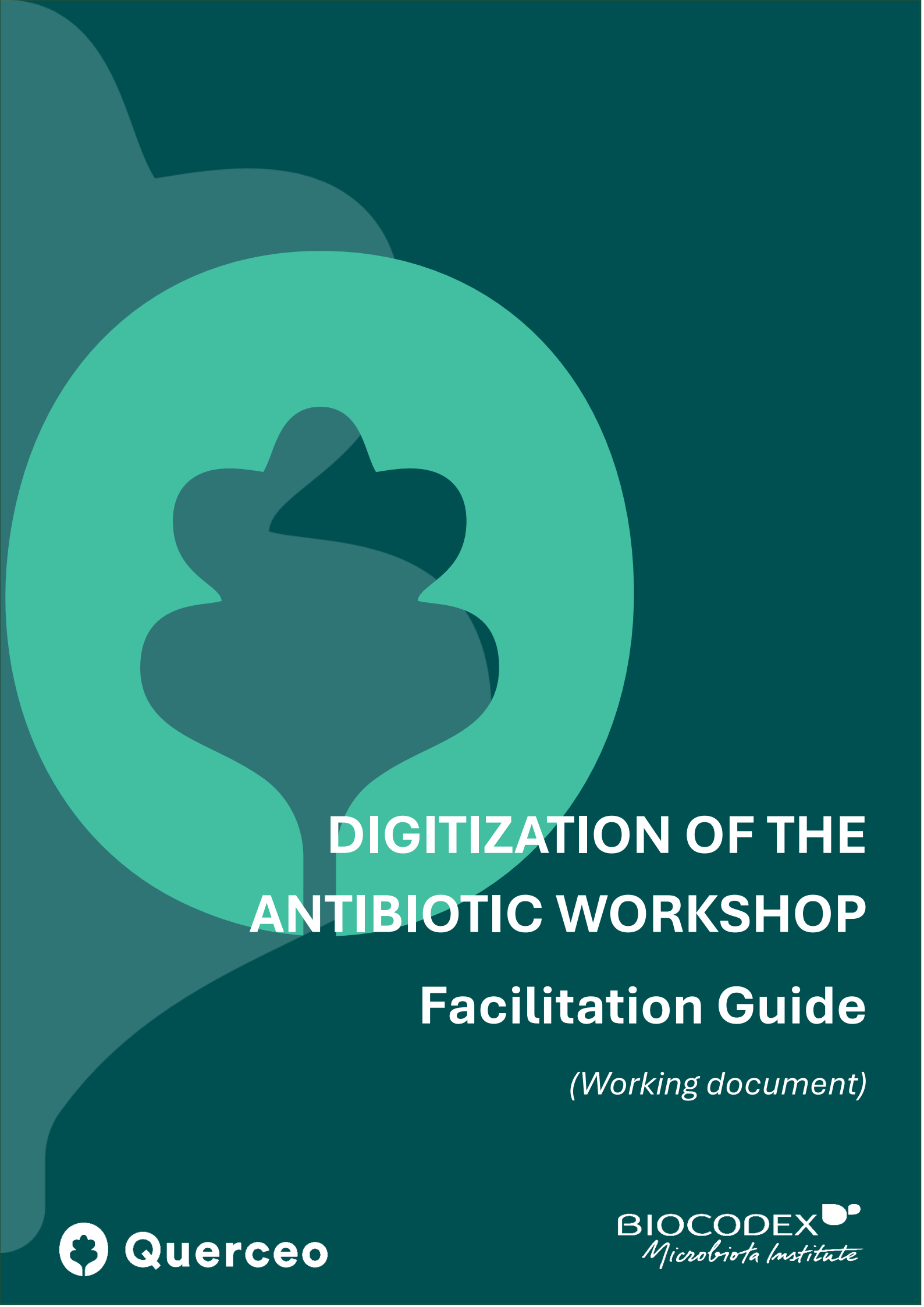




DIGITIZATION OF THE ANTIBIOTIC WORKSHOP

Facilitation Guide

(Working document)

Facilitation Guide – Antibiotic Resistance Workshop

About the guide and the workshop

The aim of this guide is to help the facilitator to understand the structure of the workshop and confidently manage each stage of the game, from setup through to its conclusion. It details the logic behind the matrix, the key messages to convey and practical tips for leading the session smoothly.

The **Antibiotic Resistance Mural Workshop** is an educational, collaborative activity designed to raise awareness about the impact of antibiotic use on the microbiota and bacterial resistance. It is accessible to everyone, can be completed in 15 minutes with about ten participants and can be facilitated in various settings: medical events, training sessions or student gatherings.

Before the activity – material preparation

Before starting the workshop, take a few minutes to **prepare your materials**:

- **Print** all the documents required for the workshop (*see the provided PDF files*).
- The **game cards** should be printed **double-sided**:
 - the **front** shows the card **title or image**,
 - the **back** provides a **more detailed explanation**.
- **Cut and sort** the cards into sets (Scenarios, Consequences, Solutions).
👉 Allow about **15 to 30 minutes for preparation**.

Finally, take a moment to **rapidly review the facilitation guide** before the session: this will help you visualize each stage of the game and run the workshop seamlessly.

Game presentation

The game consists of **63 cards**, divided into **2 main modules**.

Module 1: Scenarios and Consequences (Cards with a triangle on the back)

These are used to build the **matrix of risks and consequences** and to understand how **antibiotic resistance emerges and spreads** throughout the game.

Module 1 includes two subsets:

“Risks” set (5 cards)

➡ These cards introduce the different **types of scenarios** that will be explored.



They are organized into **6 scenarios** with **Consequence cards** to be placed in the risk matrix:

“Scenarios & Consequences” set (39 cards)

➡ These cards illustrate **real-life situations involving antibiotic use** and their impacts.

They should be grouped by scenario, in the following order:

However, it is not necessary to present all scenarios: the selection will depend on how much time you wish to devote to each.

1 Scenario 1 – Bacterial infection



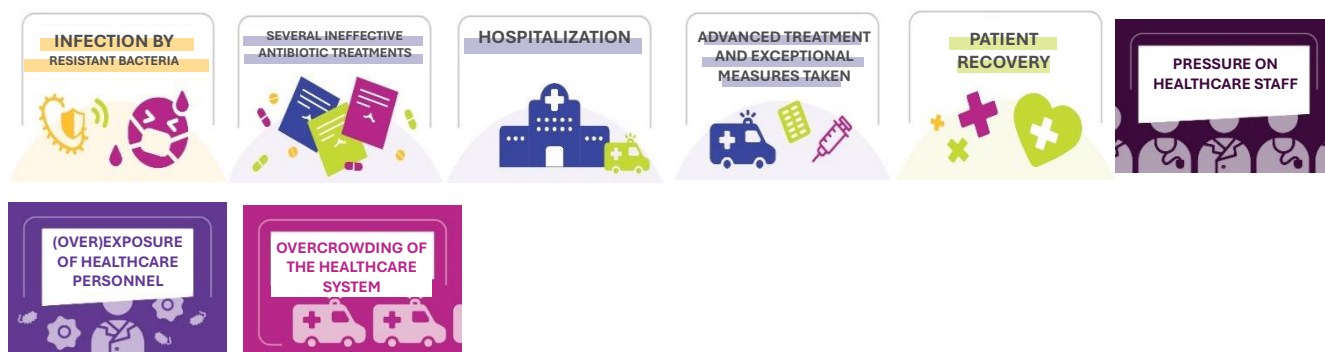
2 Scenario 1b – Viral infection



3 Scenario 2 – Infection by resistant bacteria



4 Scenario 2b – Infection by multidrug-resistant bacteria



5 Scenario 3 – Preventive antibiotic treatments



6 Scenario 4 – Indirect exposure: aggravating factors



These cards are used to **gradually build the matrix of risks and consequences**, culminating in an exploration of **global risks**.

