TOOL 1:

Your role in the AMR surveillance network

The Fleming Fund

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The Open University

TOOL 1: YOUR ROLE IN THE AMR SURVEILLANCE NETWORK

Antimicrobial resistance (AMR) is recognised as one of the most serious global threats to human health in the 21st century. It is defined as the ability of a microorganism (bacteria, viruses, parasites) to stop an antimicrobial (an antibiotic, antiviral or antimalarial) from working against it.[9]

AMR surveillance provides early warning in health systems about the spread of new resistant strains of bacteria. It is vital to slowing down bacterial resistance.[10] Surveillance systems have been set up around the world to examine this spread at local, regional, national and international levels. For example:

- At the local level, AMR surveillance data can help inform the best treatment and care for a patient in a hospital.
- At the regional level, it can be used to help sites – hospitals, clinics, veterinary surgeries and so on – to improve service delivery and identify gaps in provision.
- At a national level, the data highlights those populations most at risk, guiding national policy, planning and resource allocation.
- Each of these levels are brought together in an interconnected network so that data can be shared globally to co-ordinate effort around the world to slow the rate of AMR.

The responsibility for AMR surveillance is across these various levels of the network and across sites within each level: for example, clinics, hospitals, laboratories or pharmacies.

Surveillance work is carried out by a number of professionals, often with different specialisms, who work directly together (such as a team in a hospital laboratory) or indirectly (such as a clinician and a laboratory team).

For example, clinicians or nurses gather samples and send these to a laboratory, where technicians may perform an AMR susceptibility test. The results of the tests are reported back to the clinicians (and/or the patients), who then need to decide what the best treatment to offer to the patient is. Likewise, in animal healthcare settings, the veterinary field officer collects samples from animals and sends them to the veterinary microbiologist for testing, processing and reporting results. In both cases there may also be active surveillance, such as taking swabs from healthy humans or animals to look at carriage of resistant organisms.

Ideally, the roles or sites within a network should include all expertise and effective inter-working procedures necessary for successful AMR surveillance. However, in many countries, the concept of working across teams and in a network is not well-supported or practised. Many professionals are not clear about how their work fits with the network and what value that they contribute. In addition, sometimes it is not clear who has the ownership of specific tasks.[11] The following activities will help address these issues.

PROBLEM: Professionals in AMR surveillance systems do not work in a connected way where roles and teams function together, and do not fully understand their role in relation to the overall AMR system or network.

OBJECTIVE: Tool 1 helps professionals to understand their role in the AMR network, and identify where and how they contribute to the AMR surveillance process. In addition, it helps them to identify new roles to bridge the gaps in the current network and covers strategies for effective communication across roles.

9 World Health Organisation (WHO) (2020) *Global Antimicrobial Resistance and Use Surveillance System (GLASS) Report: Early Implementation 2020,* Geneva: WHO [online]. Available at https://www.who.int/publications/i/item/9789240005587 (accessed 18 August 2021).

10 O'Neill, J. (2016) T*ackling Drug-Resistant Infections Globally: Final Report and Recommendations,* Review on Antimicrobial Resistance, London: Wellcome Trust/HM Government [online]. Available at https://amr-review.org/sites/default/files/160525_Final%20paper_with%20cover.pdf (accessed 18 August 2021).

11 Charitonos, K., Littlejohn, A., Kaatrakoski, H., Fox, A., Chaudhari, V., Seal, T. and Tegama, N. (2019) 'Technology-supported capacity building on amr surveillance: findings from the pilot phase', internal report, Milton Keynes: The Open University

MATERIALS NEEDED IN TOOL 1

In-person meeting:

- Flipchart paper
- Marker pens
- Adhesive (to hang paper on walls)
- Laptop, projector and internet connection (for PowerPoint slides; alternatively, use an overhead projector and printed transparencies of slides)
- Printouts of figures and tables, depending on the task

Online meeting:

- Internet access and broadband speed
- PC, laptop, tablet or mobile phone
- Videoconferencing tools (such as Zoom, MS Teams, Skype, Cisco Webex, Whereby or Google Meet)
- Access to online whiteboards (such as Google Jamboard, Miro, MS Teams whiteboard or the Canvas Chrome app)

Task 1.1: Networking – how your work on AMR connects to the work of others

Time: around 90 minutes

Group size: five to eight participants and a facilitator

Seating arrangement: in a group, pairs or individually

In this task, participants work together to identify the local AMR network and understand their own and other people's roles and responsibilities within the network.

