**DELIVERABLE 1: LITERATURE SEARCH.**  Conduct a data search. Read over abstracts, articles, and other relevant materials. For **at least** 10 articles or data sources you want to explore for your policy brief, enter the author(s), title, data source (journal or other source), relevant points and the hyperlink (if applicable). **Articles and other data sources should be relevant to the health problem, problem statement and potential policy options**.

**NOTE: YOU’LL ADD ARTICLES AND DATA SOURCES TO THIS TABLE TO THROUGHOUT THE COURSE.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Author(s)** | **Title (year)** | **Source** | **Relevant Points** | **Hyperlink** |
| *Example* | *Example* | *Example* | *Example* | *Example* |
| *Nigeria CDC* | *Latest Meningitis outbreak over in Nigeria; enhanced surveillance continues (2017)* | *Found by searching Google for ‘Nigeria meningitis 2017’* | * *December 2016-June 2017: 14,518 suspected meningitis cases, 1,166 deaths (CFR=8%)* * *Conducted reactive vaccination campaigns in Zamfara, Sokoto, Yobe, and Katsina states led by NPHCDA* | *http://www.ncdc.gov.ng/news/85/latest-meningitis-outbreak-over-in-nigeria%3B-enhanced-surveillance-continues* |
| *Chow J; Uadiale K; Bestman A; Kamau C; Caugant DA; Shehu A; Greig J* | *Invasive meningococcal meningitis serogroup C outbreak in northwest Nigeria – third consecutive outbreak of a new strain (2016)* | *PLoS Currents* | * *New serotype C causing most bacterial meningitis cases in Nigeria 2013-14* * *Cumulative attack rate: 282/100,000 in affected wards 🡪 potential outbreak size!* * *>220,000 people vaccinated early in outbreak in proactive campaign* * *Recommend considering long-lasting vaccine administration in region (proactive)* | *https://www.ncbi.nlm.nih.gov/pubmed/27508101* |
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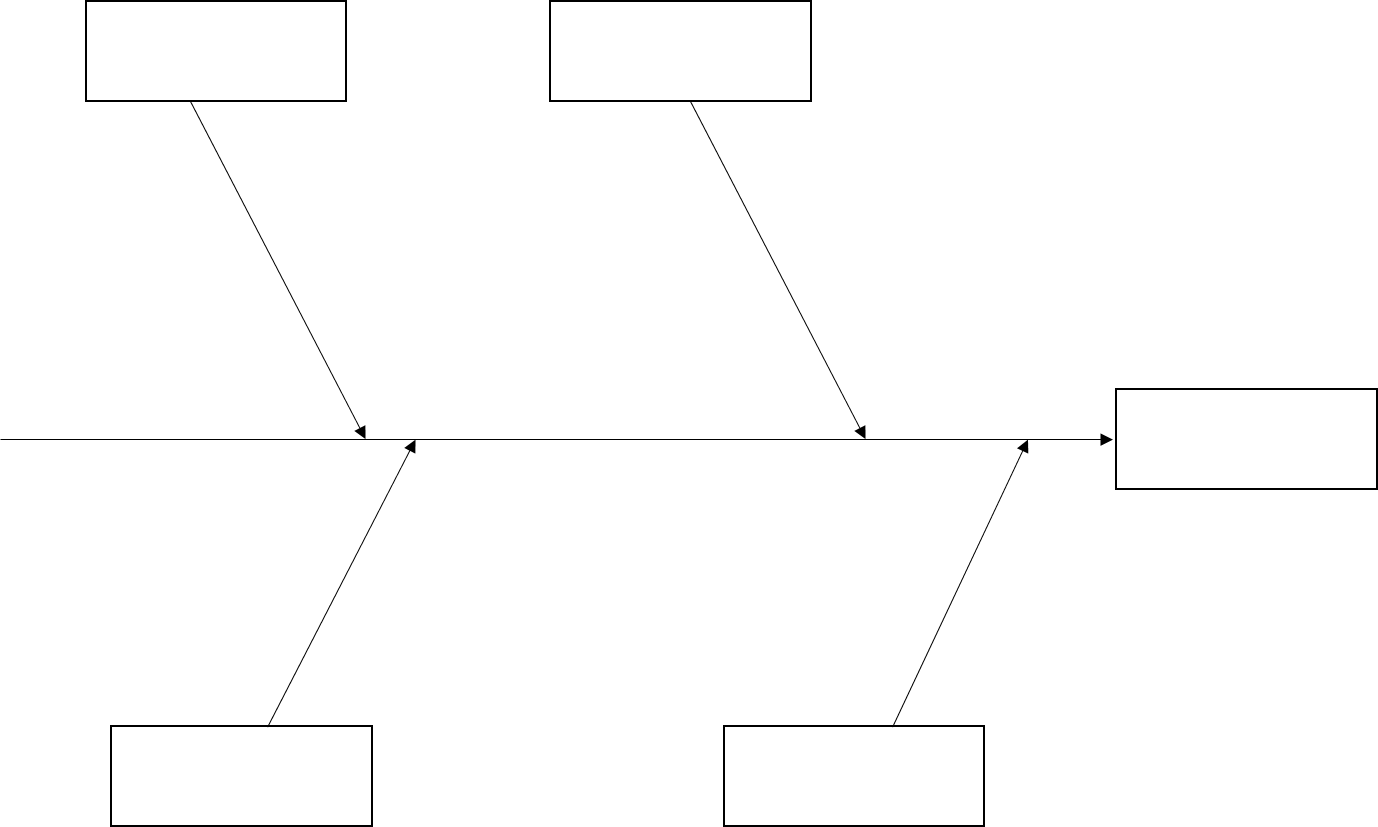
**DELIVERABLE 2:** **ROOT-CAUSE ANALYSIS.** Conduct a root-cause analysis. In the space below, fill in the health problem, the primary cause and possible root causes. Next, fill in the fishbone diagram (feel free to draw your own or modify the fishbone on the next page). Categorize root causes in the table as being totally (T), partially (P) or not easily (N) modifiable and prioritize causes in order of expected impact on the health problem.