The “Global Risk” cards

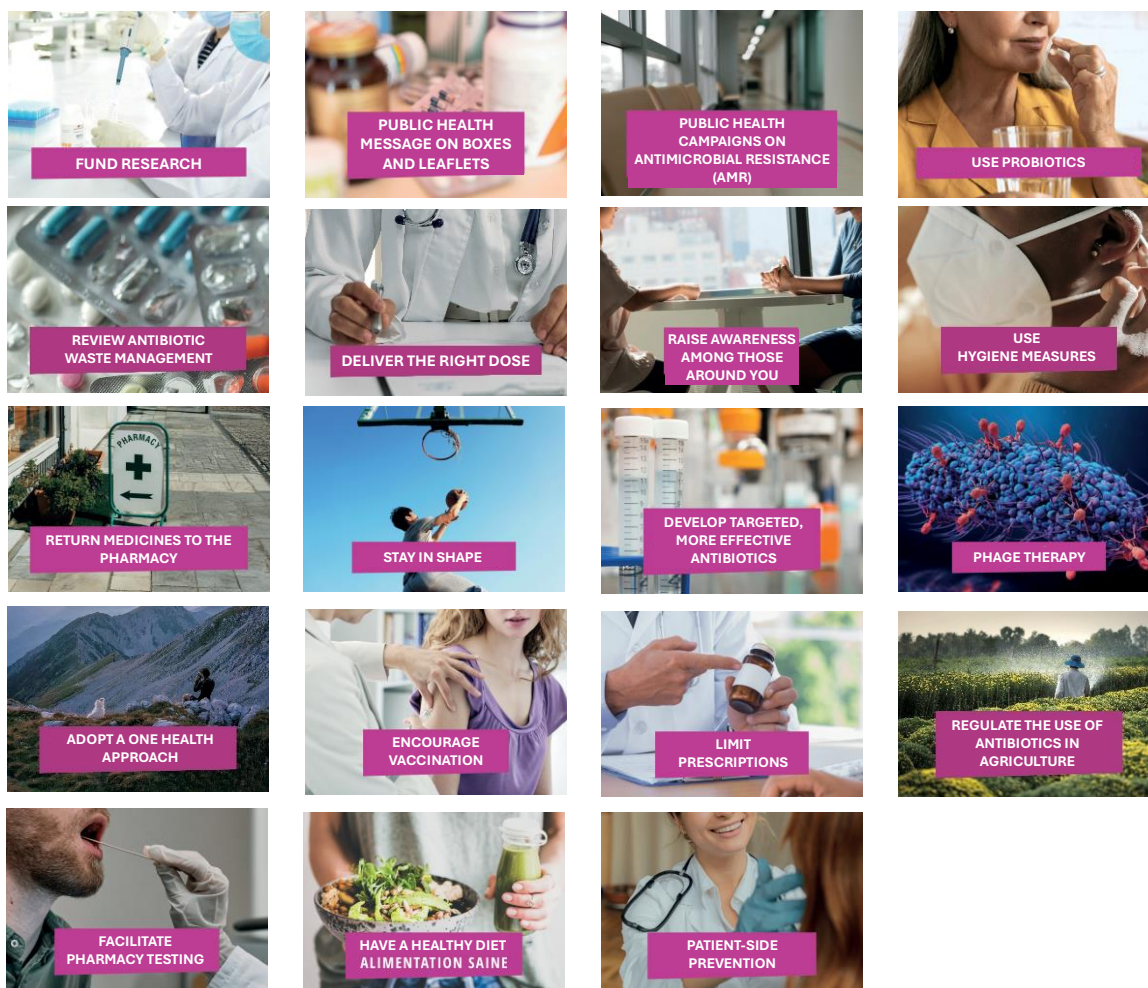
At the end of module 1, certain specific cards complete the **matrix at the global scale**:



➡ These cards serve as the **culmination point** of the group’s reflection.

Module 2: The Solutions *(Cards with a square on the back)*

This second module contains **19 “Solution” cards**. They are used at the end of the workshop to **jointly identify possible levers for action**: individual behaviors, professional practices or collective initiatives.



Workshop flow in 4 stages

1. **Introduction** – presentation of the theme and the matrix.
2. **Exploration** – discovering the mechanisms of antibiotic resistance and its consequences.
3. **Solutions** – group reflection on possible actions at different levels.
4. **Conclusion** – summary and key messages to wrap up the game.

Workshop setup

Before starting, set up the game table and materials. This stage is essential to ensure the workshop runs smoothly.

1. Prepare your playing area

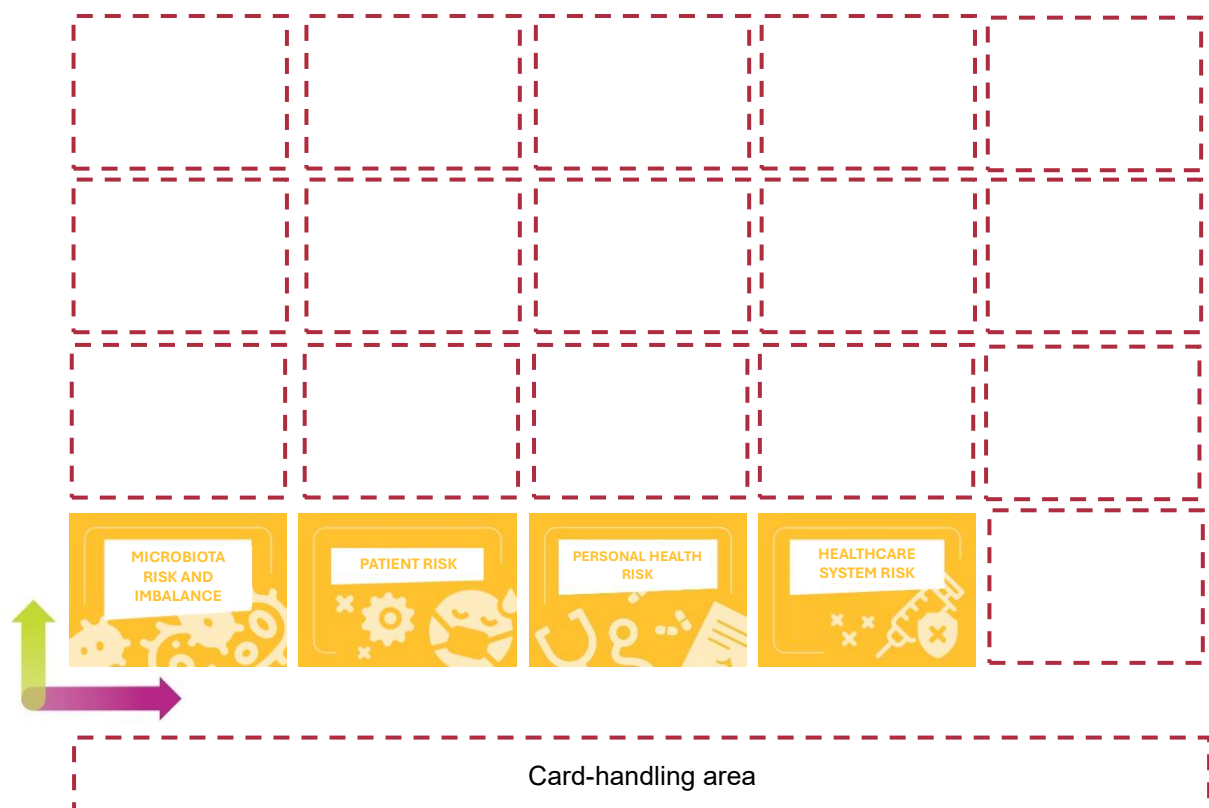
The playing table consists of two zones:

