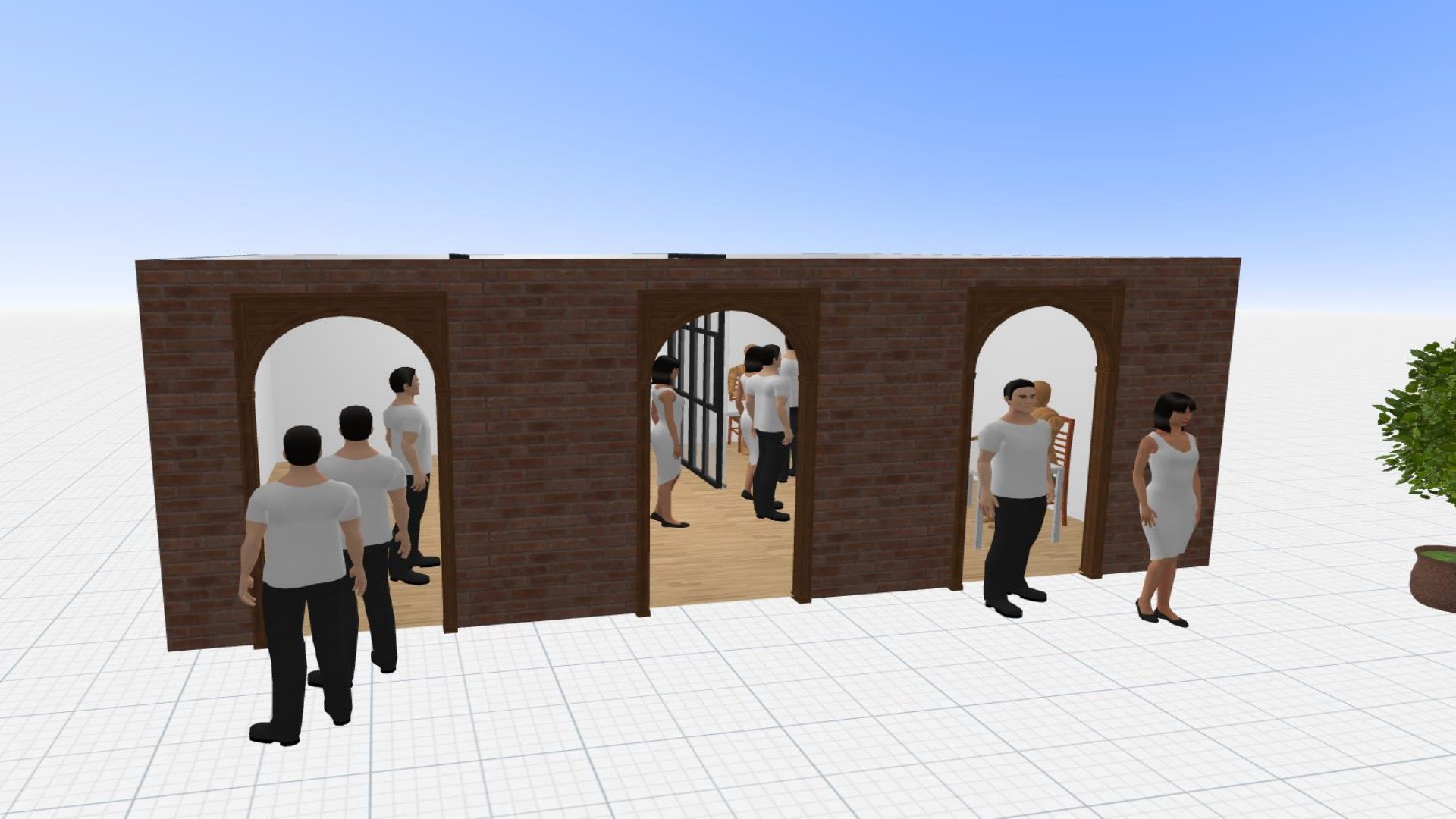
Poor Knowledge levels among the NCD Clinic Staff regarding