As the facilitator, you should do the following:

1. Ask participants to individually consider their own role or position, and write down their three main responsibilities, especially around contributions to AMR/AMR surveillance.
2. Create a list of all the roles and positions in the group that are associated with AMR.
3. Ask each participant to select one of other roles or positions listed that they feel more connected to in terms of AMR task. Encourage each participant to share in the group in what ways they are connected to the other role, such as through daily tasks or common responsibilities. Clarify any ambiguities about roles or responsibilities in your group.
4. Work with the whole group and place all the roles or positions identified in a diagram. This way you can start to visualise your group's network with the various connections. Use flipchart/butcher's paper in this task.
5. Facilitate a discussion in the group and highlight in the diagram the roles or positions that have more connections compared with other roles in this network. Make a note of the roles without any connections.
6. Ask participants to work in pairs and consider other roles or positions that exist in your organisation that contribute to AMR or AMR surveillance. Add these to the diagram.
7. Note the connections between the various roles or positions, and also make a note of the roles without any connections. The diagram you are creating reflects a draft diagram of your local AMR network: keep it, because you will revisit it in the Task 1.2.
8. As a group, consider the various levels of AMR surveillance task – local, regional, national and global – and discuss whether any of the existing roles or positions in the team, as drawn in the diagram, reach any of these levels. Participants can start with their role within their local network and then extend it to regional, national and global networks. Encourage participants to think about their position relative to all of these networks to help them understand their role or position overall.

AMR network	AMR network
Paediatrician	Veterinarian or veterinary field officer
Infectious disease physician	Microbiologist
Microbiologist and clinical microbiologists	Microbiology supervisor
Information technologist	
Clinical pharmacist	

Figure T1.1 Examples of local AMR networks (adapted from Cogen et al., 2020).

Local AMR network in field practice	Local AMR network in veterinary clinic
Farmers	Veterinary clinicians
Field veterinarians	Veterinary technicians
Veterinary technicians	Veterinary surgeon
Agro-vet shop	Human laboratory, technician
Vet laboratory technicians	Vet laboratory technicians

Figure T1.2 Examples of a local AMR network in the animal health sector in Nepal (courtesy of Dr Shiva Khanal and the team based at the Nepal Pet Service centre).

Depending on how familiar the participants are with the roles or positions in the organisation, you may want to provide them with an example of a local network, such as the examples in Figures T1.1 and T1.2. You can adapt them to your own local network in your organisation. Share the following examples with the group members and ask them to list roles that are associated with the AMR task at all levels.

FOLLOW-ON ACTIONS

Does your organisation have a document that clearly defines the roles and responsibilities of the teams or roles or positions involved in AMR?

- **YES**: Review the documents as a team and consider the various roles or positions and associated responsibilities in light of the discussion you had in Task 1.1. Consider any gaps in the existing roles and identify any changes in the local AMR network that may lead to positive changes in processes around AMR surveillance and necessary collaboration between roles.
- **NO**: Set aside some time as a team to create this reference document. In your institution there might be a specific committee that is responsible for developing such reference documents. Can you approach members of this committee with a suggestion to create such a document?

Note that roles and responsibilities continually evolve because of new developments in the field. Therefore, this document will require regular revisiting and reviewing.

Task 1.2: Networking – how does your role contribute to the AMR surveillance network?

Time: about 90 minutes

Group size: five to eight participants and a facilitator

Seating arrangement: in a group, pairs or individually

Effective cross-role or cross-team working within an organisation or across different sites is critical for successful AMR surveillance. This task builds on Task 1.1. and helps participants to understand and clarify how their work links to someone else's or how one team's work links to other teams in a network.