**NOTE: YOU CAN RETURN TO THIS TABLE TO MODIFY THROUGHOUT THE COURSE.**

1. HEALTH PROBLEM: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. PRIMARY CAUSE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. POSSIBLE ROOT CAUSES:

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| **Possible Root Cause** | **Modifiability (Totally, Partially, Not Easily)** | **Impact (High, Medium, Low)** |
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Label the head of the fishbone with the primary cause. Add each root cause to the fishbone diagram in appropriate category groups (see ELM 3). Label each root cause on the fishbone diagram with a T, P, or N, as you’ve done in the table, and mark the diagram to identify root causes you would like to consider as targets for your policy brief.



**DELIVERABLE 3:** **PROBLEM STATEMENT OUTLINE.** Fill in an outline for your problem statement by answering the questions below. Each section should be a few sentences to a few paragraphs. Use data identified in your data search (Deliverable 1). Expand the boxes as needed. Don’t be afraid to indicate where you need to find more data!

**NOTE: YOU WILL CONTINUE TO FILL IN THIS OUTLINE THROUGHOUT THIS COURSE.**

1. **What is the problem? (health issue and primary cause)**

*E.g., The health problem is repeated outbreaks of bacterial meningitis. Bacterial meningitis is caused by multiple types of bacteria, but in Nigeria it has historically been caused by Neisseria meningitidis serogroups A, W, and X. Infection can cause meningitis that rapidly progresses to death within hours or days among 5%-20% of persons infected, as well as permanent hearing loss or brain damage in ~10% of survivors. In our setting, its primary cause is lack of immunity among at-risk persons and crowded conditions that facilitate transmission.*

1. **Qualify the problem. (who is affected and where)**

*E.g., The problem affects infants, children and, to a lesser extent, adults throughout the meningitis belt in Nigeria.*