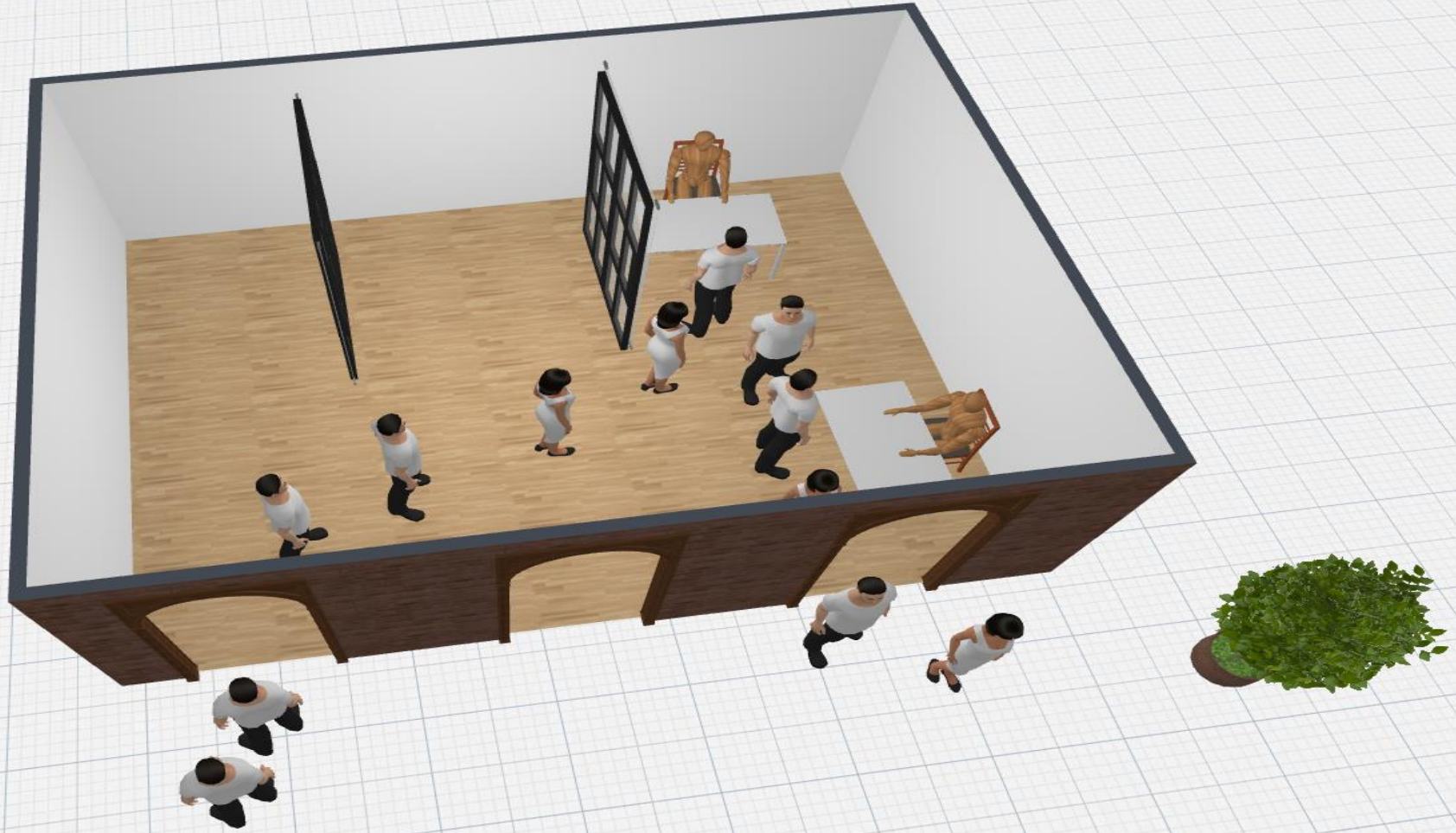
- Importance of TB Screening
- the Right method and procedures
- Whom to screen and Whom not to Screen
- Clear roles and responsibilities
- Accurate Recording and Reporting