As the facilitator, you should do the following:

1. Show Figures T1.3–T1.7 to the participants and draw their attention to how different teams in a workplace or different roles in a network need to work collaboratively for effective AMR surveillance.
2. Ask the participants to work in pairs. Using the list of roles and the diagram of the local AMR network from Task 1.1, they should draw further links between roles or positions across different units in their workplace. Encourage them to draw on the examples provided and use any format that best presents the procedure of collaboration between roles and teams.
3. Display the new diagrams produced by each pair on a wall and ask participants to do the following:
   a. Note any similarities or differences between the various diagrams.
   b. Note whether any of the roles or positions have a higher number of connections to other roles. Discuss in the group why that is. What role do the people in these positions serve in the AMR network?
   c. Share observations about whether there is any disconnection between roles. Discuss as a group why this is the case and how people in such roles can work more collaboratively.[12]

12 If you are doing this task online, participants can draw their diagram, take a photo of it and share it in the chat section of the online tool.

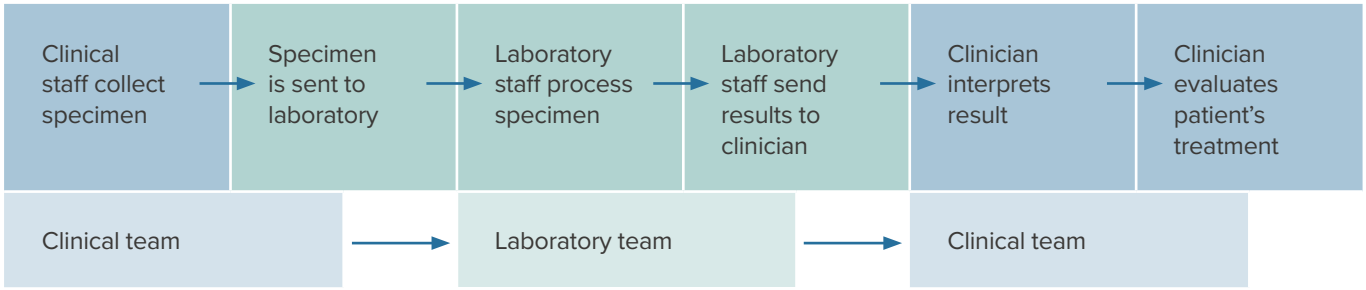


Figure T1.3 An example of collaborative work in a hospital.

