A MULTI-STAKEHOLDER APPROACH TOWARDS OPERATIONALISING ANTIBIOTIC STEWARDSHIP IN INDIA'S PLURALISTIC RURAL HEALTH SYSTEM

ORIENTATION SESSION 2: FEASIBILITY STUDY (HUMAN HEALTH)

Introduction

The second orientation was conducted on June 27 2022 with ten frontline providers who participated in the first orientation. Mr. Partha Bose from AIIMS Kalyani greeted all the participants before the warm-up session. During the warm up session, he reiterated the background information in the first orientation. Dr. Aloke Biswas also briefly introduced the two guidelines that would later be covered in the session. The sessions were conducted in Bangla (Bengali) language.

Warm up session

During this part of the session, Dr. Aloke Biswas presented four questions for discussion.

1. **What do you understand about AMR? What happens in AMR?**

Frontline provider (FP)1: AMR means a drug becomes resistant while used to fight bacteria and therefore is not working against bacteria. "*This is in general terminology known as antibiotic resistance".* AMR implies the medicine stops working. "*The germ becomes stronger and then it is difficult to kill the germ or its variation. Thus it is spreading in new ways".*

FP2: AMR happens when the drug faces obstacle to cure the disease.

FP3: This means the medicine is not working anymore; it becomes resistant as the virus has become more powerful.

Then Dr. Aloke Biswas again clarified the difference between bacteria and virus and explained that antibiotics kill bacteria and not virus.

2. **What are the causes of AMR? What are the main causes of AMR?**

Mixed responses are evident to these questions, however, most of them have shown a moderate degree of understanding about drivers of AMR.

IP4: According to him, the medicine becomes less active because germs become powerful. He added that AMR happens due to excessive use of antibiotics. "*Germs are becoming powerful and build protection against the medicine and the medicine fails to kill the germs".*

IP1: He mentioned three causes, including inaccurate dose of antibiotic, improper use of antibiotic such as taking the antibiotic every 10 hours instead of the recommended 8 hours, and improper combinations of

medicines. "*The dose of Azithromycin is one capsule per day while that for Cefixime is two capsules per day. If it is taken once daily then resistance against Cefixime is built".*

IP5: "*When same antibiotic is repeatedly used it is unable to kill germs. Bacteria are spreading in the body. Sometimes it comes through food"*.

3. **What are bacteria?**
4. **In AMR, what becomes resistant, the body or the bacteria?**

Mixed responses are evident in response to this question as well. Some of them replied that resistance is built by bacteria within human body whereas some of them said resistance is built within bacteria themselves. Dr. Biswas then explained this in detail.

The orientation

Dr. Aloke Biswas explained the guidelines with anatomical pictures of upper and lower respiratory tracts. He explained in short what is called upper respiratory tract infection i.e. infection in the upper portion of the respiratory system and lower respiratory tract infection implies infection in the lower part.

Upper Respiratory Tract Infection

Dr. Biswas began explaining the URTI guideline with ear infection; describing anatomy of human ear drawn on a flowchart and gave them the precise idea about areas affected by ear infection and causes behind. He then explained ear infection with all external, and middle ear infection possibilities and related symptoms. He explained in detail about parts of the upper respiratory tract including larynx, trachea, and the nasal cavity. He also asked providers to explain the symptoms and how these symptoms lead to sinusitis, influence olfactory nerve and impact taste and smell etc. according to the guideline as well as which medicines are to be prescribed or dispensed. Next, he described throat infection and tonsillitis. Providers were asked to read the guideline to understand when to and not to use antibiotics based on diagnosis followed by detailed explanation and repeat recalls. Then he explained the dosage in detail along with steps to be followed during allergic reactions. The session was interactive. For example, after explaining ear

infection and the nature of medicines to be used for treatment, Dr. Biswas asked the provider whether they would prescribe or dispense antibiotics if pus is coming out from ear. They replied that they will prescribe drops but if infection is in middle ear, it will not work so they asked for the remedial measure.

Dr. Biswas explained the usefulness of the fever-pain score and explained how dosages must be decided based on age and weight. He also talked about the need for referrals. One of the providers asked whether resistance occurs with paracetamol and Dr. Biswas explained that resistance occurs with antibiotics, not with paracetamol.

Another provider asked about Extended Release and Sustained Release of dosage and Dr. Biswas explained these terminologies. Another IP asked about bleeding through the nose and Dr. Biswas explained how to cure it and the nature of medicines to be used. Dr. Biswas also showed them the technique for stopping nose bleeding.

