

EMT Just In Time Training Modules, COVID-19

Module A: Layout and Planning of COVID Community Facilities

 MODULE LENGTH

90 mins

LEARNING OUTCOMES

- Outline the key characteristics of community facilities for the care COVID-19 patients
- Describe the main components of healthcare readiness for community facilities
- Identify the main factors for EMTs to consider when selecting a potential location for setting up COVID-19 community facilities
- Apply relevant design calculations and assumptions for EMTs establishing community facilities in diverse settings

MODULE OVERVIEW

	Topic	Method	Time
1	Introduction	Presentation	3 min
2	Variables that impact on the design of community facilities	Presentation and discussion	5 min
3	The 4 S's	Presentation and discussion	10 min
4	Site selection factors	Presentation and discussion	10 min
5	Qualitative rating of factors	Group ratings activity	10 min
6	Building the facility	Presentation and discussion	10 min
7	Design calculations	Mini case studies	40 min
8	Summary	Presentation	2 min

MODULE PURPOSE

This module is a training application of the operational guidance for 'Community Facilities to Care for COVID-19 Patients' which was developed by the EMT Secretariat with support from other WHO departments. This guidance complements the Severe Acute Respiratory Infections Treatment Centre guidance offering an alternative solution at community level.

The target training participants are those EMT personnel involved in site selection and planning roles, including team leaders, clinical managers and operational support staff. The main considerations are introduced for how EMTs can support a flexible, adaptable and easy to set up modular approach. The focus is on mild and moderate cases, but includes the potential expansion to treat severe and critical patients.

MATERIAL & EQUIPMENT

Audiovisual

Trainer should insert own photos, data slides and video footage to show examples of potential sites for setting up a community facility

Flip-charts, cards, markers

BoQ calculation excel tools

Printouts of Core area, several Suspected and confirmed patient Wards examples

Google earth (if available)

SUPPORT DOCUMENTS

Participants should, as a minimum, read Chapter 1 of 'Community Facilities to Care for COVID-19 patients'

SARI : Severe Acute Respiratory Infections Treatment Centre
<https://apps.who.int/iris/rest/bitstreams/1273270/retrieve> ,

Participants are also encouraged to enrol for the following Open WHO e-course :
<https://openwho.org/courses/SARI-facilities>

MODULE ACTIVITIES

Topic	Method	Notes for delivery
Introduction (3 mins)	Presentation	<p>Slides 1-2. State the session learning outcomes and explain the purpose of this module.</p> <p>This session is about becoming familiar with the recommended models and approaches for establishing Community facilities for COVID care, as applied to the types of situations that the EMT is potentially operating in.</p>
Variables that impact on the design of community facilities (5 mins)	Presentation and discussion	<p>Slide 3-5. Ask participants the question, “What are the main variables that impact on design selection for COVID community facilities?”</p> <p>Trainer states that the EMT should first of all consider what the overarching role of the facility is intended to be within the local or national health strategy. EMTs must, in virtually all cases, be integrated properly within the health system of the affected country. This discussion links to Just In Time Module F, where the potential roles of the EMT as a surge support option are explored in more detail.</p> <p>The two next most important factors in the design are patient typology and expected bed capacity.</p> <p>Other additional factors include whether the structure is pre-existing versus new, and what options are available in terms of construction materials.</p>
4 S’s (10 mins)	Presentation and discussion	<p>Slide 6 - 12. The main considerations for how the EMT, as a surge responder, can support the readiness of healthcare facilities, including COVID community facilities can be characterized as the 4 S’s (staff, supplies, structure, systems).</p> <p>The trainer facilitates a discussion between participants on each of the four S’s, looking at how each might be applied in the EMT’s local operating context. Where useful, the trainer can refer to the corresponding slides (noting that structures may need only cursory discussion since this has been covered at length already):</p> <ul style="list-style-type: none"> • Slide 7. Staff. Staffing patterns should be pre-established to ensure effective coverage and shifts should be monitored to ensure compliance. Assignment of insufficient staffing could impact the ability to effectively deliver services over time • Slide 8. Staffing chart. Depending on the magnitude of the implemented facility and availability of external support for service delivery, a selection or all of the following functions should be considered: Hospital Manager, Senior Medical Doctor, Nursing Manager, Operational support Lead, IPC/WASH-lead, Rehabilitation lead, Supply Chain Manager, Data manager, Epidemiologist, Psychosocial Support , Pharmacist, Staff Health Doctor, X-Ray Technician, Laboratory

Technician, Kitchen Staff, Cleaners and helpers, Security guards, Warehouse Staff, Technical Staff, Biomedical engineer, Laundry.... This non-exhaustive list explains which functions or profiles should be considered for each facility to ensure effective management and maintenance of the centre. These functions could be combined or expanded, based on the objective or magnitude of the facility, local custom or availability of the staff profiles required.