- **At the top**, the **matrix**: this is the main board where the “Consequence” cards will be placed.
 - **In the center**, the **card-handling area**: this is where scenarios will be built and discussed with participants.
- ◇ **Tip**: position the matrix so it is visible and properly oriented for the entire group, with the axes clearly shown (horizontal = levels of risk, vertical = severity of consequences).
- ◇ **The 4 base cards** (axes and matrix structure) must be set out from the start.

Prepare your cards

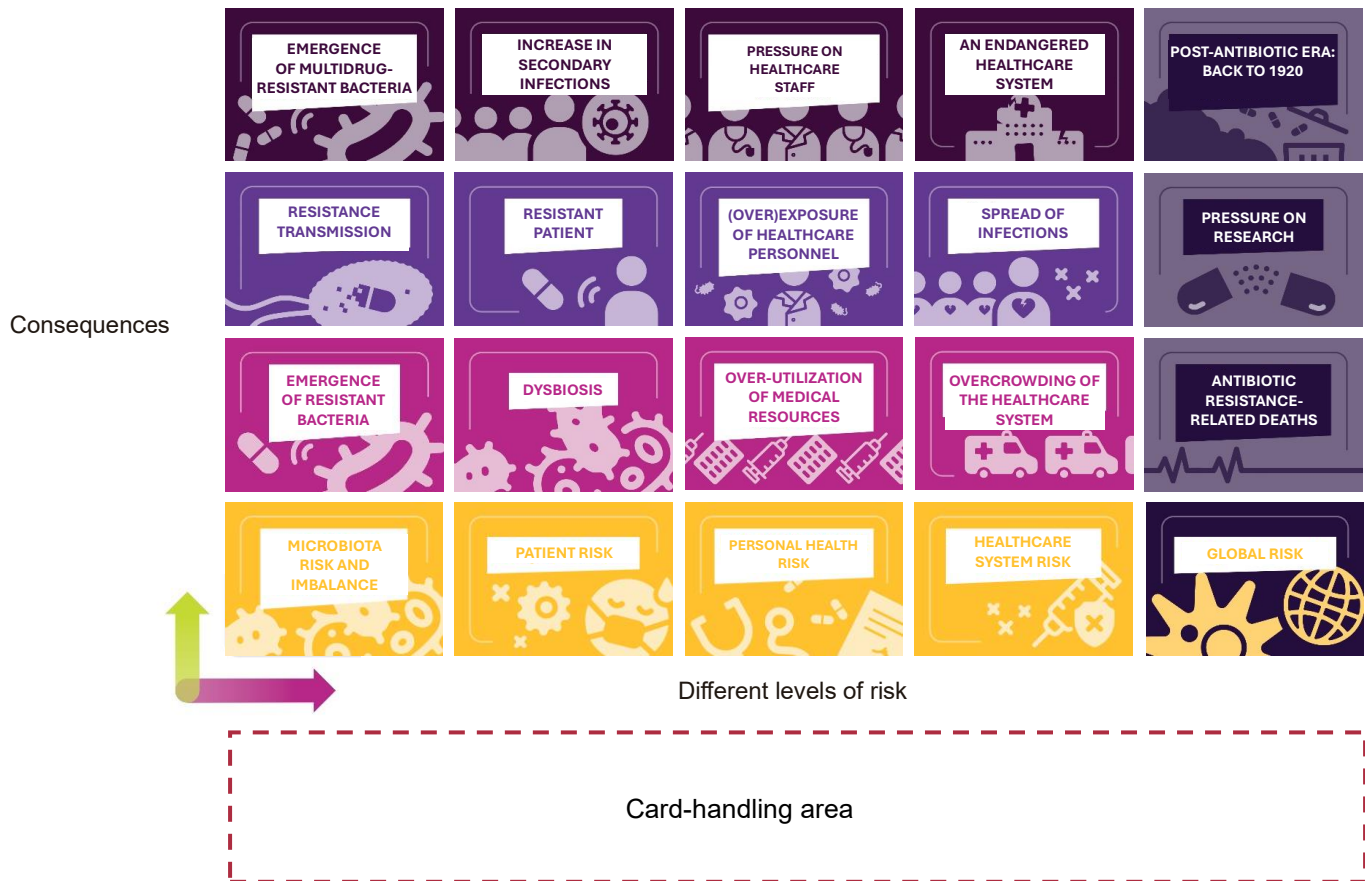
- The “Scenario” and “Consequence” cards should be **sorted in scenario order** and stacked **in front of you**, ready for distribution.
- The “Solution” cards remain **in a corner of the table, unsorted**, for the final phase of the game.

💡 *Facilitator tip*: sort your cards before the participants arrive – it will save you time during the workshop.



Objective: the “Consequences” matrix

The goal of the game is to **collaboratively build the matrix** of consequences related to antibiotic resistance. As the scenarios unfold, participants will see **how antibiotic use** sets off a **chain of effects** at multiple levels.



The matrix is gradually filled in, linking each scenario to its consequences:

- Microbiota level
- Patient level
- Healthcare personnel level
- Healthcare system level
- Global level

The “Consequence” cards are stacked according to the **severity** of the risk (from bottom to top). The **scenarios** are removed from the play area **after each discussion**, but the **matrix remains visible** throughout the workshop.