Q and A

FP1: He asked about the dosage criteria with example and Dr. Biswas categorised dosage details by age group, for e.g. less than 2 years, 2 – 6 years, 6 – 12 years and also the dosage requirements for 12+. He further asked why in some of the cases of fever, higher doses are recommended. Dr. Biswas replied that some of the bacteria attack in such a way that usual AB doses will not work to kill them. If a higher dose is not prescribed, a blood infection may occur. To prevent blood infection or septicemia a strong dose is to be given.

FP6: He asked about coverage and spectrum which was clearly explained by Dr. Biswas. He also told them that if they find AMR in one area or locality it does not imply that AMR is prevalent in adjacent localities. In other words, it is not that the patients in one location will not respond to Amoxicillin if resistance in Amoxicillin is found in other areas.

Lower Respiratory Tract Infection

Dr. Biswas started explaining Lower Respiratory Tract Infection by clarifying important factors or drivers of LRTI. He then started describing infection in the lower respiratory tract and related symptoms outlined in the guideline, including symptoms found in infants and children, the kind of co-morbidities may exist and how this affects infections, steps to follow for treatment, and referrals.

One provider asked whether pneumonia can lead to cancer. Dr. Biswas explained the possibility of the occurrence of tuberculosis from pneumonia and ruled out the possibility of cancer.

Next, he explained the guideline following step by step care towards treatment - when to use paracetamol, why not to cover the patient with thick blankets if suffering from high fever etc. Dr. Biswas explained that if the patient is shivering with high temperature, the person may feel comfortable with a blanket but even if there is high temperature he will sweat and sweat will evaporate so we perceive that the patient is comfortable as we can't see him sweating. But it will create negative impact.

One of the IPs asked whether ceiling fan can be recommended for comfort and Dr. Biswas replied that what makes the patient comfortable is good at that situation.

Remaining questions on fever and diarrhea guidelines

When should antibiotics be used in illness?

FP1, FP2, and FP5: They replied that they will first take the history of ailment and for how many days the patient has been suffering, their symptoms and provide IV saline if required. "*First, we have to find out about the history of the patient, then symptoms and timing related to the illness, after 10 days of the illness AB should be given".*

Providers asked whether pneumonia patients can be treated with azithromycin and if asthma patients can be treated with antibiotics. Dr. Biswas said that asthma or COPD patients can be given antibiotics when they have secondary infection. Dr. Biswas made it clear repeatedly that antibiotic resistance is built within bacteria.

What is your experience with following the guidelines you have received so far to treat patients?

Providers shared that the guidelines clearly mentioned the treatment pathways. According to them it is very easy to understand and follow. They also added that prescribing and dispensing antibiotics has become easier.

What kind of responses have you received from your patients when you are not prescribing/ dispensing antibiotics immediately (as recommended in the guidelines)? Give examples.

FP2: He mentioned that when they are offering treatment according to the guideline, cure is getting delayed and as per the patient's perspective, since he is not prescribing antibiotics, the patient is suffering more. It increases the likelihood of losing patients to other providers.

They also mentioned that some of the qualified providers who are highly influenced by medical representatives are prescribing antibiotics from the very first day. This is one important driver of creating bad reputation of frontline providers and them losing the trust of patients. Patients are unhappy as frontline providers are not prescribing or dispensing antibiotics. Even if the good practice is reducing patient's out of pocket expenditure on healthcare; caregivers' psychology leads to different behaviour where they are ready to borrow money to purchase medicine and prefer the fast cure compared to better cure.

Dr. Biswas advised to write experience diaries and to share with the OASIS team to consider possible solutions to these kinds of problems.

Have you referred any patient or consulted doctor instead of prescribing/dispensing antibiotics? Give examples.

Some of the providers asked if their referrals would be considered or accepted as a referral from a doctor.

FP1: He said that they write prescription mentioning that the prescription is written by 'gramin chikitsok' or 'rural provider'.

Providers asked Dr. Biswas whether they can refer patients to AIIMS. The team mentioned that it will take time for the AIIMS closeby to be fully operational. So, they can refer to R.G. Kar, PG etc. And that they would be informed when AIIMS is fully operational.

Are you facing any other challenge in following these guidelines? Explain in short. Do you have queries regarding antibiotics and their use, based on what we explained to you in our last meeting?

FP2: He suggested that they need training on how to understand pathological test reports.

Do you think any further modification is required to make the previous guidelines more acceptable and usable?

They mentioned that in the diagnosis section of the fever guideline, abbreviations of the investigation process are used which they do not understand. They also asked about the CRT process. Dr Biswas explained this in detail. Providers recommended that the abbreviated terminologies be expanded in next

iterations. Dr. Biswas encouraged providers to use the WhastApp groups created during the first orientation to ensure all queries are answered.

Mr. Partha Bose concluded the session by thanking all the participants and distributed food packets. The team requested the providers to use both the guidelines for the next 7-10 days and report back regarding the usability of the two guidelines.