Mycetoma Research Centre
University of Khartoum
WHO Collaborating Center
on Mycetoma and Skin NTDs

Strategy for Early Case Detection of Mycetoma at the Field Level

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Strategic Plan 2025-2030

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Background

Early Case Detection of Mycetoma at the field level is crucial because the disease often progresses silently to extensive subcutaneous swelling, chronic discharge, and disability if not identified early. Timely recognition by frontline health workers enables rapid referral, targeted treatment, and shorter, more effective therapy, thereby reducing morbidity, amputation risk, and long-term costs for both patients and healthcare systems. It also strengthens community awareness and improves the surveillance and mapping of endemic foci. It minimises misdiagnosis by promoting simple, accessible diagnostic approaches and accelerates the integration of mycetoma control into primary healthcare, ultimately improving outcomes and quality of life for affected individuals.

Objective

- Increase the proportion of early-stage mycetoma cases that are identified and referred within 1–2 weeks of the first symptoms.

Audiences

- Rural residents (farmers, herders, labourers)
- Agricultural workers and barefoot individuals
- Community gatekeepers (local leaders, teachers, religious leaders, shopkeepers)
- Community-based health volunteers (CHWs, ASHAs/auxiliary staff)

Strategic pillars and actions

1. Community awareness and risk perception

- Develop a simple, culturally sensitive awareness campaign that focuses on early signs (painless swelling, nodules, and draining sinuses with grains), emphasises the importance of early care, and aims to reduce stigma.
- Use local languages and visuals (posters, flip charts, megaphone announcements) tailored to farming calendars and market days.
- Engage gatekeepers to model care-seeking behaviour and to reinforce messages in schools, markets, farms, and places of worship.
- Conduct regular community conversations, school programmes, and farmer group meetings to normalise early reporting.

Actions:

- Create 4–6 key messages and a 1-page illustrated guide for lay audiences.
- Train gatekeepers to recognise red flags and to refer promptly.
- Distribute educational materials at clinics, village clinics, schools, agricultural cooperatives, and market hubs.
- Organise community forums and peer education sessions led by trained CHWs.

2. **Targeted screening and community-based triage**

- Implement low-cost, Community-Based Early Detection (CBED) activities to identify suspicious lesions quickly.
- Create simple, non-stigmatising screening tools for CHWs and gatekeepers to use during routine visits and outreach.
- Establish a rapid triage pathway: if a lesion is suspicious, immediate referral to a local health facility within 1–2 weeks.

Actions:

- Develop a one-page screening checklist (visible to CHWs and gatekeepers) focusing on lesion location, duration, painless nature, and exposure history.
- Train CHWs and gatekeepers to conduct quick visual inspections and to document symptoms using a minimal form.
- Equip CHWs with basic triage kits (gloves, clean swabs, basic wound care guidance) for interim care and to prevent delays.

3. **Strengthening referral pathways and feedback loops**

- Establish rapid, low-barrier referral channels from the community level to primary care facilities and, if necessary, district labs.
- Provide referral cards or digital referrals that capture essential information and a "referral within 7 days" target.
- Ensure timely feedback to CHWs and gatekeepers about test results and patient status to reinforce trust and ongoing engagement.

Actions:

- MOUs or simple agreements with primary care centers outlining 7–14 day referral turnaround expectations for suspected cases.
- Implement a referral tracker (either paper or digital) that records the date of symptom onset, the date of referral, and the date of initial evaluation.
- Establish a feedback mechanism: clinics report back results and treatment decisions to CHWs within 7 days of testing.

4. Capacity building and human resources

- Train a cadre of community gatekeepers and CHWs on mycetoma recognition, triage, referral processes, and patient-centered communication.
- Develop basic competency in wound care and infection prevention to minimise delays and complications prior to formal diagnosis.
- Provide periodic refreshers and practical hands-on sessions.

Actions:

- Develop a short training curriculum (2–3 days) and provide refresher micro-training sessions every 6–9 months.
- Create simple job aids, such as symptom checklists, referral cards, and patient education sheets.
- Identify and train a few "community champions" among gatekeepers to sustain momentum.

5. Data, monitoring, and feedback for continuous improvement

- Establish lightweight, privacy-conscious data collection to monitor early detection performance.
- Track the time-to-referral from symptom onset to the first health facility evaluation and monitor the proportion referred within 1–2 weeks.
- Use data to identify bottlenecks (seasonal spikes, transport issues, facility wait times) and adapt strategies.