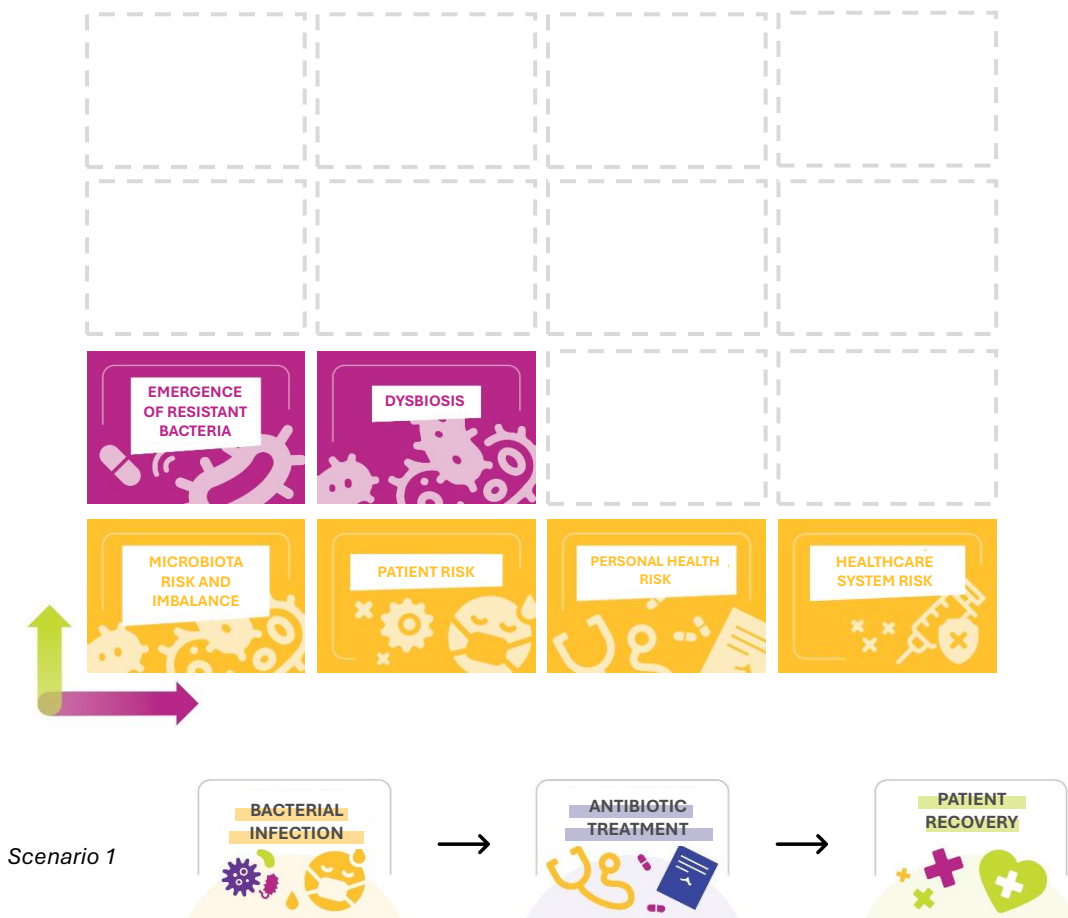
What is the purpose of the matrix?

The final matrix provides a **clear view of how antibiotic resistance risks progress**, from the most microscopic level (the microbiota) to the global scale.

It serves as the **common thread of the game**: it guides reflection and makes the links between individual behaviors and global consequences visible.

Stage 1 – Build the “Risks & Consequences” matrix

Scenario 1 – Bacterial infection



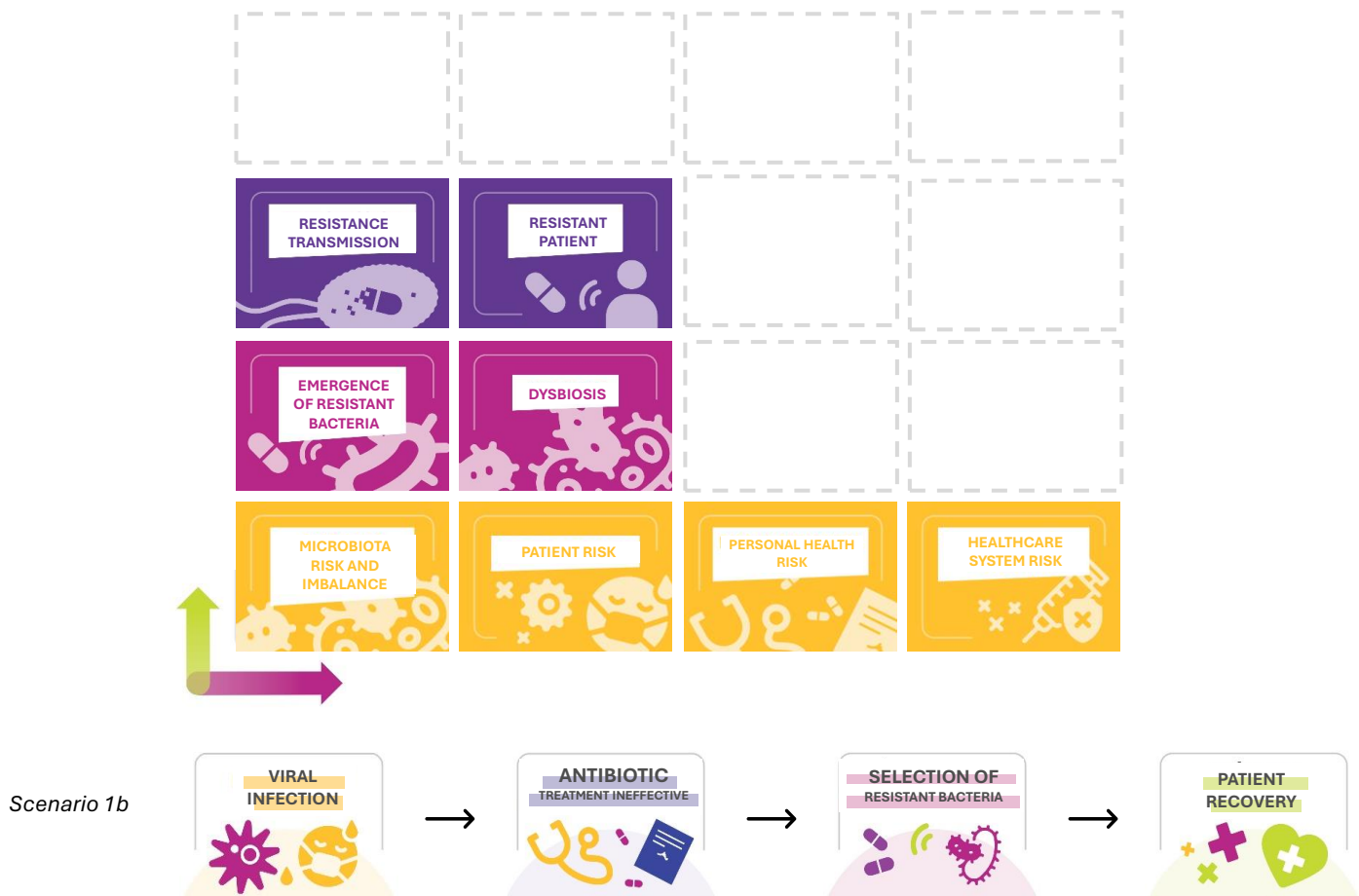
Stage objectives: Discover how the game works and understand how the matrix is built.