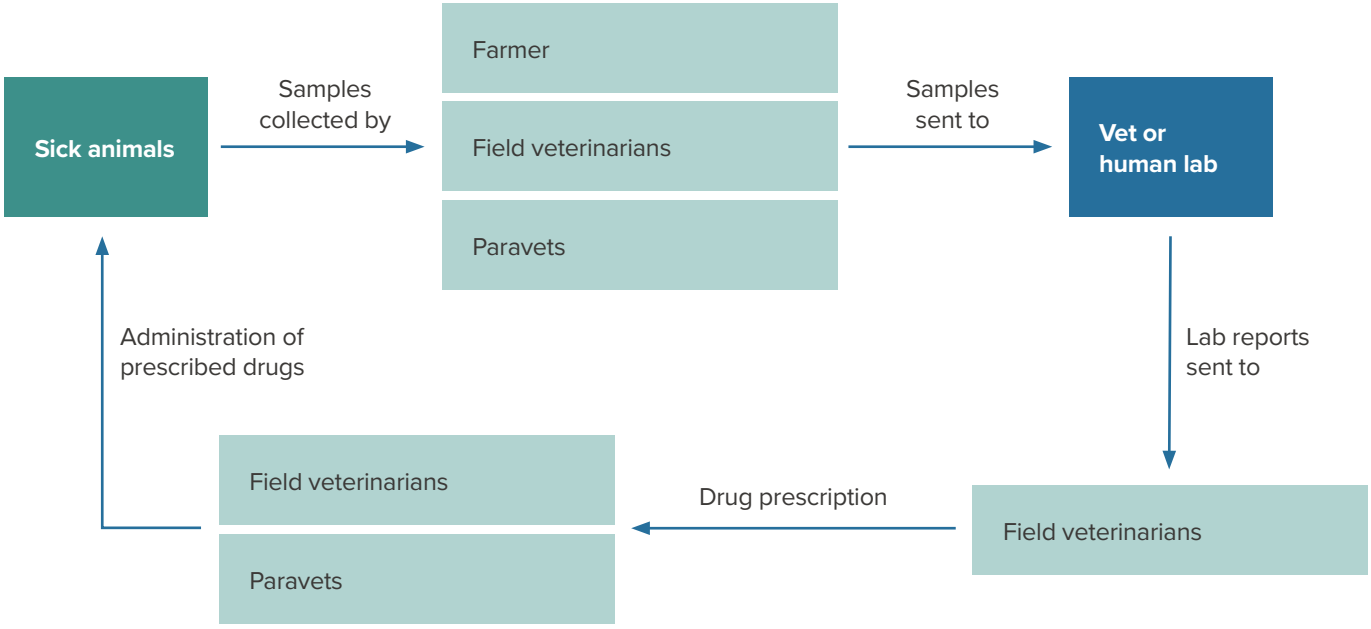


Figure T1.4 An example of a collaboration between farmers, vets, paravets and laboratory technicians in field practice for ruminants such as cattle, buffalo, sheep and goat (Dr Shiva Khanal and the team based at the Nepal Pet Service centre).

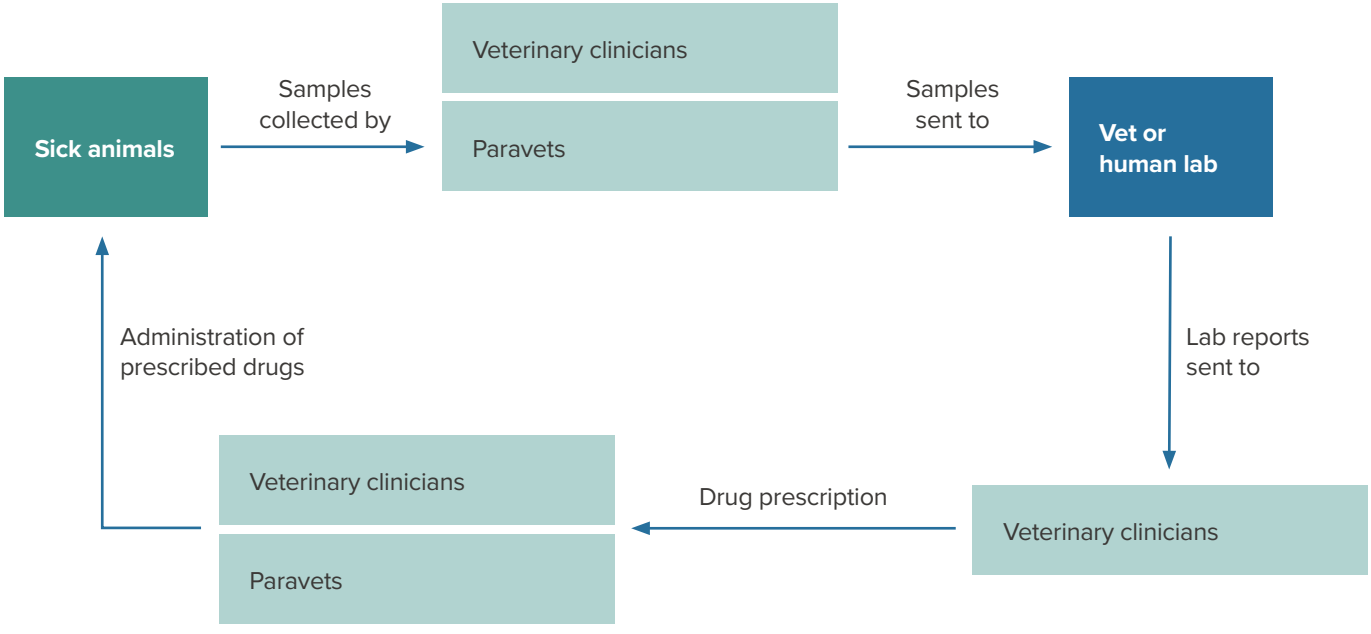


Figure T1.5 An example of a collaboration in a vet clinic (Dr Shiva Khanal and the team based at the Nepal Pet Service centre).