Actions:

- Key indicators:
    - Proportion of suspected cases referred within 7–14 days of symptom onset
    - Time from first contact with CHW/gatekeeper to clinical evaluation
    - Number of community outreach events and participants reached
    - Referral completion rate and feedback loop closure rate
- Create a simple dashboard for district health teams and community leaders to track key metrics.
- Conduct quarterly reviews to adjust messages, training, and referral processes as needed.

6. **Risk management and sustainability**

- Address potential delays caused by distance, transportation, stigma, or misinterpretation of symptoms.
- Build resilience by aligning CBED activities with local health priorities and existing outreach programs.
- Plan for scale: pilot in a few communities, assess impact, then expand.

Actions:

- Map transport options and subsidise or coordinate transport for urgent referrals when feasible.
- Engage communities to reduce stigma through trusted local figures and peer champions.
- Integrate mycetoma early-detection activities with other skin disease outreach to maximise reach and efficiency.

Tools and templates to develop

- Community education one-pagers and posters (local language, visuals)
- CHW/gatekeeper screening checklist and referral cue cards
- Simple patient-facing symptom diary or symptom onset tracker
- Referral card with essential information and a clear "see a clinician within 1–2 weeks" message
- Lightweight referral tracker log (date of symptom onset, date referred, facility visited, outcome)
- Short training module and facilitator guide
- Monitoring and feedback report template for quarterly review

Key success factors

- Local relevance: tailor messages and materials to culture, language, farming cycles, and local beliefs.
- Simplicity and feasibility: start with core activities that can be sustained with existing resources.
- Trust and engagement: rely on respected gatekeepers and CHWs to build confidence and encourage timely care.
- Feedback-driven adaptation: Utilise data and community input to continually improve screening and referral processes.

A 12-Week Action Plan

Concrete tasks with responsibilities

Week	Task	Responsible
Week 1	• Launch planning meeting • confirm district/community teams • finalise goals and success metrics.	• District Program Manager (Project Lead) • CHW Coordinator • Gatekeeper Lead..
	• Adapt core messaging to local language. • Farming calendar identifies screening tools to pilot.	• Health Education Lead • CHWs • Local translator/communications support
	Deliverable **Project brief, updated goals, and initial training plan.**	
Week 2	• Develop screening toolkit (checklist, referral cue card) • Develop patient education one-pager.	• Clinical Lead • CHW Coordinator • Graphic/Materials Designer
	• Map referral pathways • Draft simple referral tracker (paper) • MOUs with facilities	• District Health Officer • M&E Lead • Facility Liaison.

	Deliverable **Screening toolkit draft, referral tracker template, and draft MOUs.**	
Week 3	• Train pilot cohort (CHWs, gatekeepers, and selected clinicians) on recognition, triage, referral process, and confidentiality.	• Training Lead; Master Trainer(s); District IT if digital tools are used.
	• Produce and print education materials. • & Screening cards for pilot communities.	• Materials Team • CHW Coordinators.
	Deliverable **Training sessions completed; materials distributed.**	
Week 4	• Implement pilot in 5–3 communities; • Begin screening • Rapid referrals.	• CHWs • Gatekeepers • Clinic Liaisons
	• Establish weekly check-ins to troubleshoot • Capture early data.	• Field Supervisors • Data Clerk.
	• Deliverable • First wave of pilot data; initial qualitative feedback.	

Week 5	• Set up simple data capture routines • Train clinicians on data entry and privacy steps.	• Data Manager • IT Support • Clinician Lead.
	• Refine screening tools based on Week 4 feedback.	• Training Lead • CHW Supervisors.
	Deliverable **Revised screening tools; data entry guidelines.**	
Week 6	• Mid-Pilot Review • Assess time-to-referral • Referral completion • Community reach • Adjust rollout plan.	• M&E Lead • District Manager • Gatekeeper Lead
	Deliverable **Mid-point performance report; action plan for next phase.**	
Week 7	• Expand to an additional 7–5 communities • Scale outreach activities (markets, schools, farms).	• Community Outreach Lead • CHW Supervisors.

