BEDSIDE IAS PRACTICE

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Clinician's core competencies to become bedside steward

C1: Understands the patient and makes **right diagnosis**

C2: Understands the treatment options and chooses **right drug**

C3: Liaisons with other healthcare professionals to execute **right dose, delivery, decision on follow-up, and duration**

C4: Monitors patient and **reviews response** to treatment

C5: Ensures **infection control** practices

C6: Communicates the diagnosis, treatment, and prevention plan and its rationale clearly to the patient and other healthcare professionals

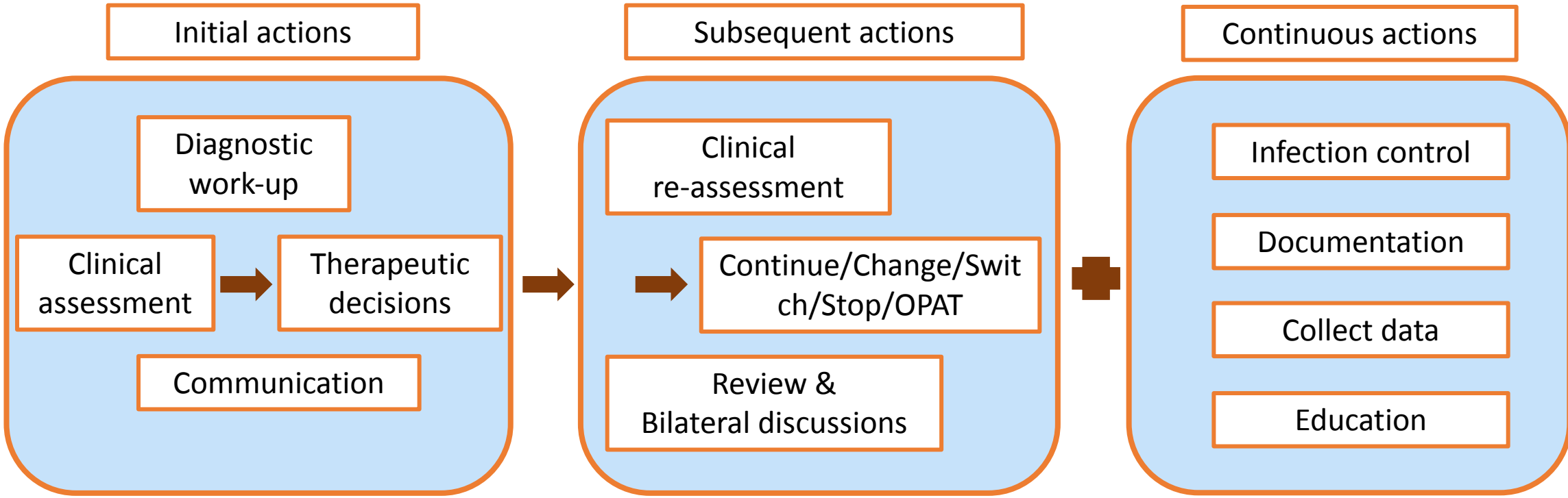
C7: Documents & analyse precisely in infectious disease meets

C8: Does **research** and makes the society healthier

Various roles of institute members towards right 8D's of IAS Practices

IAS TEAM	Right Do's of ISP	Right Don't s of ISP	Right Diagnosis	Right Drug	Right Dose	Right Delivery (route)	Right Decision (of Continue/Change/Switch/Stop/OPAT)	Right Duration
Role of Clinician	√	√	√	√	√	√	√	√
Role of Microbiologist	√	√	√	√	√	√	√	√
Role of Pharmacologist	√	√	√	√	√	√	√	√
Role of Nursing staff	√	√	√	√	√	√	√	√
Role of Public/patient/relatives	√	√	√	√	√	√	√	√