- The trainer can outline the core staffing requirements for all proposed setups of wards in a CF COVID-19. It shows the suggested staff for each clinical module based on a 40-bed module (mild/moderate and severe) or for a 20 beds isolation of contacts and ICU module. For clarity we use the Full Time Equivalent (FTE) for those functions that are suggested to be available in shifts. 1 FTE equals a staff member working 40 hours per week in shifts of 8 hours.
- Slide 9. **Substance.** In terms of development and maintenance of medical and operational support services, substance is composed of equipment and supplies, including medical equipment, consumable medical equipment, pharmaceuticals and nonmedical supplies needed to provide clinical care in line with the Community facility treatment centre, patient profiles and services provided and taking into consideration logistics and other possible constraints.
- **BoQ Calculators.** WHO has developed a set of kit-lists for treatment of patients with COVID-19. There are three main tools PPE, Medical devices and Drugs calculators that has been adapted to community facilities. Specifications for critical medical equipment can be found at WHO website .
- Slide 10. **Structure.** This slide is a recap of the discussion earlier in the session, focusing on the physical layout of community care facilities.
- **Structures BoQ.** The EMT Secretariat developed a Structure and support systems calculators, that provides specific, focused outputs, including detailed quantifications of structures and operational support components needed
- Slide 11. **Systems.** In terms of policies, standard operating procedures and protocols that define the operating model of each community facility treatment centre, support systems, the ability and the limitations in implementing standards on quality of care and the interaction with other systems.

Slide 12. To wrap-up this section of the session, the trainer can ask the group to reflect on the importance of team leadership and clinical management working closely with operational support managers. Clearly a critical component of COVID community facility readiness involves support services such as logistics, WASH, waste management and others. At any given moment, the list on screen are cross-cutting to several of the 4 S's.

		<ul style="list-style-type: none"> • Communication • Decentral stocks and restocking • Food distribution • Oxygen system • Air flow Ventilation system • Water supply • Waste management • Sanitation • Hygiene • Environmental cleaning • Dead body management • Laundry • Fire safety system • Electricity/illumination
<p>Site selection factors (10 mins)</p>	<p>Presentation and discussion</p>	<p>Slide 13 -19. The trainer or a relevant organizational manager asks the participants to suggest different factors to consider when the EMT is selecting a potential location for a setup of a community facility.</p> <p>The following slides can be used to prompt discussion and ideas with the group. Not all may be necessary, and the trainer should adapt to the EMT’s local operational context.</p> <ul style="list-style-type: none"> • Slide 14. Location • Slide 15. Other considerations • Slide 16. Other considerations cont’d • Slides 17-18. Additional factors to consider If an existing facility is selected. • Slide 19. Main advantages and disadvantages of a list of potential community facilities
<p>Qualitative rating of factors (10 mins)</p>	<p>Group ratings activity</p>	<p>Slide 20. Trainer splits the group into sub-teams and explains the task instructions for the quantitative ratings activity .</p> <p>Facilitator distributed a number of different layout scenarios in which the EMT might be asked to establish a community care facility., one for each group. The trainer also hands out sets of simple ratings (smiling, neutral and sad faces).</p> <p>Participants are asked to assign a rating (smiling, neutral or sad faces) to each factor for their assigned community facility. They should be encouraged to refer to the previous slides as reference..</p> <p>Where time permits, the trainer can give groups additional layouts to apply the same simple rating process.</p> <p>Slide 21. To debrief the activity, the trainer facilitates a discussion to compare the ratings which the participants assigned.</p>
<p>Building the facility (10 mins)</p>	<p>Presentation and discussion</p>	<p>The following characteristics can then be discussed in relation to the build phase.</p>

Where useful, the trainer can refer to the corresponding slides 22-38, however he/she should ensure that this is tailored to the specific context and roles that the EMT is fulfilling as a surge partner of the affected health authorities. Some characteristics may have more relevance for the EMT's context than others, not all slides may be necessary. Alternatively, some/all of this content may be covered in an add-on session at a later stage..