	• Strengthen feedback loops • Ensure facilities report test results • Status back to chws within 7–5 days.	• Facility Liaison • Lab Coordinator.
	Deliverable **Expanded pilot; feedback loop operational.**	
Week 8	• Conduct targeted training refreshers that focus on triage accuracy and patient-centred communication.	• Training Lead • Master Trainers.
	Deliverable **Refresher sessions completed; updated job aids.**	
Week 9	• Implement simple patient diaries or onset-tracking tools for symptom timing.	• CHWs • Education Lead.
	Deliverable **Diary tools distributed; initial collection starts.**	
Week	• Verify data quality • address missing data and inconsistencies.	• Data Manager • Field Supervisors

	Deliverable **Dashboard prototype; data quality report.**	
Week 11	• Community engagement push to sustain momentum (gatekeepers as champions; school programs; farmers' groups).	• Community Engagement Lead • Gatekeeper Lead..
	• Prepare for district-wide expansion pending Week 12 review.	• District Manager; Program Leads
	Deliverable: **Engagement events planned; expansion plan.**	
Week 12	• Final evaluation of the -12week pilot • Compile lessons learned, success stories, and remaining gaps.	• M&E Lead • District Manager • CHW Coordinator.
	• Decide next steps • scale, sustain, or adapt.	• SOP Steering Committee.
	Deliverable **-12week evaluation report; go/no-go decision with next-phase plan.**	

Key outputs across weeks

- Screening toolkit and referral tracker implemented
- Training completed for pilot cohorts
- Early detection metrics collected (time-to-referral, referral completion)
- Feedback loops established with facilities
- District dashboard prototype and data quality checks

Long term - Implementation Plan

(Phased approach)

Phase 1: **Foundations** **(0–3 months)**	Establish a district/community implementation team with CHWs, gatekeepers, clinicians, and program managers.
	Develop and approve messaging, screening tools, and referral cards.
	Train 2–3 pilot communities of rural residents, gatekeepers, and CHWs.
	Set up a simple referral tracker and dashboard.
Phase 2: **Pilot and refine** **(4–9 months)**	Roll out CBED activities in 4–6 additional communities.
	Implement and test the referral pathway with rapid feedback loops.
	Start quarterly data reviews to adjust training and messages.
	Begin community engagement events aligned with harvests and market days for higher reach.

Phase 3: **Scale and optimise (10–18 months)**	Expand to all target communities in the district or region.
	Consolidate data systems, improve feedback timeliness, and strengthen transport partnerships.
	Evaluate impact on time-to-evaluation and early detection rates; refine materials and training accordingly.
Phase 4: **Sustain and integrate (beyond 18 months)**	Institutionalise CBED as a routine activity within primary health outreach.
	Explore integration with digital tools (SMS reminders, voice messages) if feasible.
	Maintain ongoing community engagement and advocate for resource allocation to support early detection.

Ready-to-Use Templates

Template A

Screening Checklist for CHWs and Gatekeepers Language: Local language + simple English; visuals recommended

Patient information	
Name:	
Age:	
Sex:	
Residence (village/ward):	
Contact number	
Exposure/history	
Occupation (agriculture, footwear use)	
Exposure to soil/grass barefoot? (Yes/No)	
Duration of symptoms (days/weeks):	
Prior skin lesions? (Yes/No)	
Lesion assessment	

Location (foot, hand, leg, other):	
Size/extent (cm):	
Pain: None / Mild / Moderate / Severe	
Presence of nodules, swelling, Yes/No	
sinuses: Yes/No	
Any grains or grains-like material observed? (Yes/No)	
Mobility impact: Yes/No	
Red flags for urgent referral	
Rapid growth, multiple lesions, functional impairment, signs of secondary infection	
Action: Refer now to nearest PHC/clinic	
Referral action	
Referred to facility: Yes/No	
Date of referral:	
Referral ID (if provided by facility):	

Notes

Template B

Referral Card (pocket-sized)

Front	
Patient initials or ID	
Brief symptom summary	
Date of first contact	
Referred to: [Facility name]	
Urgency: 7–14 days target	
Contact person at referring site: [Name, phone]	
Back	
Handoff checklist:	
Symptoms observed	
Any specimens collected (if applicable)	
Basic wound care guidance given	
Safety/privacy notes	
Follow-up plan and next steps	

Template C

Education Materials

(One-Page, lay language)

Headline: Early detection saves limbs — Mycetoma Awareness Sections:

What is mycetoma (simple definition)
Signs to watch for (painless swelling, nodules, draining sinuses with grains)
Why early care matters (better outcomes, shorter treatment)
What to do if you notice signs (where to go, whom to contact)
Basic wound care and hygiene
Transport and follow-up reminders
Local resources and support contacts Include: visuals for common signs, in-language captions, farm calendar-aligned outreach tips

Template D

Education Poster Series (3 designs)

Design 1: Signs to look for

Design 2: When to seek care

Design 3: How referrals work (simple flowchart)

Template E:

Simple Referral Tracker (paper form) Fields:

Referral ID	
Symptom onset date	
First contact date	
Referred facility	
Referral method (in-person, phone, paper)	
Date tested (if applicable)	
Result status (pending/positive/negative)	
Date treatment started	
Follow-up due date	
Notes	

and visuals.