Game sequence:

1. **Lead by example!** This first scenario is **guided by the facilitator**. Lay out the three Scenario cards in the following order, facing the participants: → *Bacterial infection* → *Antibiotic treatment* → *Patient recovery*
2. **Briefly explain the logic behind the scenario.** The goal is to illustrate **normal antibiotic use**, without any specific resistance.
3. **Introduce the matrix.** Present the two “Consequence” cards:
 - *Emergence of resistant bacteria* → **Microbiota risk and imbalance** column
 - *Dysbiosis* → **Patient risk** column
4. **Engage the group.** Invite participants to place these cards in the matrix. Use this moment to explain **how the matrix is filled in**: it is built **progressively** as each scenario unfolds.

As a reminder, only the Scenario cards are to be removed from the facilitation table. The matrix itself remains intact and is supplemented as the scenarios unfold.

Scenario 1b – Viral infection



Goal: Understand the consequences of **improper antibiotic use** in the case of a viral infection.

Game sequence:

1. Let the participants play!

This is the **first collaborative scenario**. Distribute the 4 Scenario cards (*Viral infection*, *Antibiotic treatment ineffective*, *Selection of resistant bacteria*, *Patient recovery*) and give the group **30 to 45 seconds** to reassemble the correct sequence.

👁 The facilitator **observes and intervenes only** if the group gets off track.

2. Encourage collective thinking.

Ask participants to explain their choices and the reasoning behind their sequence.

Then add the two “Consequence” cards and invite them to place them on the matrix.

3. Card placement:

- *Resistance transmission* → **Microbiota risk and imbalance** column, above *Emergence of resistant bacteria*
- *Resistant patient* → **Patient risk** column, above *Dysbiosis*

Quick debrief:

Emphasize that this scenario illustrates a **common misuse of antibiotics**: prescribing them for viral infections, self-medication or using an inappropriate antibiotic.

💡 **Key message:** Each unjustified use of antibiotics strengthens bacterial resistance and weakens their future effectiveness.

Scenario 2 – Infection by resistant bacteria



Goal: Show the tangible consequences of the emergence of bacteria already resistant to certain antibiotics.

Game sequence:

- **Distribute the Scenario 2 cards:** *Infection by resistant bacteria, 1st antibiotic treatment ineffective leading to 2nd antibiotic treatment, Selection of multidrug-resistant bacteria, Patient recovery.*

Give participants **30 to 45 seconds** to arrange the sequence in the correct order. 🗣️ Encourage them to **explain their choices** and briefly discuss the logic behind the sequence.

1. **Add the Consequence card.** Once the scenario is validated, present the card: → “Over-utilization of medical resources”

Invite the group to place it in the “**Personal health risk**” column of the matrix.

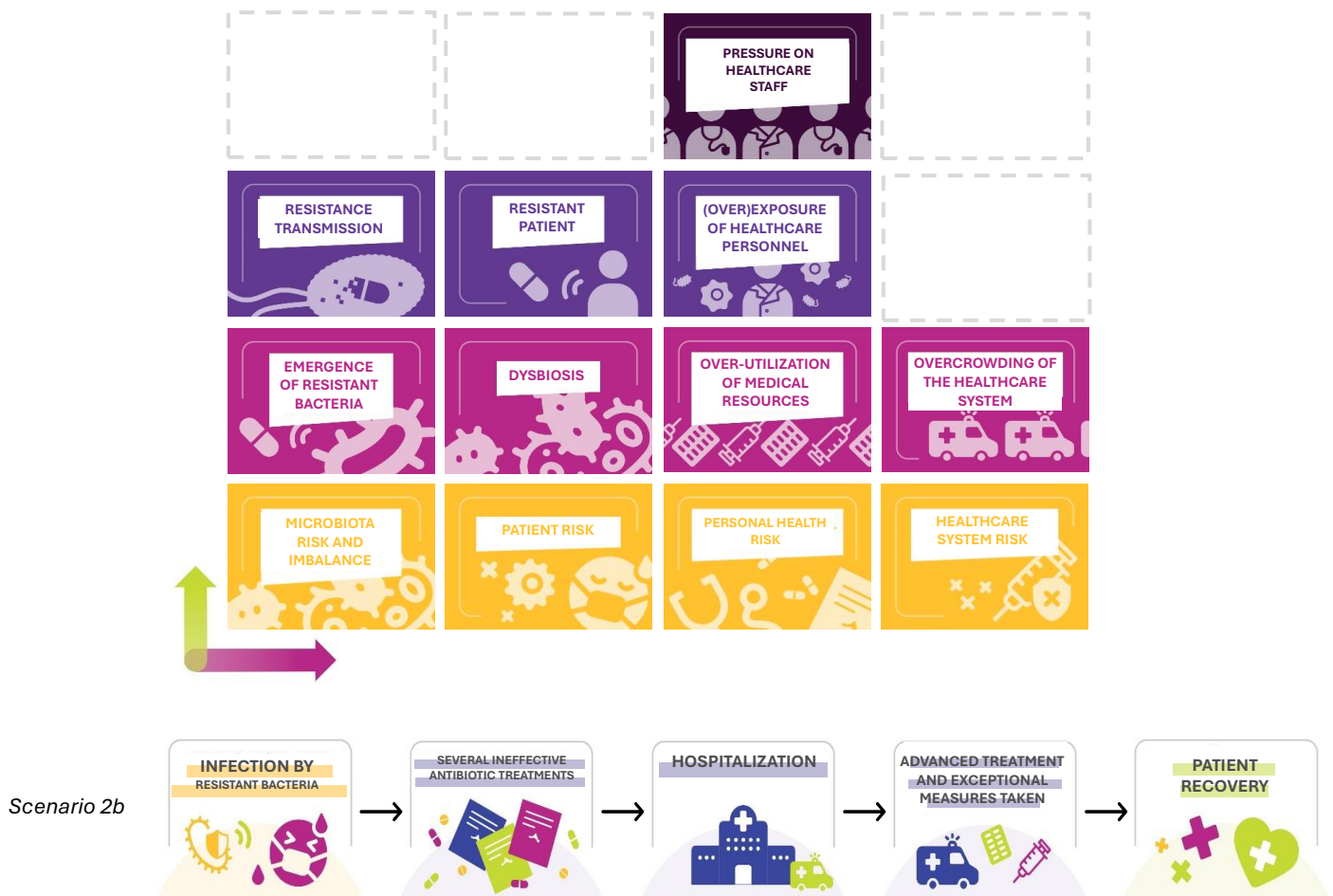
Quick debrief:

Explain that when an infection is caused by resistant bacteria, **the first treatment often fails**, leading to repeated medical visits and additional prescriptions.

➡ Result: **the healthcare system becomes overused** and medical resources are depleted more rapidly.

🔑 **Key message:** Each additional resistance makes treatment longer, more expensive and harder to control.

Scenario 2b – Infection by multidrug-resistant bacteria



Goal:

Understand how infections caused by multidrug-resistant bacteria put **significant strain on the healthcare system and medical staff**.