Slides 23. Main building blocks:

- Slide 23 shows the main building blocks for a proposed centre layout that is composed of a core area (for operational support and coordination), a triage area, and variable modules for 40 bed or 20 bed wards plus 1 block of 20 beds that can be used as a Specific Inpatient Profile Area (SIPA) for children or people requiring specialized or ICU care
- Slide 24 shows an example of a 180 Bed layout mixed facility with 2 Wards for Suspected patients (20 Beds each) plus 2Wards for Confirmed patients (40 Beds each), and an additional SIPA Ward (20 Beds)
- Slide 25 shows how the clinical aspects of screening and triage might be layed out
- Slide 26. Shows the same layout example of the full facility in plan view

Slide 27. Modularity:

- The trainer or a relevant EMT manager then explains the key points from the design , one of them being the modular approach that enables the community facilities to adapt to diverse needs and requirements including space availability, number of patients, local conditions including security. Modules can also be adapted to function within and/or augment existing health facilities.
- Stress the importance of the EMT's ability to expand and/or repurpose facilities. This area can be augmented by the addition of more modules surging bed capacities to 80, 120 or more and adapted for either suspect or confirmed cases

40 Bed WARD Confirmed

Module of 40 bed capacity in a structure for confirmed cases with two Toilets, two showers, lavatories, power supply and lighting services. Storage space available at premises This type of module can accommodate Confirmed patients of different degrees of severity: step down, mild, moderate, severe and critical. Each module is conceived for one type of gender users.

20 Bed WARD Suspected

Module of 20 bed capacity in an isolation room structure for separate case management. Independent toilets and shower for each patient, power supply and lighting services. This type of module can accommodate suspected patients waiting for results and contacts of different degrees of severity: mild and

moderate, each module is conceived for one type of gender users.

Slide 28. **Scaling up approach:**

- Modularity enables community facility expansion to be planned in advance and established in phases. Community facilities should be capable of accommodating high numbers of patients with mild and moderate case severity and equally scalable to existing community settings. Scaling up enables establishment of new treatment areas while maintaining continuity of care. The figure demonstrates how to scale up a community facility COVID-19 so that previously established modules remain functional as bed capacity is surged in progressively.

Slide 29. **Separation:**

- Another key design characteristic is the separation of High and Low Risk Areas with both physical barriers and secure zones. Visual lines of sight between risk areas should be maintained if possible, to ensure that clinical staff can observe patients in other areas without taking additional precautions, such as the donning or doffing of additional Personal Protective Equipment (PPE). Lines of sight between risk areas serve to:
 - **Minimize** staff time required in higher risk areas
 - **Minimize** overuse of PPE
 - **Enable** more continuous patient monitoring
 -]Minimize overuse of PPE that will have a further impact on supply shortages(as per WHO IPC COVID19 recommendations « Rational use of personal protective equipment for coronavirus disease 2019 (COVID-19))
- Risk areas: Clearly divide the facility into distinct, exclusive areas:
 - A. High Risk
 - B.Low Risk
 - C.Low Risk Observation paths
- Slide 30. **Patient flow.** Separate flows for confirmed and suspected patients are recommended, in case it is a shared facility with confirmed and suspected wards .
SCREENING AREA: a person presenting only with history of confirmed contact but no symptoms are sent home for quarantine (e.g. a person that assisted at home a COVID-19 patient)
HOSPITALIZATION SUSPECTED CASES TREATMENT AREA:
 - **INCONCLUSIVE TEST:** Patient with an inconclusive test (“probable case”) remain admitted in this area until further tests

- PATIENT WITH POSITIVE TEST: will be transferred to confirmed cases treatment area
- PATIENT WITH NEGATIVE TEST AND CLINICAL FINDINGS COMPATIBLE WITH OTHER DISEASES: they are referred to other health facilities if isolation is granted (e.g. a patient with tuberculosis)
- PATIENT TESTED NEGATIVE BUT PRESENTING COVID-LIKE CLINICAL FINDINGS: they remain admitted in this area until recovered

HOSPITALISATION CONFIRMED CASES TREATMENT AREA:

- Only patients with a positive lab result will be admitted here After recovery, patients can be transferred to a step down facility if available and indicated, or discharged

REFERRALS:

- Any patient in need of referral to another hospital from this facility will require proper isolation measures.
All discharges and referrals will be based on a medical decision.