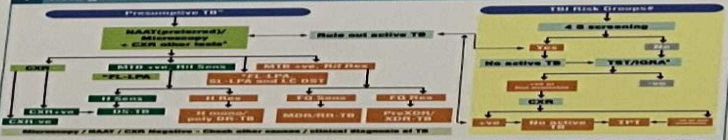
Ministry of Health & Family Welfare
Government of India

World Health Organization India

NATIONAL TUBERCULOSIS ELIMINATION PROGRAMME AT A GLANCE

Comprehensive Clinical Management Protocol of Tuberculosis

I Integrated Management Algorithm for TB disease and TB infection



II Public Health Action at Health Facility Level

Public health actions includes 1) patient home visit; 2) counselling of patient and family members; 3) treatment adherence and follow up; 4) contact tracing, investigation, TPT; 5) HIV counseling and testing; 6) random blood sugar testing; 7) drug susceptibility testing; 8) linking with available social welfare and support schemes

Mandatory action at Health Facility Level > **Notification of diagnosed TB patients on NIKSHAY** < Mandatory action at Community Level

Mandatory action at Health Facility Level

- Counselling of the TB patient and family members on
  - TB infection and disease
  - Diagnosis
  - Contact screening and TPT
  - Treatment
  - Nikshay Poshan Yojana (NPY)
  - Nutritional assessment and support
  - Comorbidity care
  - Treatment adherence
  - Follow up visits and investigation
  - Adverse effect reporting
  - Long term follow up
- Comorbidity screening - HIV and blood sugar
- Risk assessment of TB patients for differentiated care (Refer to Box III)
- Initiate appropriate regimen (Refer to Box IV)
- Bank details collection for Nikshay Poshan Yojana
- Follow up during treatment (Refer to Box V)

Mandatory action at Community Level

- Home visit by the Health worker preferably within 3 days of diagnosis
- Counselling of the TB patient and family members on
  - TB infection and disease
  - Diagnosis
  - Contact screening and TPT
  - Treatment
  - Nikshay Poshan Yojana (NPY)
  - Nutritional assessment and support
  - Comorbidity care
  - Treatment adherence
  - Follow up visits and investigation
  - Adverse effect reporting
  - Long term follow up
- Bank details collection for Nikshay Poshan Yojana. Geo-tagging of patients in Nikshay
- Contact investigation (identification based on 4S symptoms) - Refer to health facility for further clinical evaluation (if symptom positive) and/or testing - Rule out active TB (Refer to Box I)
- Active TB → Start ATT
- TPT eligible → Initiate TPT

III Consider Hospitalization/ Consultation for presence of any one of the following*

1. BMI < 14.0 kg/m²
2. BMI 14.0–15.9 kg/m² AND (bilateral pedal oedema OR inability to stand without support OR no appetite)
3. Severe anaemia (Hb < 7 g/dL) with or without heart failure
4. Unstable vital signs—pulse rate > 100 per minute OR RR > 24 per minute / <12/min OR oxygen saturation < 94% OR systolic blood pressure < 90 mm Hg OR poor performance status (bed—ridden or extremely limited mobility)
5. Complications of PTB—Example, moderate—massive haemoptysis, hydro—pneumothorax
6. Complications of EPTB—Example, altered consciousness, seizures, lower limb paresis/ paralysis, suspected intestinal obstruction or perforation
7. Complications to anti-TB treatment-drug induced hepatotoxicity or seizures
8. Patients with comorbidities who need inpatient care to manage these comorbidities according to the judgement of the treating physician- Example, DM, HIV, liver or renal disease, alcohol addiction/ drug abuse
9. Discretion of the Treating physician based on the clinical scenario of the patient.