To be steward is to have skills in continuum

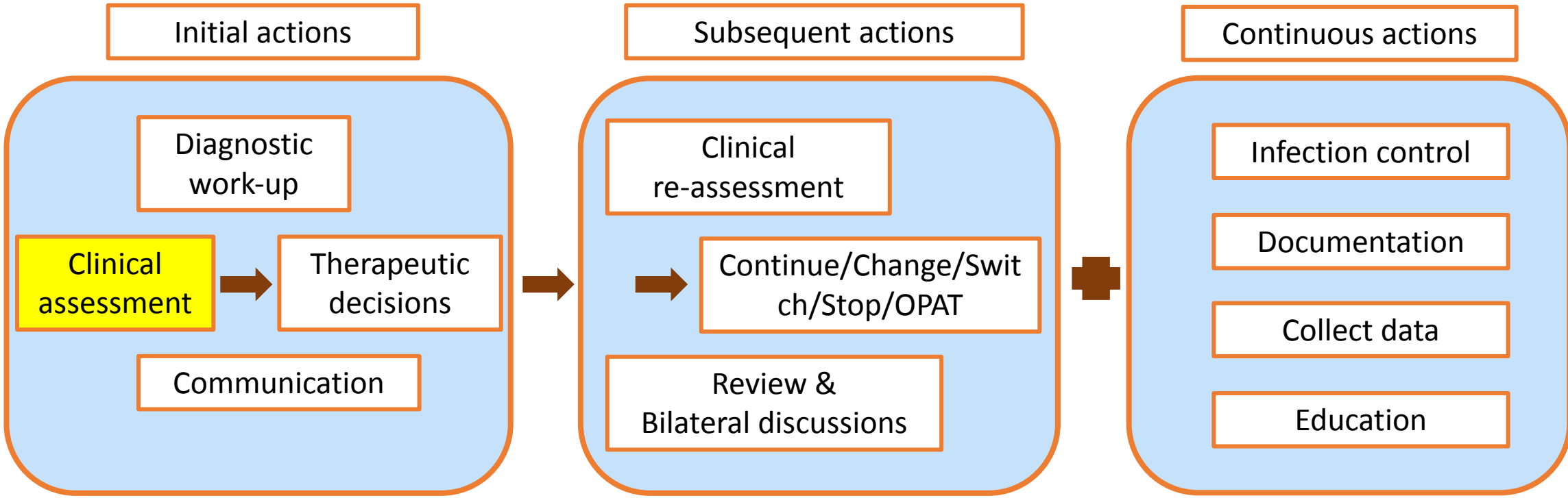


Exercise 1

A 55 year-old healthy man consults you (thinking you a MBBS doctor and his relative) with 2-day history of **sore throat & fever** that started with **rhinorrhoea and mild cough** in early winters. He had **temperature 101^0F** with normal other vitals. he had no rash or toxic look with normal chest examination, but had **erythematous posterior pharynx** with **small amount of exudates.** He had not received any recent antibiotics.

What is the treatment you will advice ?

stewardship comes in continuum



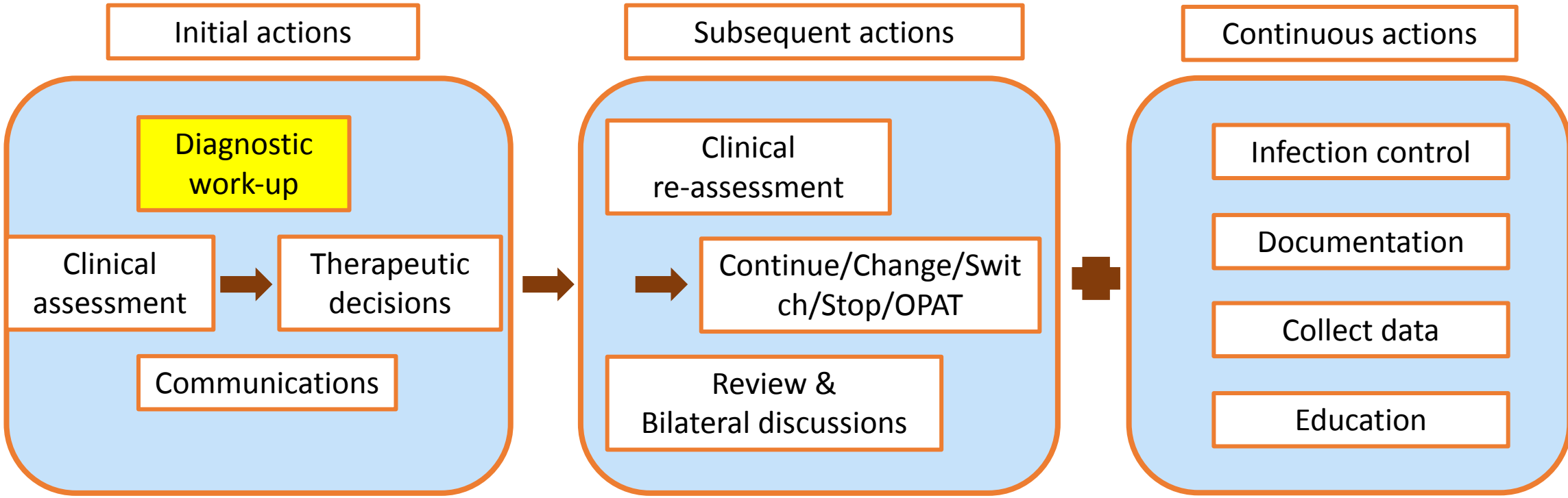
Clinical assessment

Step 1: What is **clinical diagnosis** (Evidence based) from history and examination

Modified Centor Criteria	Point	Total score	Risk of group A streptococcal pharyngitis
Temperature >38C	**1**	**≥ 4**	**38 – 63%**
No cough	1	3	27 – 28%
Tender anterior cervical adenopathy	1	2	10 – 12%
Tonsillar swelling or exudate	**1**	1	4 – 6%
Age 3 -14 years	1	0	2 – 3%
Age 15 -44 years	0	**<=2 Does not require culture to be done**	
Age >44 years	**-1**		

Symptoms, Looks, Vitals, any scores

Stewardship comes in continuum



Diagnostic work-up

Step 4: Any **Emergency/Routine lab tests** To identify Sepsis (e.g. organ involvement)