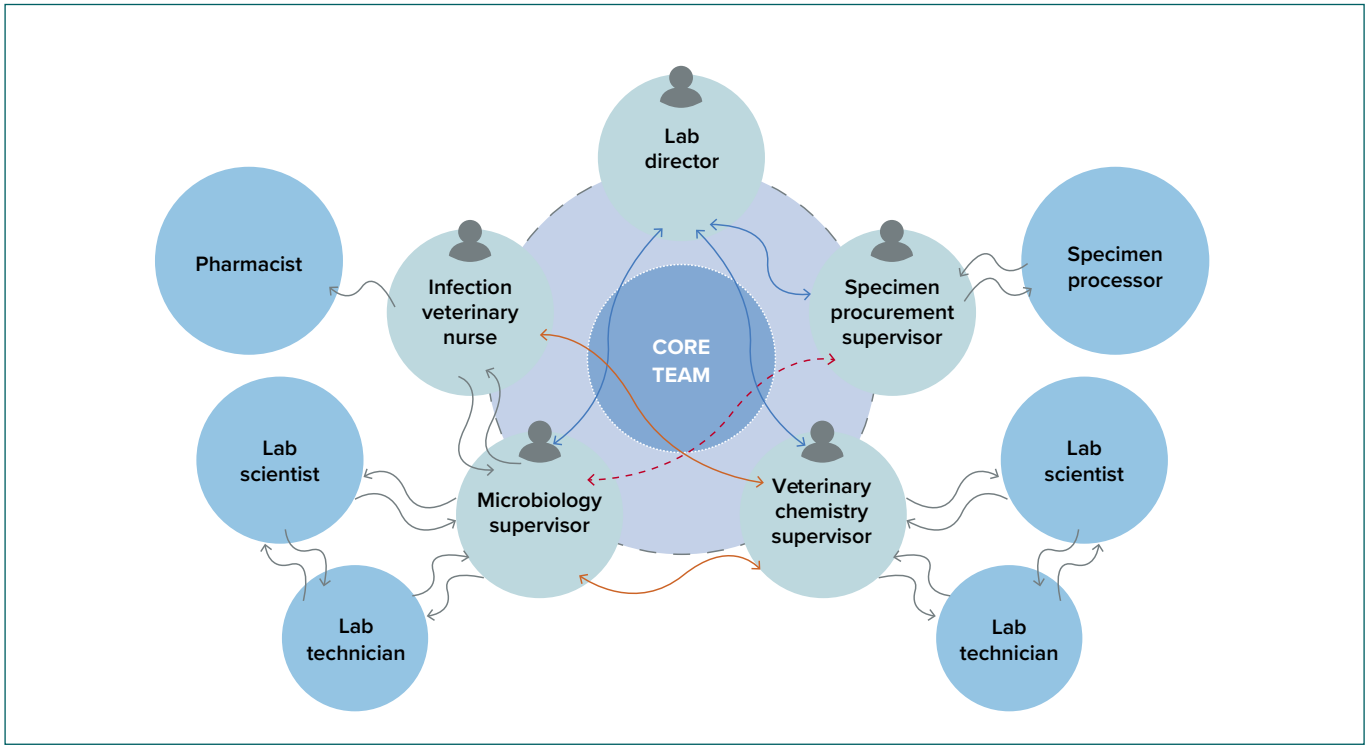


Figure T1.6 An example of collaborative work in a veterinary hospital.