- Slide 31. **Staff flow and visitors:**

- It is recommended to have some staff flow routes in only one direction and to avoid crossing paths. Different routes should be used by staff and visitors versus patients. It is also important to control the operational support flows with a special consideration placed on waste collection routes.
- Trainer points out the different staff flow routes on screen and asks participants to comment. In the event that a scaling up of the facility is needed, the EMT would be advised to collect staff every 2 wards (80 beds confirmed); for this an extra doffing area will be set up. This increase will ensure a safe scalability of the facility, allowing the possibility of compartmentalised staff for each 2 wards, so that if an incident happens it is possible to identify a specific area and a specific number of people affected; the distance walked in the high risk zone would be minimised in case of large facilities. Please bear in mind that staffing and equipment will need to be outsourced for implementing this strategy
- **Visitors flow.** The trainer points out places where potential visitors can have contact with patients. This option is only advised for confirmed patients to reduce the risk of cross contamination

- Slide 32 shows isolation of contacts and Mild suspected cases WARD 20 Beds
- Slide 33 shows Mild and Moderate Confirmed cases WARD 40 Beds
- Slide 34 shows Severe Confirmed cases WARD 40 Beds

		<ul style="list-style-type: none"> • Slide 35 shows Critical Confirmed cases WARD 40 Beds • Slide 36 shows Step down cases WARD 20 Beds • Slides 37. Model M 180 BEDS (100x80 meters). The trainer explains that a model of 180 beds will be used for listing the main areas of the COVID19 Community facility model • Detailed layout: <ul style="list-style-type: none"> ▪ <u>AREA 1 (Green) : Reception & Screening & Triage Area.</u> Reception, screening and triage station. The screening process involves evaluation of the patient using the standardized case definition for suspected case of COVID-19. The triage system will sort the patients based on the severity of their disease.<u>AREA 2 (Blue): Technical (Clinical & Ops. Support) area.</u> Staff entry, coordination, clinical and operational supports services areas, as the main component of the core area of the facility. This area could be expandable as the facility grows in size. ▪ <u>AREA 3: Wards.</u> The wards offer care for suspected patients in individual isolation and for confirmed patients in groups. They are expandable and can accommodate between 20 to 40 beds. <p>Slide 38. Build sequence:</p> <ul style="list-style-type: none"> • Recommended building sequence, constructive elements, and scaled gridded plans that detail module construction. Measurement tools such as surveyors’ tape and/or laser measurement tools can be utilized to adapt the illustrated layouts to identified locations and facilitate site clearing and levelling (if required in outdoor settings). Preparation of land will facilitate the build phases of the work, such as water-drainage, assembly of tents and structures, etc.
Design calculations (40 min)	Mini case studies	<p>Slides 39-40. Split the participants into four groups. Assign the exercise task on slide 36 task to two groups, and the task on slide 37 to the remaining two groups. For example:</p> <ul style="list-style-type: none"> • Groups A & B : Community Facility 180 Beds layout • Groups C & D : Community Facility 180 Beds layout <p>The trainer, and other members of the training support team, facilitate the completion of the following steps, in sequence. For each step, the groups should be given the appropriate reference tools, which may need further explanation.</p> <p>First step: Ask participants to produce a layout according to the description given in each task. They should use printouts for representing the facility on a flipchart (using printouts of Module A).</p> <p>Second step: they should calculate estimated dimensions for the given model scenario (using the COVID19_CTC_Perimeters-Model)</p>

		<p>Third step: Using tools and tables given they should calculate Structures, Staff & Substance (using the excel BoQ tools and tables, annexes 2 and3 and the 4S's Clinical Modules Sheets).</p> <p>Fourth Step: They should evaluate if the assigned location is a suitable place based on the dimensions given (using the corresponding files of KML Location folder for each group and Google earth software (note: this needs to be installed beforehand).</p>
Summary (2 mins)	Presentation	Slides 41-42. The trainer wraps up the dialogue and summarises the main themes of this introductory session.