Not required

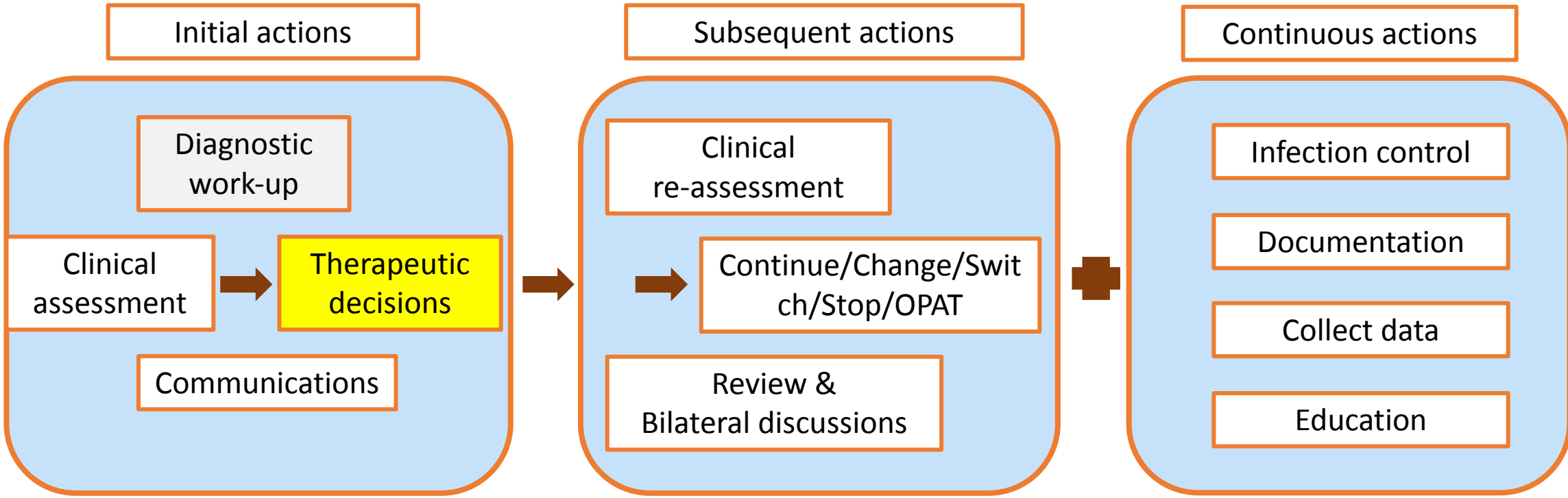
Step 5: Any **Point of care tests**

Rapid antigen testing

Step 6: Any **Confirmatory tests :** Throat swab

Culture/Sensitivity: Proper sampling, transportation, and instruction to microbiologist

Stewardship comes in continuum



Therapeutic decisions

Step 7: What **Organism Related Factors** to be considered

- Use of any antibiotics in recent past
- Local antibiogram/national guideline suggesting any Resistance pattern

None

Step 8: What **Patient Factors** to be considered

- Age group - extremity of age, Pregnancy & Lactation
- Liver/kidney Function
- Local factors - Site of infection or Pen
- Drug allergy
- Immunosuppress/immunocompromise state

None

Step 9: What **Antimicrobial Drugs** to be considered (Evidence based)

- **Spectrum of activity** – narrow vs broad; de… …ity of illness, treatment types, and immune status of th…
- **Bactericidal vs bacteriostatic** – decision depe… …type of infection and immune status of the patient
- Relative **toxicity and cost**
- **Interaction** with other drugs

None

Step 10: What **Dose & Duration** to be considered (Evidence based)

- Concentration vs time dependent inhibition
- National or international guidelines

