Module 3
Identifying Health Problems

Slide 1: Title Slide

Thank you for joining us for Module 3: Identifying Health Problems. Now that we have defined our community, it's time to identify its priority health problems.

Slide 2: Disclosures for Continuing Medical Education (CME)

(No accompanying text)

Slide 3: Agenda

During this module, we will discuss gathering quantitative and qualitative data, introduce the concept of social determinants of health, and go over one method for prioritizing health problems.

Slide 4: Objectives

By the end of this module, we hope that you will be able to list the steps involved with gathering quantitative and qualitative data about a community, define social determinants of health, and list the steps involved with prioritizing health problems.

Slide 5: Introduction to Winnie

But first, let's start with a case. This is Winston – or Winnie for short. He's a 7 year old male and is seeing you for a well child visit. He has soft drinks 5 times per week and eats fast food 5 times a week. During the visit, you notice that his BMI is 20, which is greater than the 95th percentile and has been increasing over time. Periodically, we'll be coming back to Winnie to see how COPC affects him.

Slide 6: Map of World's Greatest Clinic (WGC) in Ward 8

In Module 2, Dr. Rankin provided us with more information about your clinic – World's Greatest Clinic, or WGC for short – which is located in DC's eighth ward.

Slide 7: Map of World's Greatest Clinic in Census Tract 007407

More specifically, the clinic is located in census tract 007407. Now that we have learned about defining the community of our clinic, it's time to learn more about the health problems affecting our community.

Slide 8: Statistics and Stories

Gathering both quantitative and qualitative information increases the likelihood that we will capture the community's most pressing health needs. Quantitative information can be obtained from census bureaus, public health departments, and government agencies.

Previously, COPC practitioners had to calculate and gather these statistics on their own. Now, many of these statistics are available online and many large data sets are available on the tools that we will be

introducing. Qualitative information can be obtained from questionnaires, and focus groups can uncover the opinions, attitudes, and beliefs of those in your community.

Slide 9: WGC Quantitative Data

Obtaining baseline descriptive statistics such as the median age, the percent female, the percent of each race, and the absolute number of people is a helpful first step in trying to capture your community from a quantitative perspective.

As we mentioned before, the clinic identified 16 census tracts that represent its community. 14 of those census tracts are in Ward 8. Ward 3 is in the northwest portion of the city and is relatively affluent. When census tract level data were not available, the clinic used Ward 8 data as a proxy. From this table, you can see that Ward 8 is younger and has a higher percentage of African Americans than the rest of DC.

Slide 10: WGC Quantitative Data (2)

As previously mentioned, the COPC team has identified that Ward 8 has an infant mortality rate that is four times that of the nation-wide rate and nearly twice that of the DC rate.

Slide 11: Vital Statistics of the District of Columbia

Much of these data were obtained from the DC Department of Health, which produces a vital statistics document yearly.

Slide 12: DC Obesity Action Plan

These are data taken from the DC obesity action plan

As you can see, Ward 8 has:

- a higher percentage of people who are obese

- a lower average household income

- a lower percentage of people getting moderate exercise

- longer distances to travel to parks

- and more violent crimes

Slide 13: Ward 8- HL Population Younger than 18

The preceding tables have given you an overview of Ward 8. Now, let's look at how maps can supplement that data.

While the statistics in the table provide the audience with concrete information, the information contained within maps provides the reader with a more nuanced perspective that allows you to examine

smaller, more granular units of geography. This is a map generated from HealthLandscape of the percentage of the population that is younger than 18 years of age. Darker colors indicate a higher percentage of the population that is young. The highlighted area is roughly the area of Ward 8. As you can see, this area is filled with darker colors, also suggesting that this is a young community.

Slide 14: Ward 8- HL Population Younger than 18 (2)

Remember that darker colors indicate that a larger percentage is younger than 18 years of age. Once again, you can appreciate how Ward 8 is much younger than the rest of DC.

