Diagnostic and Treatment Algorithm

What is it?

A diagnostic and treatment algorithm is a technique for standardizing decision-making and improving technical quality of care. By providing a series of questions, it guides the caregiver to the correct diagnosis and treatment for the most commonly observed pathologies. A diagnostic and treatment algorithm is useful for systematizing or standardizing clinical behavior for frequently occurring situations.

Who uses it?

Members of your team who are medical professionals: doctors, nurses, and medical assistants.

Why use it?

To improve technical quality of care at an affordable cost.

When to use it?

When errors in diagnosis or incorrect treatment are among the causes of low quality of care.

How to use it:

1. Select the most frequent reasons for using the health service.

Observe the clinic for a chosen amount of time, until a pattern can be observed. Select the most frequent reasons for consultation. You can use a tally sheet to determine the most frequent reasons for consultation. For example, one frequent reason children come for a consultation is "fever."

2. Define possible diagnoses.

Define the most frequent or critical diseases that could cause the selected symptom. A review of the case mix in your area using the Health Information System could be useful at this point. For example, fever in children can be caused by meningitis (in endemic areas), malaria, measles, acute respiratory infections (ARI), ear infection, or the flu.
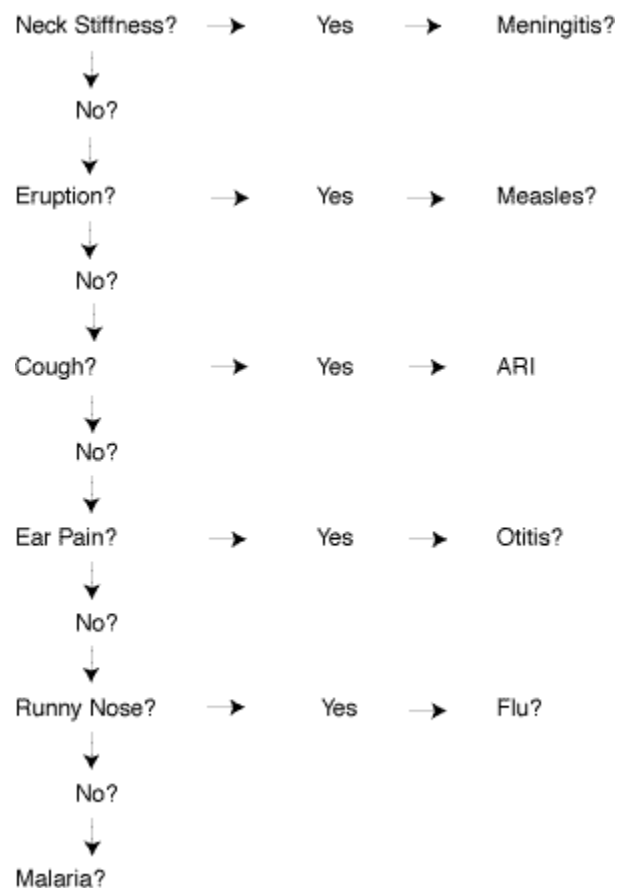
3. List associated symptoms.

List the most common or easy-to-recognize, specific symptom associated with each disease. If several symptoms could be associated with the disease, select the most specific and the most easy-to-recognize symptom.

For example, a specific symptom of meningitis is neck stiffness; of measles, eruption; a common symptom of ARI is cough; of malaria, headache; of ear infection, ear pain; and of flu, runny nose.

4. Create a flowchart.

Organize the symptoms in a flowchart so you can diagnose the diseases by process of elimination, one by one. Start with the most specific symptom (only present in the case of that disease) and proceed to the most common (associated with several possible diseases), only giving two options at each step (yes/no). The last diagnosis will be arrived at by eliminating all specific symptoms.

Sample diagnosis and treatment flowchart:

```
Neck Stiffness?  ──►   Yes   ──►   Meningitis?
      │
      ▼
     No?
      │
      ▼
Eruption?        ──►   Yes   ──►   Measles?
      │
      ▼
     No?
      │
      ▼
Cough?           ──►   Yes   ──►   ARI
      │
      ▼
     No?
      │
      ▼
Ear Pain?        ──►   Yes   ──►   Otitis?
      │
      ▼
     No?
      │
      ▼
Runny Nose?      ──►   Yes   ──►   Flu?
      │
      ▼
     No?
      │
      ▼
Malaria?
```

5. Define the decision to make at each step.

For each diagnosis, there are three possible decisions to be made:

1. Use another algorithm to pinpoint the diagnosis (or the treatment).

    For example: cough (plus fever) can tell you that the child is suffering from ARI but doesn't give enough information for deciding on the treatment. Therefore, you need to develop an algorithm specifically for cough.

2. Referral for complementary diagnostic tests or treatment.

    For example: neck stiffness is a life-threatening sign and requires a referral to the hospital.

3. Treatment and follow-up, which has to be specified.

    For example: a runny nose can be treated with aspirin. Malaria should be treated with aspirin and chloroquine. In both cases, the dose per weight and specific dosage should be specified.