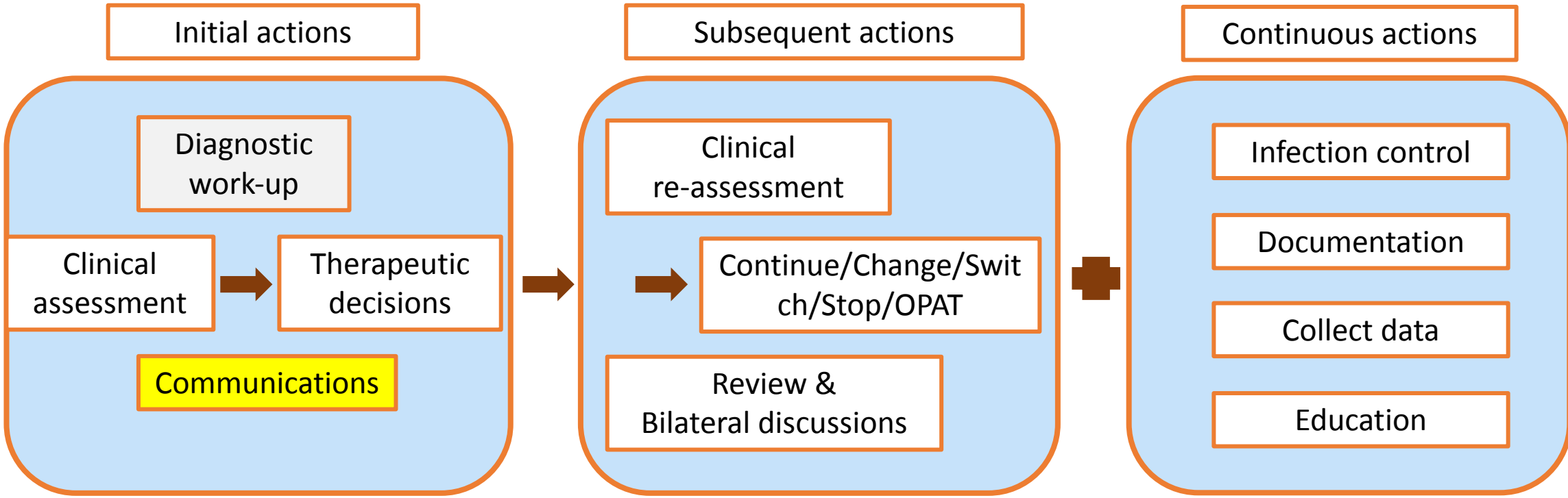
NA

Step 11: What **Delivery (route)** to be considered

- IV route – If vitally unstable or oral therapy is not possi…

NA

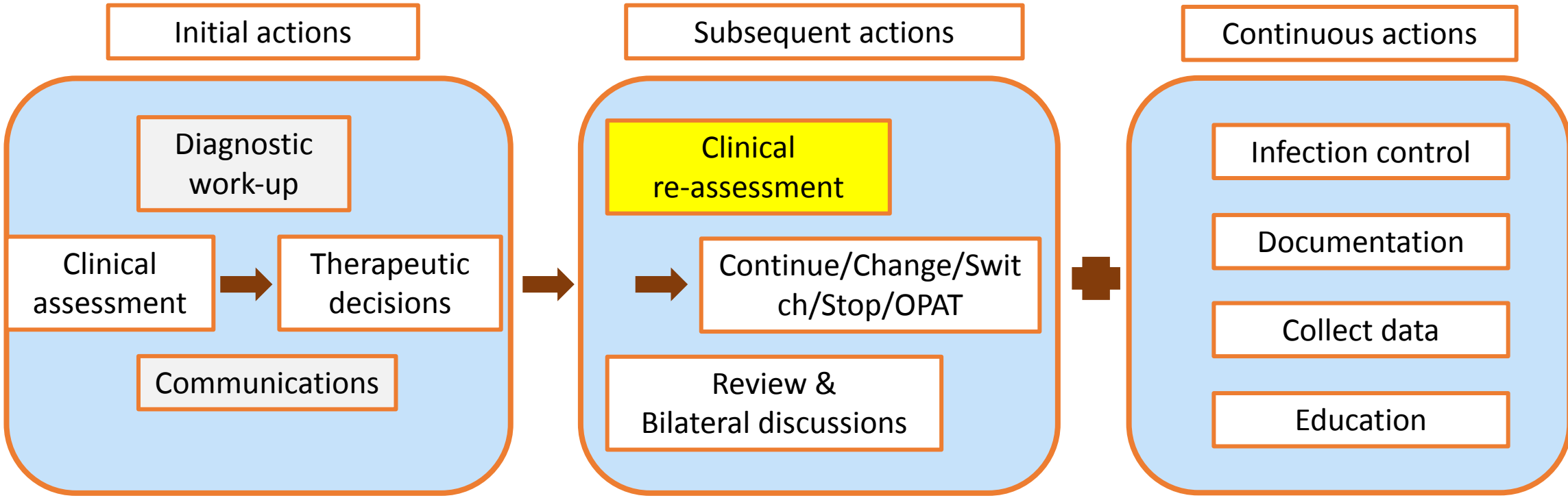
Stewardship comes in continuum



Communications

Step 12 : To patients/care takers	
If no antimicrobials prescribed	**If antimicrobials prescribed**
• Give specific diagnosis • Provide reassurance • Symptomatic therapy • Advise against acquiring antibiotics by other means • Offer follow-up visit (safety net)	• Give specific diagnosis • Educate about adverse effects • Clear instructions on follow-ups
Step 13 : To other healthcare professionals	
• Pharmacist – • Nursing staff – • Microbiologist – • Pharmacologist –	• clear instruction on prescriptions • instructions on delivery of drugs and proper sampling • samples being sent • Drug's PK/PD implication