Slide 15: DC – HL African American Population

This map from HealthLandscape shows the percentage of the population that is African American with darker green indicating that a larger percentage of the population is African American.

Slide 16: DC- HL Low Income Population

This map from HealthLandscape shows the percentage of the population earning less than 200% of the federal poverty level. Darker blue indicates a higher percentage of the population earning less than 200% of the federal poverty level. As you can see, Ward 8 is more impoverished than the rest of DC.

Slide 17: DC- HL Population with High School Diploma

This map shows the percentage of the population with a high school diploma. Darker purple indicates that a higher percentage of the population has a high school diploma and lighter purple or white indicates a lower percentage. As you can see, ward 8 has a lot of census tracts that are light purple.

As we mentioned previously, at every step, you should include the community to validate your findings. Do they really consider Ward 8 to have a low high school graduation rate or a high HIV rate?

Slide 18: DC- Policy Map

There are numerous other mapping tools that can also provide helpful information. This is from a website, called Policy Map which provides access to a different set of databases. Using Policy Map, we can identify blocks where residents have to travel longer distances to access supermarkets. Purple block groups are areas designated as limited supermarket access areas.

Slide 19: DC- AIDSVu

This is from another website called AIDSVu which shows the number of HIV cases by census tract (for select cities). As you roll over the city, the site provides the exact number of HIV cases.

Slide 20: DC- AIDSVu Comparison Maps

Makers of mapping tools have long sought to allow the user to compare multiple variables. AIDSVu has devised an interesting solution to this problem. Here, you can see that they have created a side by side

comparison of the same map. On the left hand side, you see the HIV rates by county, and on the right hand side, you see the degree of income inequality by county.

Slide 21: Identifying Health Problems

Now that you have gathered statistics about the community, it's time to gather stories. In the next several slides, I'm going to outline one possible process for gathering qualitative information, but there are clearly many other ways of doing this.

Key informants can include both community leaders and those with intimate knowledge of the community such as educators and police officers. The questions used in an interview of key informants can also be used in focus groups. Using these methodologies ensures that the community is systematically involved with the COPC process. Furthermore, these community members can be used to inform and champion interventions.

Slide 22: Identifying Health Problems (2)

Here are examples of questions that you can ask during interviews with key informants and focus groups.

Slide 23: Identifying Health Problems (3)

A couple of other techniques are also helpful in obtaining information about the community. As we previously mentioned, if you already have data about the community, then these techniques can help validate that information.

Brainstorming is the least structured of these techniques and is a good way to generate ideas. There is no judgment on the contributed ideas until the brainstorming session has ended.

The next technique is the nominal group technique, which consists of four steps:

1) The group generates ideas by silently writing them on paper
2) A recorder lists all the contributions
3) Each idea is clarified and evaluated, giving each participant a chance to voice his/her perspective
4) Finally, group members vote on the priority order of the ideas and a rating system is used to establish group consensus

This process not only identifies options but also sets priorities among them, ensuring that a group decision will be reached. The disadvantage is that you may miss health concerns if particular groups are not represented. Furthermore, the result may be one with which you do not completely agree.

The third process is the delphi process. Participants are sent a questionnaire about health problems. Follow up questionnaires can be sent to clarify responses and ask for assistance with priority setting. The

disadvantages of this process are that it can be time consuming, may also miss health problems, and does not provide space for the group to interact.

The final process is ringi. A written document is circulated in successive drafts among group members who provide comments on the document but who never meet. The ringi process allows the group to respond to data gathered about the community. The delphi process and ringi are most helpful when problems have already surfaced and are less helpful in generating lists of problems.

Slide 24: Identifying Health Problems (4)

Your COPC team at WGC listed all of the problems mentioned by at least 3 key informants or focus group participants.

Slide 25: Potential Health Issues to Address

Now that we have a list of problems, it is time to choose which problem to tackle. Understanding the impact of social determinants of health can help inform the process of prioritizing health problems.