Game sequence:

- **Distribute the Scenario 2b cards:** *Infection by resistant bacteria, Several ineffective antibiotic treatments, Hospitalization, Advanced treatment and exceptional measures taken, Patient recovery.*
Give participants **30 to 45 seconds** to place the cards in the correct order.
👉 Encourage them to **explain their reasoning** and discuss the clinical progression shown.

1. Add the Consequence cards.

Once the sequence is validated, present the three “Consequence” cards and invite the group to place them in the **“Personal health risk”** column in the following order:

- (Over)exposure of healthcare personnel
- Pressure on healthcare staff
- Overcrowding of the healthcare system

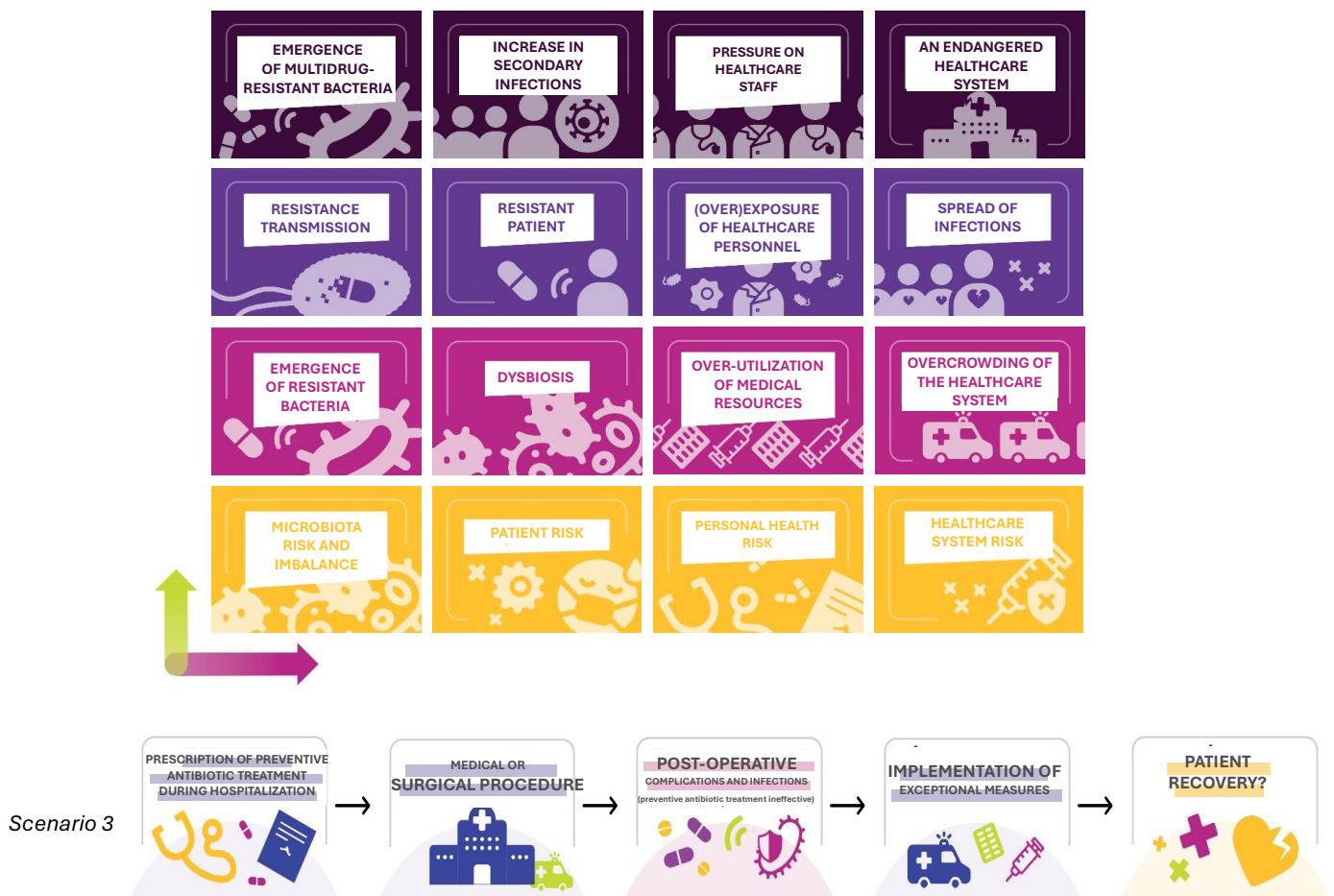
👉 The cards are stacked **from bottom to top**, reflecting the progressive worsening of the risk.

Quick debrief:

Explain that faced with multidrug-resistant bacteria, standard treatments often fail, leading to **prolonged hospitalizations**, the use of **last-resort treatments**, **increased exposure for healthcare staff** and **overall pressure on the hospital system**.

🔑 **Key message:** The greater the bacterial resistance, the more complex, costly and risky the management becomes for both the patient **and** the medical staff.

Scenario 3 – Preventive antibiotic treatments



Goal: Show how the preventive use of antibiotics, often practiced in hospitals, can promote bacterial resistance and weaken the healthcare system.

Game sequence:

- **Distribute the Scenario cards:** *Prescription of preventive antibiotic treatment during hospitalization, Medical or surgical procedure, Post-operative complications and infections (preventive antibiotic treatment ineffective), Implementation of exceptional measures, Patient recovery?.*

Give the 5 cards to the participants and allow them **30 to 45 seconds** to reconstruct the logical sequence.

👉 Encourage them to **explain their choices** and describe the links between each stage.

1. Add the Consequence cards.

Then present the 4 “Consequence” cards and invite participants to place them in the matrix:

- *Emergence of multidrug-resistant bacteria* → top of the **Microbiota risk and imbalance** column
- *Increase in secondary infections* → top of the **Patient risk** column
- *Spread of infections* → **Healthcare system risk** column, under *An endangered healthcare system*
- *An endangered healthcare system* → at the very top of the same column

👉 The cards are placed **from bottom to top**, illustrating the growing severity of the consequences.