Stewardship comes in continuum



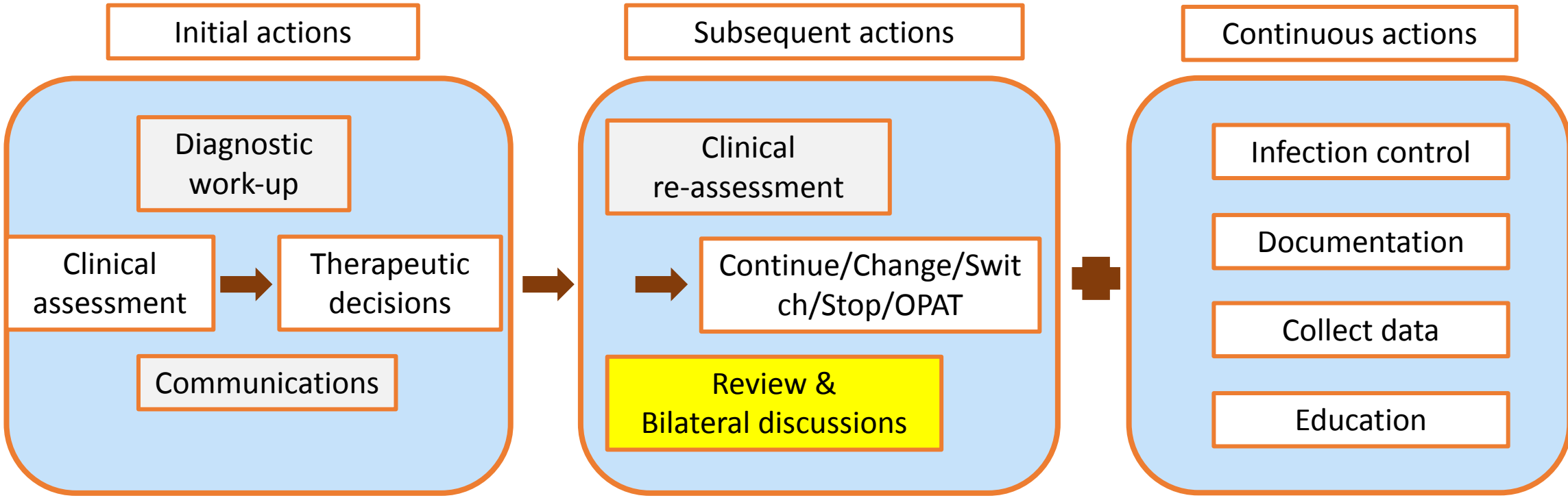
Clinical re-assessment

Step 14: **Review the responses to therapy** (on continuum) After 3days

- Resolution of symptoms
- Resolution of signs
- Resolution of lab parameters

Step 15: Monitoring **adverse consequences**

Stewardship comes in continuum



Review & Bilateral discussions

Step 16: Review **with pharmacologist**

- Appropriateness of drug doses, delivery, and [illegible]py
- Reporting of ADR if any

NA

Step 17: Review **with microbiologist** with lab reports

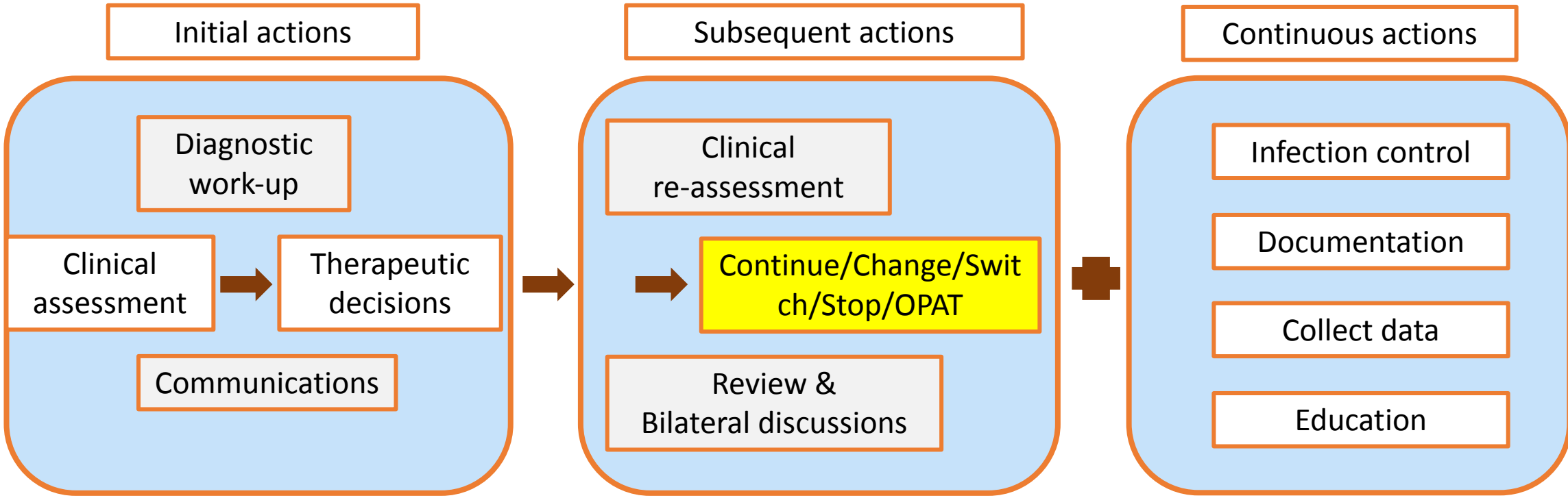
- **Right diagnosis of an organism** – *6-step model*, we are proposing
- Appropriateness of drugs and microbiological cle[illegible]ment if any

NA

6-step model to decide pathogenicity

Is it a Pathogen, Commensal, Coloniser, or Contaminant?					
Does the isolated microorganism cause infection at the sampled site?	***Is there any features suggestive of local site invasion or sepsis ?***	***Is the microorganism part of normal flora?***	***Is there any patient characteristics deciding growth of microorganism?***	***Is there any possibility of contaminants?***	***Lastly, during follow-up, is outcome favours your diagnosis?***

