

**Central Administration of Pharmaceutical Care  
General Administration for Drug Utilization and Pharmacy Practice Administration**

# **National Guidance of Antimicrobial Monitoring**

**Year: 2022**

**Code: EDREX:GL.CAP.Care.025**

**Version No: 1**

**Issue Date: 2022**

## Table of Contents

<b>Content</b>	<b>Page</b>
<b>Antimicrobial Monitoring Sheet and Timeout Tool</b>	3
<b>National Guidance of Antimicrobial Monitoring</b>	4
<b>Contributors</b>	6
<b>References</b>	7



# PART 1

## Antimicrobial Monitoring Sheet and Timeout tool

# PART 2

Patient Name: \_\_\_\_\_ Patient ID: \_\_\_\_\_ Ward Name: \_\_\_\_\_ Date of admission: \_\_\_\_\_ Allergies: \_\_\_\_\_

Antimicrobials	This form should be completed by clinical pharmacist/AMS pharmacist on a daily basis for patients receiving antibiotics	Day of Therapy (Check boxes every day if continue antibiotics)														
		Day Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Antimicrobial name Start Date Stop Date Route of administration <input type="checkbox"/> Empirical <input type="checkbox"/> Definitive Is this antimicrobial in the restriction list <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was the restriction form completed <input type="checkbox"/> Yes <input type="checkbox"/> No	1. Planned duration: ----- days 2. Indication(s) <input type="checkbox"/> Community acquired <input type="checkbox"/> Hospital acquired <input type="checkbox"/> Blood stream <input type="checkbox"/> Endocarditis <input type="checkbox"/> Neutropenic fever <input type="checkbox"/> Bone /Joint <input type="checkbox"/> Head/Neck <input type="checkbox"/> Intra-abdominal <input type="checkbox"/> CNS <input type="checkbox"/> Skin/Soft tissue <input type="checkbox"/> Surgical Prophylaxis <input type="checkbox"/> Urinary tract <input type="checkbox"/> Pelvic/GYN <input checked="" type="checkbox"/> Non-Surgical prophylaxis <input type="checkbox"/> Respiratory <input type="checkbox"/> Pneumonia <input type="checkbox"/> other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Dosage regimen (Dose/Frequency)															
	3. Timeout (Every 48h-72h)	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>
	4. Recommendations:	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>
	a. IV to Oral Switch (IVOST)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	b. Continue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	c. Discontinue(D/C)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	d. Escalate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	e. De-escalate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Antimicrobial name Start Date Stop Date Route of administration <input type="checkbox"/> Empirical <input type="checkbox"/> Definitive Is this antimicrobial in the restriction list <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was the restriction form completed <input type="checkbox"/> Yes <input type="checkbox"/> No	1. Planned duration: ----- days 2. Indication(s) <input type="checkbox"/> Community acquired <input type="checkbox"/> Hospital acquired <input type="checkbox"/> Blood stream <input type="checkbox"/> Endocarditis <input type="checkbox"/> Neutropenic fever <input type="checkbox"/> Bone /Joint <input type="checkbox"/> Head/Neck <input type="checkbox"/> Intra-abdominal <input type="checkbox"/> CNS <input type="checkbox"/> Skin/Soft tissue <input type="checkbox"/> Surgical Prophylaxis <input type="checkbox"/> Urinary tract <input type="checkbox"/> Pelvic/GYN <input type="checkbox"/> Non-Surgical prophylaxis <input type="checkbox"/> Respiratory <input type="checkbox"/> Pneumonia <input type="checkbox"/> other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dosage regimen (Dose/Frequency)																
3. Timeout (Every 48h-72h)		Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>	Y <input type="checkbox"/>
Recommendations:		N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>	N <input type="checkbox"/>
a. IV to Oral Switch (IVOST)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Continue		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Discontinue(D/C)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Escalate		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. De-escalate		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Final diagnosis		Biomarkers & Pertinent Positive Microbiology														
	Biomarkers	Type of culture	Microorganisms	Sensitivity								Date of culture withdrawal	Date of culture result			
		1-														
		2-														
	3-															

Notes: Escalate: Shift from monotherapy to combination and/or change from narrow spectrum to broader.  
 De-escalate: Discontinue component/s of combination therapy and/or change from broad spectrum to narrower.

Y: Yes  
 N: No

Signature: \_\_\_\_\_

## National Guidance of Antimicrobial Monitoring

### Use the Antimicrobial Monitoring Sheet and Timeout Tool

#### Objectives:

1. It is one of the approaches that support optimal antimicrobial use (to review the appropriateness of all antimicrobial agents).
2. To review the use of antimicrobial agents in terms of indications, duration of treatment, dosing regimen, route of administration and time-out recommendations, hence, it facilitates the identification of any antimicrobial prescribing problem aiming at achieving rational antimicrobial use.
3. To document dosing regimen, duration, indication and time out recommendations.
4. To make this information accessible to help ensuring that antimicrobials are modified as needed and/or discontinued in a timely manner.
5. It is a tool for antimicrobial daily monitoring and time out review of antimicrobial every 48 hours to answer these key questions:
  - Does this patient have an infection that will respond to antibiotics?
  - If so, is the patient on the right antimicrobial(s), dose, and route of administration?
  - Can a more targeted agent be used to treat the infection (de-escalate)?
  - How long should the patient receive the antimicrobial agent(s)?
  - Are there any changes needed for the doses (renal impairment, hepatic impairment)?