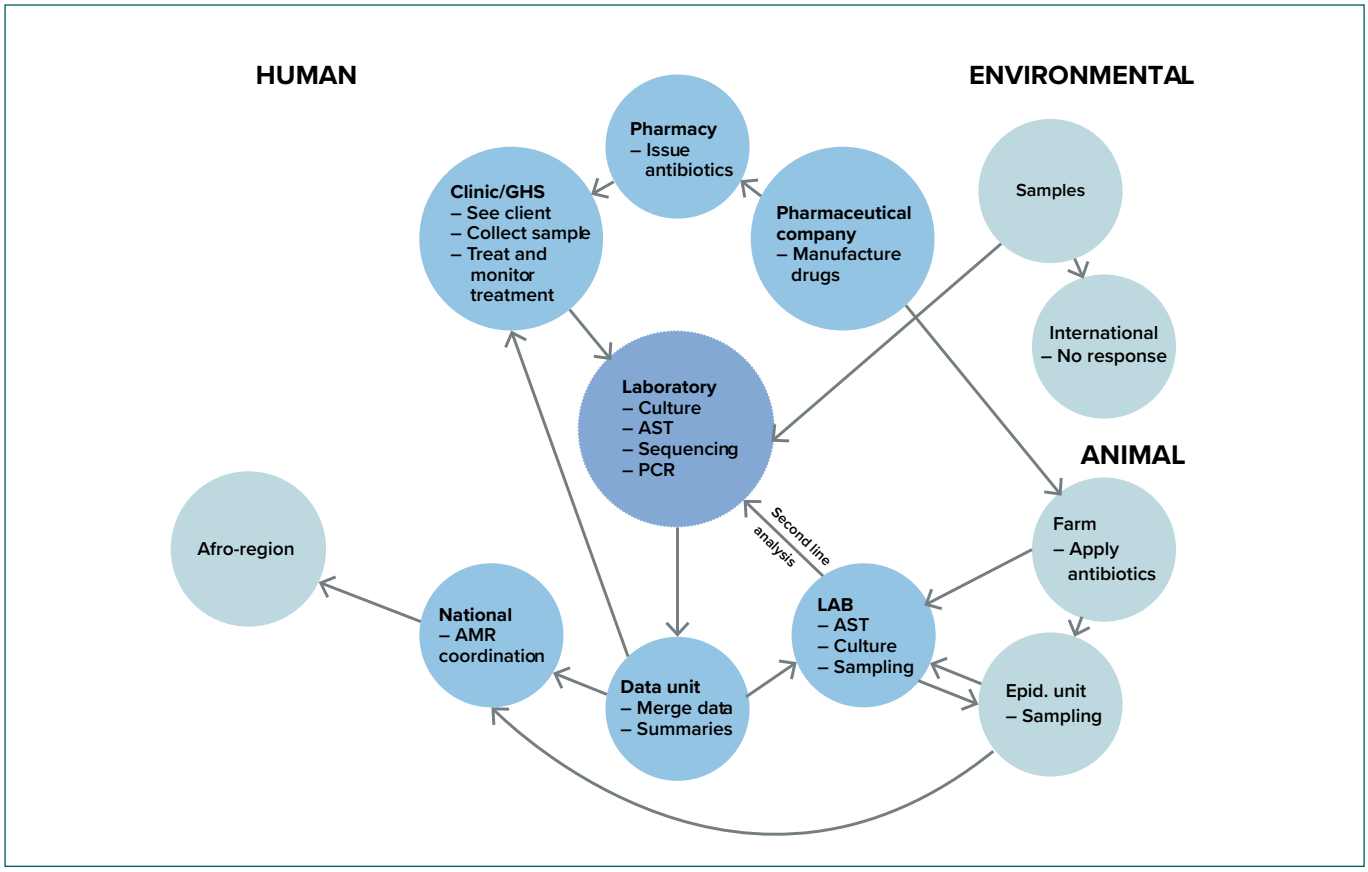


Figure T1.7 AMR surveillance systems in Ghana (drawn by Dr Sylvester Dassah, Dr Milred Adusei Poku and Mr Emmanuel Eshun in a participatory co-design workshop in Ghana, 16 July 2021).

4. Ask each participant individually to revisit their role in the team as discussed in Task 1.1, or the role of their team in the overall AMR network, and make notes on the following questions:
   a. What is your role within the team and which other members or teams do you have to work with?
   a. How does your role contribute to the overall AMR system?
   b. What might happen for the overall AMR system if you were not able to do your work well?

5. Ask the participants to work in pairs or groups of three to discuss how their roles contribute to the overall performance of the team, or how their team contributes to the overall work of the wider (regional, national) AMR network.
6. Move between the pairs or groups[13] and take note of key discussion points. Then share a summary and open the group discussion about how work between roles or teams can be strengthened – that is, what barriers must be minimised.

FOLLOW-ON ACTIONS

Create the diagram from Task 1.2 with other colleagues at work and ensure that it represents your organisation's AMR team or network of teams, and the collaboration between roles. Display this diagram in relevant offices and use it periodically to evaluate whether the inter-working is still efficient or requires any changes.

Discuss whether new roles or positions (or a re-allocation or different set of responsibilities within existing roles) are needed in your team to work more effectively with AMR surveillance across teams, units or sectors.

Task 1.3: Networking – your communications within the network

Time: about 90 minutes

Group size: five to eight participants and a facilitator

Seating arrangement: in a group, pairs or individually

The success of a surveillance system relies on many people working together. Communication between these people and effectively sharing AMR data is crucial for the progression of the AMR surveillance process. Not only is it important for professionals to engage in effective communication, but they must also be able to trust that the information provided is accurate.