Stewardship comes in continuum



Continue/Change/Switch/Stop/OPAT

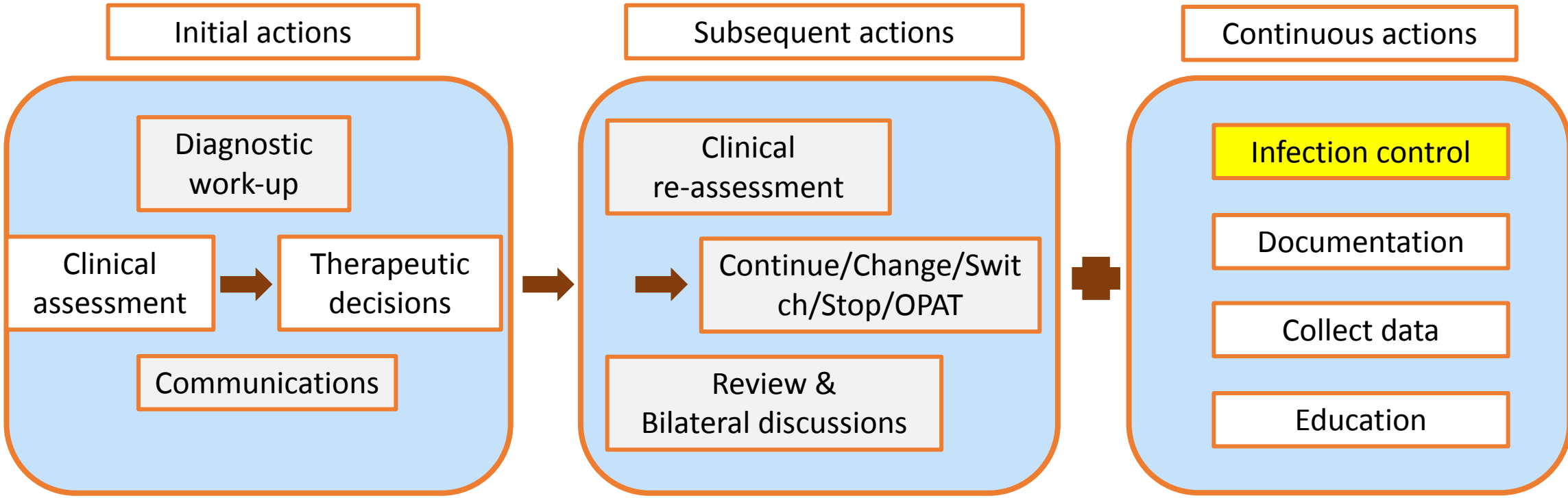
Step 18: Reviewing **therapeutic decision**

- Continue same treatment for adequate duration
- Change to another class of drugs based on clinical/microbiological review
- Switch to other formulation of same drug

NA

- Stop therapy if not indicated
- Outdoor Parenteral Antimicrobial therapy (OPAT) advised on discharge

Stewardship comes in continuum



Infection control

Step 19: **Infection source control**

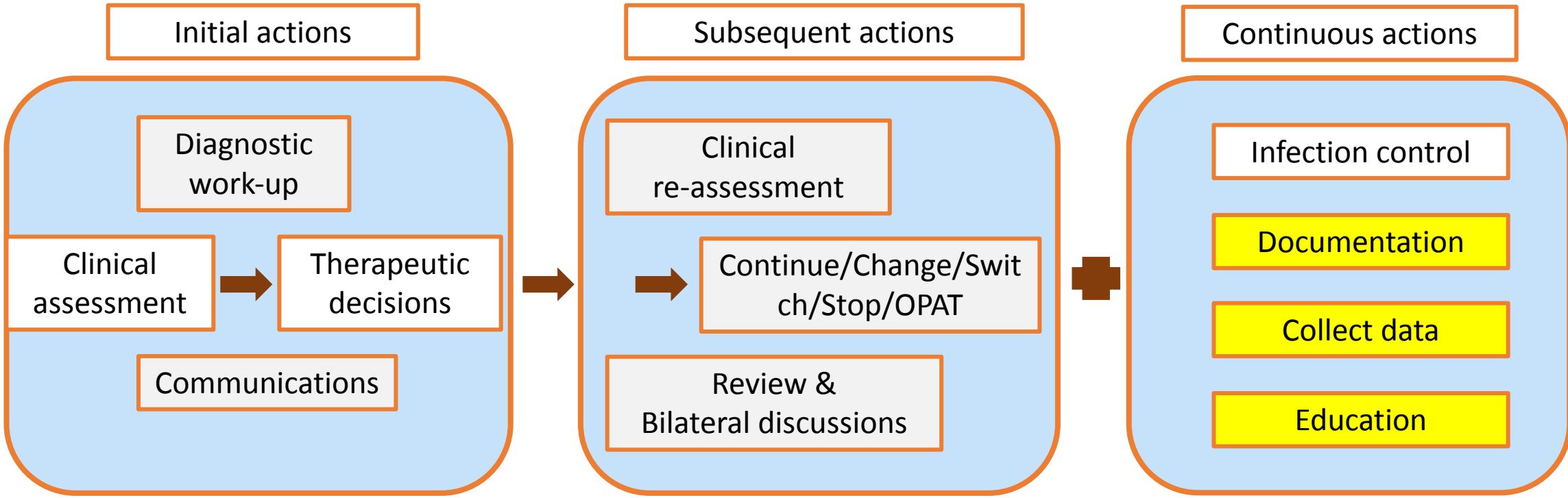
- Surgical evaluation if req
- Isolation if required