#### How to use the Antimicrobial Monitoring Sheet and Timeout tool?

##### A) PART 1

For the patients who is prescribed antimicrobial agents, authorized person (e.g., Physician, AMS clinical pharmacist, .... etc.) should complete the following items ONLY ONCE:

- Patient Name
- Patient ID
- Ward Name
- Date of admission
- Allergies: e.g., penicillin allergy
- Indication (whether community or hospital acquired, and specify the site of infection)
- Final diagnosis

Authorized person should discuss with the physician to complete the following items ONLY ONCE:

- Antimicrobial name (appropriate antimicrobial therapy)
- Route of administration
- Start date
- Planned duration
- Put a mark on E (if it is prescribed empirically) or D (Definitive- if it is prescribed based on the culture sensitivity results)

## B) PART 2

Authorized person should complete the following DAILY:

- The date of administering the antimicrobial therapy.
- Dosing regimen (dose/frequency) (to be documented on day 1 after discussion with the physician and checked daily for any change in the patient conditions requiring dose adjustment).

Authorized person should complete the following (Every 48-72hours):

- Time-out (put mark on Y if time out performed, a mark to be put on N if time out was not performed)
- Time-out recommendations (if time-out is performed, put a mark on the date at which time out recommendation carried out).

N.B: Time-out should be carried out by physician, clinical pharmacist can cooperate with the physician and discuss the time out recommendations to choose the most suitable one.

Biomarkers e.g., procalcitonin and pertinent positive microbiology (culture sensitivity results) should be completed.

The sheet should be signed by authorized person (e.g., physician, AMS clinical pharmacist, .....etc.), it can also be used by hospital physicians to improve antimicrobial prescribing in terms of antimicrobial prescribing standardization and achieve the best use of antimicrobials.

Note: The Antimicrobial Monitoring Sheet is considered as a guidance and can be tailored based on the situation of each health care institution.



## Contributors

Editorial board	
<p style="text-align: center;"><b>Dr. Shimaa Nasr</b></p> <p>Head of Rational Drug Use unit at Drug Utilization and Pharmacy Practice General Administration - EDA</p>	<p style="text-align: center;"><b>Dr. Lobna Samy</b></p> <p>Head of Pharmaceutical Care Initiatives Unit National Team of Antimicrobial Use and Consumption, GA DU&amp;PP - EDA</p>
<p style="text-align: center;"><b>Dr. Mohammed Elsayed Eldesokey</b></p> <p>Drug Utilization and Pharmacy Practice General Administration member (GA DU&amp;PP) - EDA</p>	
Members of the National Rational Antimicrobial Use Committee (Ordered Alphabetically)	
<p><b>Dr. Ahmed Motawea</b> Chief of medical supply dept. Armed Forces Medical Services Authority</p>	<p><b>Prof. Dr. Hossam Arafa</b> Consultant of the General Authority of Healthcare (GAH Representative)</p>
<p><b>Dr. Asaad Sadek</b> Acting Director IPC General Directorate (MOHP Representative)</p>	<p><b>Prof. Dr. Maha Abdel Aziz El-touny</b> Prof. Internal medicine ASU. IPC consultant Ministry of Interior</p>
<p><b>Dr. Elizabeth Tayler</b> Senior technical officer-AMR Consultant at WHO Country Office</p>	<p><b>Dr. Mohammed Abdelfattah</b> Head of the central administration for preventive affairs (MOHP Representative)</p>
<p><b>Dr. Eman Nadim</b> Clinical pharmacist at the central administration for unified procurement (The Egyptian Authority for unified procurement Representative)</p>	<p><b>Prof. Dr. Nirmeen Ahmed Sabry</b> Professor of clinical pharmacy Cairo University Medication management consultant</p>
<p><b>Prof. Dr. Ghada Esmail</b> Prof. of Clinical Pathology (Microbiology) at Faculty of Medicine Ain Shams University. Head of IPC University Hospitals (University Hospitals representative)</p>	<p><b>Dr. Omar Abdel Aziz</b> World Health Organization Technical Officer – Surveillance, Preparedness and Response</p>
<p><b>Dr. Ghada Ali Younis</b> General Manager of the Drug Utilization and Pharmacy Practice General Administration at the Egyptian Drug Authority – Head of the National Antimicrobial Use (AMU/AMC) team.</p>	<p><b>Dr. Sherif Kamal</b> Chief pharmacist Clinical pharmacy programs director Children cancer hospital Egypt</p>
<p><b>Dr. Hema Soliman</b> Quality and Patient Safety Consultant (GAHAR Representative)</p>	<p><b>Dr. Shereen Abdel Gawad</b> Head of Pharmaceutical Care Central Administration – Head of National Rational Antimicrobial Use Committee-EDA.</p>

## References

- AHRQ Safety Program for Improving Antibiotic Use Antibiotic Time Out Tool. AHRQ Pub. No. 17(20)-0028-EF, November 2019
- Antimicrobial stewardship programmes in health-care facilities in low- and middle-income countries a WHO practical toolkit,2019.
- The Core Elements of Hospital Antibiotic Stewardship Programs CDC, 2019