As the facilitator, you should do the following:

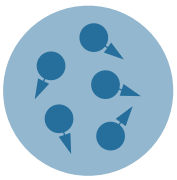
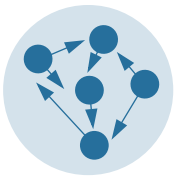
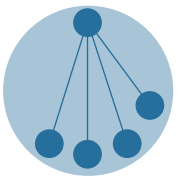
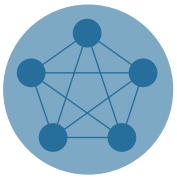
1. Ask participants to get into pairs and look at the AMR network diagram they created in Tasks 1.1 and 1.2. Ask them to highlight one or two key roles or positions that they regularly communicate with about AMR surveillance.
2. Encourage the participants to share in their small group any communication approaches that they currently follow in their day-to-day work with the roles or positions identified above.
   a. Do they follow the same approach with everyone?
   b. Do they know the communication preferences (such as preferred time or mode of communication) of people in the other roles or positions that they identified above?

13 If you are facilitating this task online, attend different break-out rooms.

3. Ask each pair to report the following back to the wider group (but encourage them to share their story without naming individuals):
   a. An example of good practice around communication that they have established.
   b. An example of a situation where there were gaps in communication, miscommunication or breakdowns in communication.
4. Note down on a flipchart paper the communication strategies that participants currently use. Also, capture in detail the various stories of any challenges they found in communication approaches. You will revisit these in later stages of this task.
5. Encourage the participants in the same pairs to discuss possible reasons that may have contributed to the reported breakdowns in their communication with the identified roles/positions. Examples of possible reasons include:
   - differences in schedules and professional routines
   - differences in norms of professional education
   - emphasis on rapid response
   - confusion and unclear expectations
   - differences in language and jargon.

   Ask each pair to report back to the wider group while you are listing the various reasons reported on another piece of flipchart/butcher's paper. Attach both papers from Steps 4 and 5 to the wall.
6. Distribute copies of Table T1.1 below, which summarises the stages of communication among team members. Give the group members enough time to familiarise themselves with each stage.

Table T1.1 Communication stages (adapted from *Nursing Times*, 2015).

	Forming	Professionals in a team try to gather information about each other's role. They do not know each role very well, so they are usually polite and avoid conflicts and disagreements. They may work independently on their tasks and not focus on the relationships between their own role and other members or roles.
	Storming	This involves communicating to gain clarity about activities and responsibilities, and how and when to work independently or collectively. Since it involves discussing responsibilities and may lead to conflicting perspectives, reactions, expressions of motions, poor listening or defending, it is called storming.
	Norming	Professionals establish 'norms of working together'. They agree on norms such as what mode of communication to use (such as emails, written reports, uploading files in shared folders, telephone); what to be communicated and by when (communication expectation); how often to have team meetings to review the AMR workflow; and what to do when conflict between roles arises. Establishing these norms facilitates connected work and collaboration.
	Performing	Once norms are established and there is a shared understanding of how the local AMR system works, the team can work together more easily and its members are able to communicate and coordinate effectively. There is also more openness and trust, and fewer time-consuming distractions based on interpersonal and group dynamics.

7. Encourage the participants to gather around the piece of paper showing the existing communication strategies from Step 4. Ask them to get into groups of three or four to discuss the question: 'What is your current stage of communication as a team at work?' Participants might find it difficult to choose a specific stage because of different experiences they have in their communication with different roles or teams. If so, suggest that they look across stages and identify specific communication practices they follow at work.
8. Revisit the list of reasons that may affect communication with other roles or positions (from Step 5). Ask the participants in small groups to propose ways that would help to minimise these barriers. Participants could refer back to the example they provided in Step 3 when making suggestions. You should make a note of the various responses you may receive from each group.

FOLLOW-ON ACTIONS

As individuals, reflect on the following periodically, and – if it is needed – discuss the outcomes of your reflection with your team members or colleagues in your local AMR network (if applicable, tie this into a regular process such as appraisal at your work):

- Who do you have to communicate with for AMR surveillance?
- What is the best approach to communicate with each person or role within your network? Do you share the same communication goals? Do you know their communication preferences?
- Do you have challenging communication with other members of the team? How can you make them less challenging?