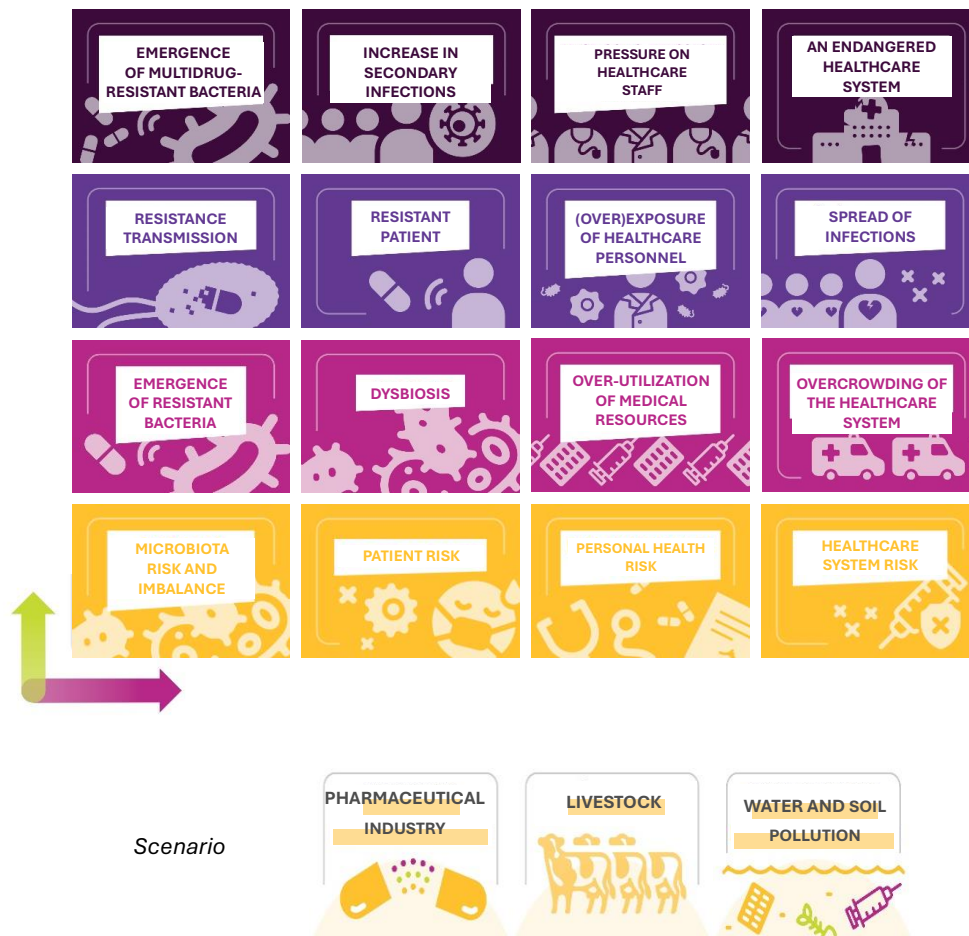
Quick debrief:

Emphasize that this scenario highlights the **limits of antibiotic prevention**:

- During routine medical procedures (e.g., surgery, cesarean section), preventive treatments can prove **ineffective** against resistant bacteria.
- This leads to a higher incidence of **secondary infections**, an **increased use of medical resources** and sometimes the reconsideration of certain procedures deemed too risky.

 **Key message:** Even when used with preventive intent, inappropriate antibiotic use perpetuates the vicious circle of resistance and weakens our ability to provide effective care.

Scenario 4 – Indirect exposure: aggravating factors



Goal: Highlight the **hidden sources of antibiotic exposure** and how they **exacerbate antibiotic resistance** on a larger scale.

Game sequence: *Pharmaceutical industry, Livestock farming, Water and soil pollution.*

1. Present the cards to the group.

Lay the three cards on the table and invite participants to **reflect freely**:

- 🔗 What connections do they see between these cards and the matrix already built?
- 🔗 At which scales do these factors come into play (microbiota, patient, healthcare system, world)?

2. Encourage open discussion.

Allow a few minutes for everyone to share their thoughts.

The aim is not to “place” the cards but to **foster discussion** and **connect** these elements to the previous scenarios.

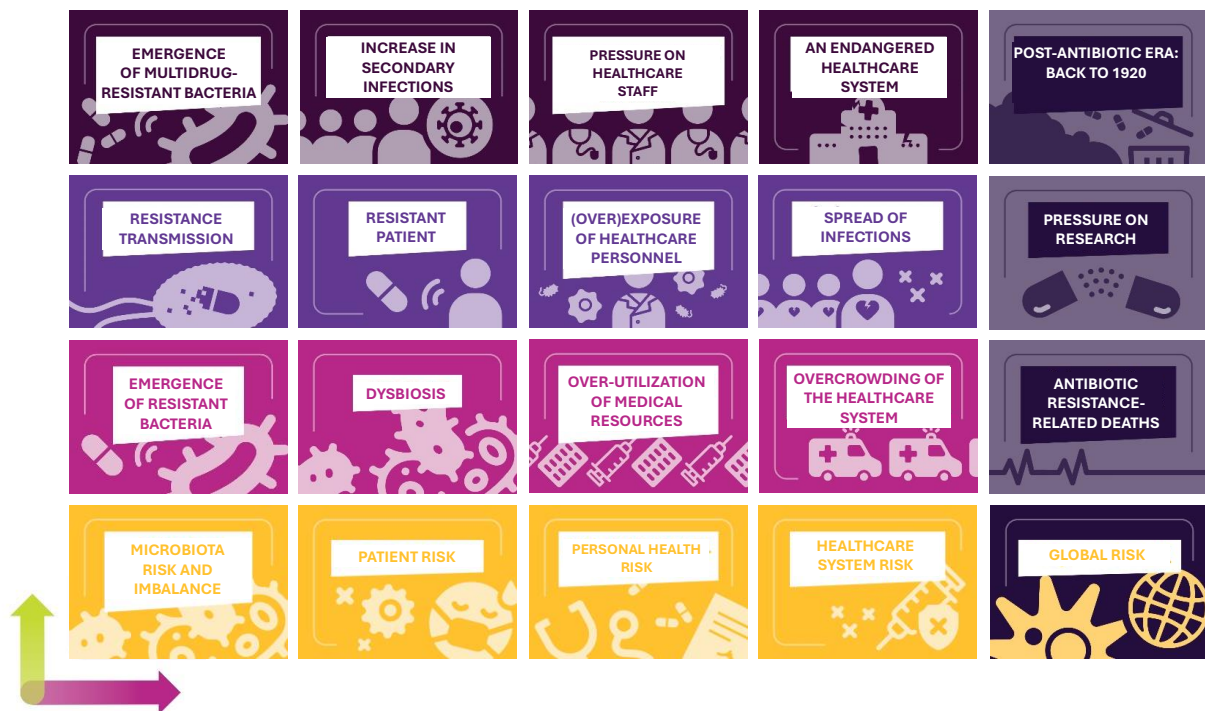
🗣 Quick debrief:

Emphasize that these cards represent cases of **indirect exposure** to antibiotics, often invisible but highly impactful:

- **Through livestock farming:** antibiotics are used to prevent animal diseases and promote growth, leading to their **presence in soil and our food**.
- **Through the pharmaceutical industry:** the production and discharge of medicines **release antibiotic residues** into the environment.
- **Through hospital waste and wastewater treatment plants:** traces of antibiotics remain in **water and soil**, fueling bacterial resistance.

🔑 **Key message:** Antibiotic resistance is not limited to medical use – it is also **environmental, global and systemic**.

Step 2: The global risks of antibiotic resistance



Goal: Take a step back to understand the **worldwide and long-term consequences** of antibiotic resistance.