Gargle with antiseptic

Step 20: **Hospital infection control** principles to be practiced

Hand Hygiene	**Must**
Standard and transmission based Precautions	Droplet
Bundle Care (central line, catheter, VAP, bedsore, surgical site) when required	None
Biomedical waste Management	Must
Needle Stick Injury management	None
Vaccination	Must

Stewardship comes in continuum



Documentation, Data collection & Education

Step 21: **Clear documentation** of everything in patient's file (conti

- Ensuring documentation by other health care professionals

MUST

Step 22: **Data collection** in a pre-defined proforma (continuum)

- Collecting, analyzing, discussing in ID meets, modifying skills
- Participating in collaborative research works on ASP

MUST

Step 23: **Sharing knowledge** with others (continuum)

- Organizing weekly/monthly ID meets and sharing own works
- Sharing in conferences, publications, and medias

MUST

Summary of Q1

- Acute pharyngitis in adults is most commonly caused by a viral infection
- Clinical prediction scores can be used to determine which patients should undergo microbiologic testing for Group A Streptococcal pharyngitis
- Penicillin is first-line therapy in non-allergic patients diagnosed with streptococcal pharyngitis
- Directly ask regarding your patient's expectations for antibiotics to facilitate communication

Exercise 2

A 45 year-old healthy woman consults you (thinking you a MBBS doctor and his relative) with 2-day history of fever with chills, cough, and pleuritic chest pain in early winters. She described productive rusty brown sputum. She denied any flu contact but heavy tobacco smoker. She had vaccines but not up to date. She had not received any recent antibiotics. She had temperature 103^0F, HR-105, RR-35bpm, BP-80/50 mmHg, oxygen saturation 91% on room air. Chest exam revealed bilateral basal crackles, decreased breaths in left infra-axillary area with noted egophony.

What is the management you will advice ?

Clinical assessment

Step 1: What is **clinical diagnosis** (Evidence based) from history and examination

C(U)RB- 65	Point	Total (CRB-65) score	Mortality	Management
Confusion - present	1	≥ 3 (≥ 3)	22% (31%)	ICU
Urea - >20mg/dl	1	2 (1 or 2)	9.2% (8.15%)	Hospital
RR - >30bpm	1	0 or 1 (0)	1.5% (1.2%)	Home
SBP <90, DBP <60 mmHg	1	**IN THIS PATIENT CURB 65 SCORE- 2**		
Age >65 yrs	1			

Step 3: What is **Severity** of illness (suggests life threatening infections) **IPD**

- Symptoms, Looks, Vitals, any scores

Diagnostic work-up

Step 4: Any **Emergency/Routine lab tests** To identify Sepsis (e.g. organ involvement)

MUST

Step 5: Any **Point of care tests**

- CXR – PA view – Suggest consolidation
- Hs-CRP - >100mg/L
- Urine pneumococcal antigen testing – Positive
- Sputum gram staining

Step 6: Any **Confirmatory tests: Sputum and blood**

Culture/Sensitivity: Proper sampling, transportation, and instruction to microbiologist

Therapeutic decisions

Step 7: What **Organism Related Factors** to be considered

- Use of any antibiotics in recent past
- Local antibiogram/national guideline suggesting any Resistance pattern

None

Step 8: What **Patient Factors** to be considered

- Age group - extremity of age, Pregnancy & Lactation
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- **Spectrum of activity** – narrow vs broad; dep f illness, treatment types, and immune status of th
- **Bactericidal vs bacteriostatic** – decision d nfection and immune status of the patient
- Relative **toxicity and cost**
- **Interaction** with other drugs

Ceftriaxone
+
Azithromycin

Step 10: What **Dose & Duration** to be considered (Evidence based)

- Concentration vs time dependent inhibition
- National or international guidelines

C-1gm BD infusion/4hr/7d
A-500mg OD/5d

Step 11: What **Delivery (route)** to be considered

- IV route – If vitally unstable or oral therapy is not possible

IV

Communications

Step 12 : To patients/care takers	
If no antimicrobials prescribed	**If antimicrobials prescribed**
• Give specific diagnosis • Provide reassurance • Symptomatic therapy • Advise against acquiring antibiotics by other means • Offer follow-up visit (safety net)	• Give specific diagnosis • Educate about adverse effects • Clear instructions on follow-ups
Step 13 : To other healthcare professionals	
• Pharmacist – • Nursing staff – • Microbiologist – • Pharmacologist –	• **clear instruction on prescriptions** • **instructions on delivery of drugs and proper sampling** • **samples being sent** • **Drug's PK/PD implication**

Clinical re-assessment

Step 14: **Review the responses to therapy** (on continuum)

- Resolution of symptoms
- Resolution of signs
- Resolution of lab parameters

24 hourly

Step 15: Monitoring **adverse consequences-None**

Review & Bilateral discussions

Step 16: Review **with pharmacologist**

- Appropriateness of drug doses, delivery, and [illegible]py
- Reporting of ADR if any

MUST

Step 17: Review **with microbiologist** with lab reports

- **Right diagnosis of an organism** – *5-step model*, we are proposing
- Appropriateness of drugs and microbiological cle[illegible]ny