1. **Quantify the problem. (how much and when)**

*E.g., Every year during the hot, dry season from November through June, meningitis epidemics spread across the meningitis belt of Africa, including parts of Nigeria. Since 2013, there have been annual outbreaks of Neisseria meningitides serogroup C, a new type in Nigeria (Chow J et al, PLoS Currents, 2016). The outbreak in 2017 was the largest yet, affecting nearly 15,000 people and killing nearly 1,200 (NCDC, 2017). Attack rates have been as high as 3 per 1,000 in affected areas.*

1. **What are the root cause(s) of the problem?**

*E.g., Although reactive vaccination campaigns have been used periodically in some wards (Source et al, 2015), it is difficult to implement them fast enough to maximize their effect. Even with these campaigns, relatively few people are protected over the long term. A serosurvey in 2016 showed that only 9% of adults in the affected area carry antibodies against meningitis serogroup C (Gibson et al, 2017). In addition, although rapid treatment can prevent death, most people do not know what symptoms should indicate a visit to a health facility for treatment. This is particularly critical during an outbreak.*

**DELIVERABLE 4:** **POLICY OPTIONS DRAFT.** Based on your root-cause analysis, your data search and what you already know about the health problem in your country, write down the policy options you are considering to address your health issue. Be specific about each option: who would it target, when would implementation begin, how long would implementation last and what is the intervention? For each option, write down what you already know and what you STILL need to determine about the issues detailed below. You will not have enough information yet to complete this analysis: **what you *need to know* will likely be more than what you already know!**

**NOTE: YOU WILL MODIFY THIS TABLE THROUGHOUT THE COURSE.**

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| --- | --- | --- | --- | --- |
| **Policy Option** | **Operational Feasibility** | **Political Feasibility** | **Budgetary Impact** | **Economic Impact** |
| *E.g., Option 1: Reactive vaccination of persons aged 2-45 years with MenACWY vaccine* | * *No reactive vaccination campaigns done in country previously – how has this worked in other countries?* * *Capacity to store vaccines in country?* * *Where to find people for implementation* * *How long would this take?* * *Where to purchase vaccine?* * *When would reactive vaccination take place?* | * *We know that the MoH already supports this! Minister’s daughter had meningitis in 2016* * *Vaccine champion (A. Mohammed) in immunizations dept. could help take this on* * *May need to do district-level education – investigate chiefs’ interests* | * *Need to determine cost of vaccine from different sources* * *Use last year’s mop-up vaccine campaign for measles to estimate admin costs?* | * *What outcome measure to use? Deaths, DALYs, YLLs?* * *Include long-term disability? DALYs?* * *Need to estimate cases in next year with vs without vaccine* |
| *E.g., Option 2: Proactive vaccination of persons aged 2-45 years with MenACWY vaccine in previously high-risk areas* | * *Very large population to target – how to get and store that many vaccines?* * *How many staff to implement vaccination campaign How long would it take?* * *Where to purchase vaccine?* * *How to define high risk?* | * *Same as above* * *Vaccine acceptance more difficult when no outbreak happening* * *Not clear that areas of past high risk will continue to be current high-risk areas* | * *Need to determine cost of vaccine from different sources* * *More expensive than above – many more targeted?* | * *Potentially more lives saved, disability averted vs above option – need to calculate* * *What outcome measure to use? Deaths, DALYs, YLLs?* * *Need to estimate cases in next year with vs without vaccine* |
| *E.g., Option 3: Educational campaign for early treatment* | * *Lots of experience with educational campaigns in affected areas – logistics not complicated* * *What approach to take? Radio, TV, newspaper? How many / how often? Who designs messages?* | * *Clear political buy-in, should not be complicated* | * *Radio spots may not be expensive; TV and print may be more costly* * *Talk with Ministry of Finance about costs of advertising / educational campaigns* | * *Fewer lives saved vs vaccination campaigns? Need to estimate* * *May be more economical due to much reduced cost* * *No long-term protection conferred* |
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