*Technical Guidance For Comprehensive Package for Differentiated Care of TB patients

IV Treatment Regimens

Type of TB	Type of Regimen	Drugs	Extension Criteria
Drug susceptible TB	DS-TB regimen	2 months H, R, E, Z 4 months H, R, E	In certain EP TB cases (Like TB Spine, Bone TB, etc) in consultation with the specialist
H mono/ poly DR-TB	H mono/poly DR-TB regimen	6 months Lfx R, E, Z	Extension for 3 months in patients having: Extensive disease. - Uncontrolled comorbidity. - Extra Pulmonary TB - Smear positive at the end of 4th month
MDR/RR and XDR-TB	Shorter oral Bedaquiline-containing MDR/RR-TB regimen	(4-6 months) Bdq (6 months), Lfx, Cfz, Z, E, H^h, Eto/ (5) Lfx, Cfz, Z, E	IP can be extended to 5th or 6th month based on smear results at the end of 4th and 5th month of treatment.
	Shorter injectable containing MDR/RR-TB regimen (no new patient to be started on this regimen from April 2022)	(4-6 months) Mfx^h, Km/ Am, Eto, Cfz, Z, H^h, E/ (5 months) Mfx^h, Cfz, Z, E	IP can be extended to 5th or 6th month based on smear results at the end of 4th and 5th month of treatment
	Longer Oral M/XDR-TB regimen*	(18-20 months) Lfx Bdq (6 months or longer) Lzd# Cfz Cs	#If the 5th/4th month culture report is negative Linezolid tapered to 300 mg *For Pre-XDR/XDR-TB patients, duration has to be 20 months with appropriate regimen modification
TB infection	TB preventive treatment	6H (6 months daily H monotherapy)	
		3HP (3 months weekly P and H — 12 dosages)	
		6Lfx (6 months daily Lfx in contacts of MDR/ RR-TB with FQ susceptible index patient)	
		4R (4 months daily R in contacts of H resistant with R susceptible index patient)	

V Follow up

Regimen	Clinical + Wt	Smear	Culture	DST	Other Investigations (Bio- Chemical/ Radiological)	Long term FU
Drug susceptible TB regimen	Monthly	End of IP, end of Rx		As per Guidelines for Program-matic Management of Drug Resistant TB in India 2021	CXR: End of Rx and if indicated USG Abdomen: for EP TB if indicated LFT: if indicated	6 monthly screening followed by testing 2 years by culture
H mono/ poly DR -TB regimen	Monthly	3rd month - 6th/9th month	3rd month, end of treatment (6th month and /or 9th month if applicable)		CXR: End of Rx and if indicated TSH and LFT: if indicated ECG: if indicated Electrolytes: if indicated	
Shorter MDR/RR -TB regimen	Monthly in IP, Quarterly in CP	Monthly from 3rd month to 4th/6th month, SM and LC within 7 days if SM+ at 6th month or later	3rd month, 6th month and/or end of treatment if applicable		CXR: End of IP, end of Rx and if indicated TSH and LFT: End of IP and if indicated ECG: 2 wks, monthly for 6 months and if indicated	
Oral Longer M/XDR-TB regimen	Monthly up to 6th/ 7th/8th month Quarterly from 6th/ 7th/8th onwards	SM with culture at C-DST lab	Monthly from 3rd to 6th/7th/8th month. Quarterly from 6th/7th/8th onwards		CXR: End of 6th month, end of Rx and if indicated Electrolytes: if there is QTcF prolongation and if indicated LFT: Every 3 months and if indicated TSH: Every 6 months and if indicated ECG: 2 wks, monthly for 6 months and if indicated	

VI Connecting patients/citizens with National TB Elimination Programme (NTEP)

Notification

- Private providers notifying TB are paid Rs. 500 on notification and Rs. 500 on successful outcome.
- Use Nikshay Login credentials for Nikshay Mobile App and Nikshay Dashboard for monitoring.
- eSanjeevani - a web-based comprehensive telemedicine solution- May also be used for TB related problems.