Game sequence:

1. **Explain the objective of this stage.**
This is the **conclusion of the matrix**: we move from an individual and hospital-level view to a **global perspective**.
🔑 This phase helps **raise awareness of the scale of the issue**.
2. **Distribute the 4 cards**
Invite participants to create a **new “Global Consequences” column**, following the previous columns already built.
3. **Card placement.**
Ask them to arrange the cards **in order of severity**, from the least to the most critical risk:
 - *Global risk*
 - *Antibiotic resistance-related deaths*
 - *Pressure on research*
 - *Post-antibiotic era: back to 1920*

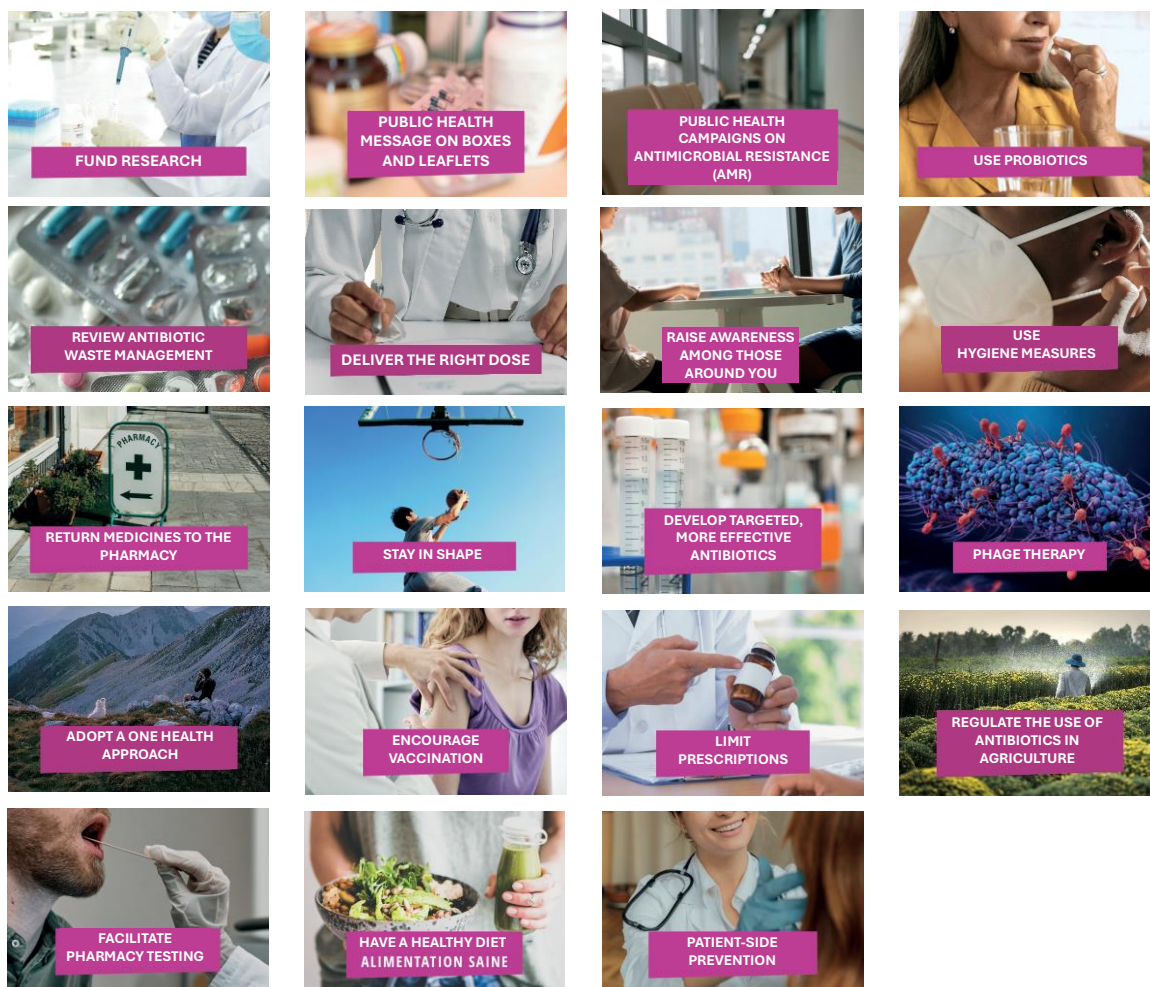
🗣 Quick debrief:

Explain that this final stage is **symbolic yet essential**:

- It helps **assess the overall impact** of the phenomenon on public health, research and the future of medicine.
- The “post-antibiotic era” refers to a world where antibiotics **no longer work**, making once-benign infections deadly again.

🔑 **Key message:** Antibiotic resistance is not a risk for the future – **it is already under way**, and only collective action will help limit its consequences.

Step 3 – The solutions: what we can do to fight antibiotic resistance



Goal: Conclude the workshop on a **positive and engaging note** by identifying **concrete courses of action** at different levels.

Game sequence:

1. **Place the Solution cards on the table.**
Lay out the 19 cards face up in the center of the table.
👉 Give participants **2 minutes** to look through them and choose **the one that resonates most with them**.
2. **Roundtable discussion.**
Invite each participant to share the card they selected and explain **why**.
Encourage them to connect it with the **situations explored in the matrix**.
3. **Reinforce the idea of shared responsibility.**
Emphasize that **everyone has a role to play**, whether:
 - as a **citizen** (responsible antibiotic use),
 - as a **healthcare professional** (appropriate prescription, prevention),
 - or at an **institutional level** (research, public policy).

🗨 Quick debrief:

This phase helps **turn awareness into commitment**. It brings the session to a **close with a sense of collective momentum**, as each participant leaves with a **concrete solution to put into action**.

🔑 Key message:

Fighting antibiotic resistance is a **shared effort** – every action counts, at every level.

Step 4: Conclusion

Goal: Conclude the game by **reinforcing the key messages** and reminding everyone that each person has a role to play in the fight against antibiotic resistance.

Essential messages to remember:

1. **Antibiotics save lives**, but their effectiveness is now **under threat** – they must be **preserved**.
2. **Without collective action**, antibiotic resistance could have **tragic consequences** for humanity.
3. **Repeated exposure to antibiotics** depletes the gut microbiota, but **there are solutions** to limit these effects.
4. **Prevention and good practices** are our best tools to protect their effectiveness.

👉 **Final message:** Everyone is concerned.

Patients, healthcare professionals, institutions and citizens – **each can take action** at their own level.

Step 5 – Facilitation tips

A few tips to ensure smooth facilitation of the workshop

1. Use the back of the cards

- The text on the back can **help clarify or deepen** certain concepts.
- You may choose **whether or not to have participants read** the back of the cards depending on timing and group level.

2. Adjust the pace

- If the group **gets stuck**, take the lead on a scenario and **explain as you go**.
- If you have **more time**, invite participants to **guess the “Consequence” cards** before revealing them!

3. Assist with placement

- The **color gradient** on the Consequence cards serves as a guide for their position in the matrix.
- Encourage **logical progression**: from the microbiota to the global scale, from minor to major risk.

4. Encourage discussion

- Highlight the **message conveyed by each scenario**.
- Close the workshop by **allowing an open moment for participants to share**: emotions, surprises, realizations, etc.

🔑 **Final tip:** successful facilitation strikes the right balance between **play, discussion and learning**.