Sputum – St. Pnuemonia sensitivity to ceftriaxone, azithromycin, others

Continue/Change/Switch/Stop/OPAT

Step 18: Reviewing **therapeutic decision**

- Continue same treatment for adequate duration
- Change to another class of drugs based on clinical/microbiological review
- Switch to other formulation of same drug
- Stop therapy if not indicated
- Outdoor Parenteral Antimicrobial therapy (OPAT) advised on discharge

Stop Ceftriaxone and switch to
Oral therapy of azithromycin
for total duration

Infection control

Step 19: **Infection source control**

- Surgical evaluation if req
- Isolation if required

Not required

Step 20: **Hospital infection control** principles to be practiced

Hand Hygiene	**Must**
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Vaccination	Must

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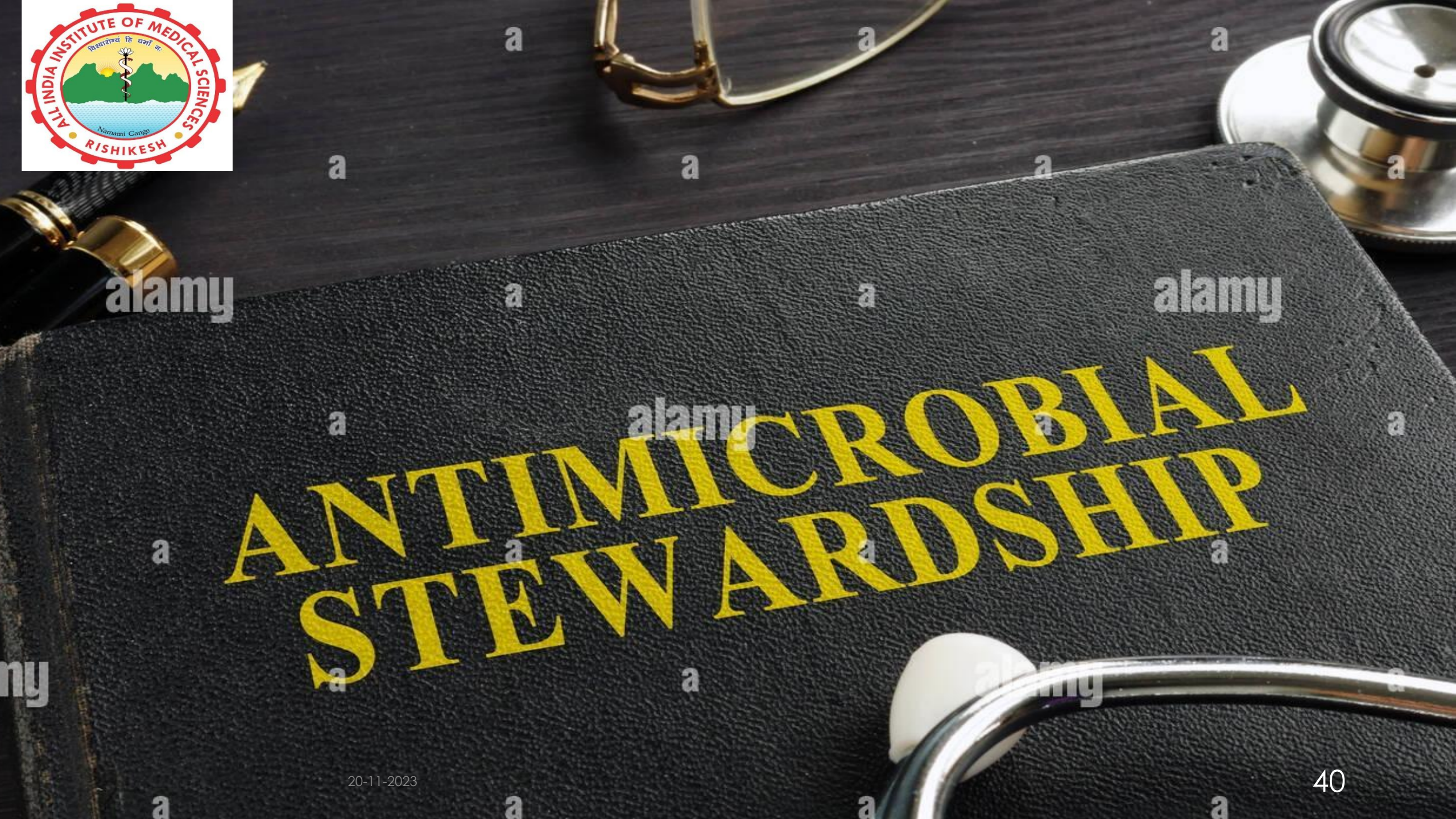
Summary of Q2

- Rapid diagnosis tests help in early diagnosis of bacterial pneumonia
- Use guidelines to make empiric antibiotic choices and adjust antibiotics with microbiologic data
- Typical duration of therapy is <7 days
- Vaccination is the key to prevent severity of illness

Open Discussions…

- What are the advantages of the described bedside IAS system?
- What are its limitations?
- What would be obstacles to the implementation of the system in our setting?
- How do you think the system could be improved?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