Adherence

- ICT-based adherence system: 99DOTS, MERM, VOT
- use Nikshay Login credentials for Prevent TB India Mobile App, Nikshay Mobile App and Nikshay dashboard for monitoring.

Patient support

- Nikshay Poshan Yojana: Rs. 500/month for all TB patients during treatment as DBT for nutritional assistance
- Travel reimbursement for TB patients @ Rs. 750 coming from notifiable tribal areas
- Treatment supporter incentives @ Rs. 1000 for DS-TB and @ Rs. 5000 for DR-TB patients
- TB Arogya Saathi Application: Information on TB; Symptoms of TB, Side effects, Health facilities, BMI assessment, Nutrition advice, Social support.
- Scan and download: TB Arogya Saathi Application
- Nikshay Sampark (Call Centre): 1800116666-For citizen/patients/care giver (Everyday from 7:00 AM- 11:00 PM)
- Patients may also take the help of Emergency Response System (ERS) by dialing 108 for emergency services.
- For any TB related updates and query may refer to Central TB Division website https://tbcindia.gov.in/

Definitions

Abbreviations

राष्ट्रीय क्षय उन्मूलन कार्यक्रम

टीबी की पूर्ण जानकारी के लिए मुफ्त हेल्पलाइन

1800-11-6666

आप अपको या आपके परिवारजनों को कभी से कोई भी लक्षण है, तो तुरंत हेल्पलाइन पर बात करें।

टीबी की मि मुफ्त जांच और उपचार का लाभ उठाएं।

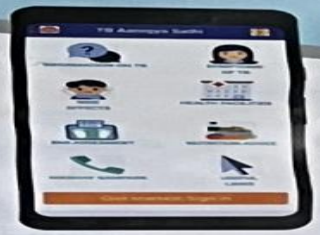
हेल्पलाइन पर फोन कर विशेषज्ञों से टीबी, इसके लक्षण और इलाज की जानकारी पाएं।

हेल्पलाइन पर टीबी से जुड़ी शंकाएं, टीबी सम्बन्धित योजनाओं की जानकारी और निक्षय मित्र बनने की सुविधा भी उपलब्ध है।

टीबी आरोग्य साथी ऐप आज ही डाउनलोड करें

टीबी आरोग्य साथी ऐप रोगियों को टीबी उपचार सेवाओं से जोड़ने का माध्यम है

टीबी से बचें और इसे फैलने से बचाएँ



ऐप डाउनलोड करने का तरीका

गूगल प्ले स्टोर जाये	टीबी आरोग्य साथी ऐप सर्च करें	ऐप को सेलेक्ट करें और डाउनलोड (इंस्टॉल) करें

ऐप की प्रमुख विशेषताएं

टीबी के बारे में सत्यापित जानकारी प्राप्त करें	टीबी रोगी के उपचार की प्रगति देखें	टीबी रोगी के उपचार पूरा करने से जुड़ी महत्वपूर्ण जानकारी प्राप्त करें	प्रत्यक्ष लाभ हस्तांतरण (डीबीटी ट्रांजैक्शन से संबंधी जानकारी प्राप्त करें)

टीबी आरोग्य साथी ऐप

Google Play

अन्य किसी भी जानकारी के लिए कृपया www.nikshay.in पर जाएं

अपने फोन पर ऐप डाउनलोड करने के लिए स्कैन करें

जिला स्वास्थ्य समिति टी.बी., जयपुर (द्वितीय) द्वारा जनहित में जारी


डॉ. अनिल सेन
F
A
S
T

Problem 2 : IEC Material - Posters

- Non-Relevant IEC Material / Job Aids being displayed.
- Over-loaded with Content.
- Displayed in Conjunction with other IEC materials
- Gang-way / Waiting area is mostly left out.