As the facilitator, examine the stories shared by team members in Step 3 and review the list of the barriers reported in the discussion that affect communication with other roles or teams. Add any other barriers that are revealed through the stories. In your team, set-up some short-term and long-term goals to minimise these barriers and review these regularly in team meetings.

Task 1.4: Networking – your communication breakdowns

Time: about 90 minutes

Group size: five to eight participants and a facilitator

Seating arrangement: in a group, pairs or individually

Task 1.4 helps teams to reflect on communication breakdowns and the way they can be addressed for working together more effectively.

As the facilitator, you should do the following:

1. Share the Examples A–D with the participants. Give the group members enough time to familiarise themselves with the examples.

Example A

I know sometimes in very sick children, clinicians give a para-treatment. And then they write on their sample requests to the lab, 'We have begun treating with this drug.' And the good clinicians write them on the form for us [laboratory technicians] that we began treating with this drug, so test it. But at other times there's the request form issue – you can get a request with no age, no sex, no diagnosis.

(Lab technician based in a teaching hospital in a LMIC)

Example B

One time, I got a HVS [high vaginal swab] and I was supposed to let it go as normal flora, but I didn't feel good. There was no diagnosis. So I called the patient. We have phone numbers on the receipts. I called the person, but they didn't pick up, so I withheld their report – which shouldn't be so. And then, patients come to the front, and the report was not ready. So they sensed. They came. I said, 'OK. I want to see the person.' I asked, 'What is wrong with your relative?' They said, 'She has cancer.' And when you have cancer you're immunosuppressed. We should have followed with [specific drug]. But in a normal case, if we don't have any diagnosis or I didn't have a one-on-one, it would just go. And so sometimes it's difficult and we have requests forms which are not properly filled.

(Lab technician based in a teaching hospital in a LMIC)

Example C

I just called the patient, spoke with the doctor – and it's a typical example. Ideally, I shouldn't call the patient – I should call the doctor straight. There's no means of communication. You have to walk all the way to – and this one has no ward. There's no ward on this sample request form. So fortunately, I had a telephone number of the mother of the child, an 11-month-old child. And I was able to call. This child has sepsis. And so I wanted them to start treating or giving [specific drug], because a child last week – I followed up a child who passed on. It had candida in the blood, and before we could follow up with them to start treatment, the child was gone.

(Medical laboratory scientist in a central lab in a LMIC)

Example D

It is easy to buy veterinary antibiotics without a veterinarian's prescription in agro-vet shops. Veterinary has become business rather than service. Paravets administer antibiotics in a higher dose than required. They do not follow a dose, duration and withdrawal period. Only a few of them consult veterinarians regarding treatment and choice of drugs. They use highly potent broad-spectrum antibiotics for minor infections.

(Vet in an animal health clinic in a LMIC)

2. Ask participants to work in pairs and discuss the examples above in terms of the communication practices they facilitate or hinder.
    - What do the request forms serve in each of the first three examples?
    - What would the consultation with vets offer in Example D?
    - What could go wrong in each of these examples?
    - In what ways would you try to resolve the issues described in the four examples?

3. In pairs, ask the participants to share a situation where there was a miscommunication that caused confusion, misunderstanding, delay or interruption in their work, and discuss the followings:
    a. What were you trying to achieve through your communication?
    b. Why did it not go based on your plan?
    c. How did you resolve the communication breakdown?
    d. How can similar situations be prevented in the future?

4. As a group, share the factors that caused a communication breakdown and if applicable, the way they were resolved.

FOLLOW-ON ACTIONS

Review the diagram you created in Task 1.2 with your group and evaluate whether the current communication between the links you created work effectively, or require some adjustment.

As the facilitator, examine the stories shared by team members in Step 3 and review the factors reported in the discussion that caused communication breakdowns. Review the strategies or mechanisms used by members of your team to resolve these breakdowns, if applicable. Set up some short- and long-term team goals to minimise these barriers, and review these regularly in team meetings.

Note that communication strategies and mechanisms continually evolve as new people take up new roles or new situations arise, which may cause misunderstandings, delays or interruptions in your team's work. This task will require regular revisiting and reviewing.