Enablers
• B1a: Presence of Designated Microscopy Centre (DMC) in proximity (30 meters) to NCD Clinic
• B2a: Keen-ness among the staff at TB Centre to work in coordination with NCD Clinic.
• B2b: Availability of senior physician as the MO-In charge for the NCD Clinic.
• B4a: Predictable and increasing financial commitment towards TB elimination by the Government and support from the multilateral and global funding agencies.
• B5a: Political commitment towards TB elimination, championed by the Prime Minister of India.

Implementation

Innovation	Outer Setting	Inner setting	Characteristics of Individuals	Implementation Process
1). The innovation is not complicated and can be implemented with minimal training (F).	1). No additional tools were provided to aid in effective implementation (B)	1).Internal Re-allocation of staff Nurse to emergency services (B)	1).Perceived to be additional activity/burden (B).	1). Poor Coordination between NTEP & NPCDCS Staff (B)
2). Lack of focus on follow-up after referral (B)	2). Pressure to achieve high performance leading to reporting of high performance (B)	2).Demarcation of Physician's corner and staff corner not favouring the recording (B)	2).Poor Knowledge levels among the staff (counsellor & LT) regarding the intervention.	2). Lack of efforts to adapt/tailor the innovation to the CHC setting (B)
3. Absence of indicators to track outcomes of referral (B)	3).Strong Political commitment (F)	3. Appointment of senior physician as MO (I/C) (F)	3). Intervention perceived to be Non-important (B)	

Problems	Suggestive Actions	Feasibility	Priority
1. **Poor knowledge levels among the staff regarding specific roles and responsibilities, 4 Symptom(4S) Screening, related documentation in Registers and reporting of the same as per the prescribed format.**	• Re-fresher training for the staff on identified knowledge-Gaps	Swift	
	• Provision of relevant IEC Material and Ready-Reckoners	Challenging	
	• Institute an Annual re-fresher training mechanism at the CHC in collaboration with NTEP	Swift	

3. **Cluttering and Poor visibility of the IEC material (Posters) due to overloading with content and placing right beside doctors table in conjunction with other IEC material.**	• Re-designing of IEC material specific for the purpose	Challenging	
	• Identification of proper placement area	Swift	
	• Spacing between IEC materials	Challenging	

5. Non-existence of personalized tools (physical) to document and track/review patient history either with NCD clinic or with the Patient apart from the OP Slip and common patient register	• Design tools such as patient card & 4S Screening Stamp(for NCD clinic) and patient book (for patient) to make patient history more accessible.	Swift	
	• Incorporate the tools as a part of daily practice at the NCD Clinic	challenging	
	• Develop a mechanism and incorporate into NCD Portal / ABDM	Difficult	

Recommendations

1. Refresher Training: The Staff were initially trained 5 years ago and no subsequent refresher trainings were organized. Re-fresher trainings are to be conducted periodically (focusing on specific Gaps) with the support of NTEP Staff to ensure adequate knowledge levels and fidelity to the program.

Recommendations

2. IEC Material: Provision of relevant IEC materials, Job-Aids and ready reckoners help staff to refresh their knowledge levels and help educate patients to seek care if they identify such symptoms.

Recommendations

3. Tools: Tools such as individualized Patient Cards, Patient Books and stamp for 4S symptoms helps document history and can be quickly retrieved as well. These can be employed to improve fidelity.

Recommendations

4. Indicator: The Program currently does not have indicators to track the testing status and outcomes of testing for the cases referred to the DMC. An addition of the following indicator in Form 3A, Form 4 & Form 5A would automatically lead to regular line-listing and thereby follow-up with NTEP & Patients to ensure that suspected cases are tested, linked to care and managed properly.

Indicator D : No. of referred cases Tested at the DMC / PHI

Indicator E : No. of Tested cases identified to be positive

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