We can think of the health problems on our list as existing along a spectrum. On one end of the spectrum, we have social determinants. These are macro level problems that affect wide swaths of the population. Addressing these issues can have a tremendous impact on health; however the interventions that improve these issues are often complex, requiring multi-factorial approaches.

On the other end of the spectrum, we have medical conditions. These tend to be micro level problems, affecting a narrower segment of the population.

Slide 26: Social Determinants of Health

The determinants of health are well categorized by the physician Alvin Tarlov.

He describes four categories of determinants of health:

1) Genes and biology : Example: Your patient has Huntington's because of his genes.

2) Medical care: Example: Your patient has end stage renal disease because she was unable to get insulin.

3) Health related behavior: Example: Your patient has bladder cancer because he smoked.

4) Social characteristics

According to the World Health Organization, the social determinants of health are the conditions in which people are born, grow, live, work, and age.

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Slide 27: Social Determinants of Health (2)

Most of us have spent the majority of our training learning about genes and biology, health behaviors, and medical care. But if we only focus on those three determinants and ignore the social determinants, we will be missing factors that have a significant impact on the health of our patients.

Slide 28: Social Determinants of Health – Child Mortality

Let's say you want to improve child mortality. You could build more neonatal intensive care units, increase the uptake of vaccines, or reduce barriers to prenatal care. But if you really want to change child mortality, one of the most important factors to address is maternal education. This is a comparison of child mortality and education across several countries. As you can see, across multiple countries, child mortality decreases with increasing amounts of maternal education. Educated mothers demand better services, have increased confidence when dealing with health care providers, and are more likely to use preventive services.

Slide 29: Social Determinants of Health - Work

Another social determinant that influences health is work. The complexities of the relationship between work and health were well captured by the Whitehall study. Whitehall is a street in London where many of the British civil service work. The authors of this study performed a fascinating prospective cohort study in the 1960s looking at various risk factors for death. They followed 18,000 civil servants aged 40-69. The risk factors included hyperlipidemia, hypertension, glucose intolerance, diabetes, and smoking. They also stratified people according to their job within the hierarchy of the British civil service. Administrative is the top level then professional / executive then clerical then other which includes messengers and manual laborers. They were interested in causes of death.

This is what they found. The y axis is mortality rate, and you are looking at 0-9 years, 10-19 years, and greater than 20 years of follow up. These data are stratified based on employment grade. Remember that administrative (white bars) is the highest grade while other (manual labor / black bars) is the lowest grade. Over a ten year period, the authors found that workers in the lowest grade had a mortality rate 3 times higher than the mortality rate of the highest grade.

Slide 30: Social Determinants of Health – Work (2)

Here you can see that workers at the lowest grade were much more likely to die from lung cancer. The same was also true for heart disease, suicide, and homicide. There are obvious confounders given that the workers in the lowest grade were much more likely to smoke. But this gradient was also seen for non smoking related cancers and deaths. Furthermore, if you looked at people who had lung cancer and smoked, the mortality was six times higher for the lowest grade when compared to the highest grade.

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Slide 31: Social Determinants of Health – HRSA priorities

Many of you have probably taught about the importance of social determinants and read reports about them from the CDC and the WHO. As you can see, the Health Resources and Services Administration (HRSA) also values interventions that target social determinants of health.

Slide 32: Prioritization

To decide on which problem to tackle first, you complete a two step prioritization process that other COPC teams have used in the past.

First, we take the longer list that we have generated and narrow it down further. Luckily, WGC has a community advisory board which was already in place to obtain community input. You ask the community advisory board to take the list of twelve problems and decide on the six most pressing issues. Then, another group takes the list of six problems and ranks each problem along different dimensions. Having different stakeholders involved in the process ensures that a diversity of perspectives are included, though other prioritization methods may be more appropriate for your clinic and community.

WGC has decided to rank each problem along three different dimensions:

1) Magnitude
2) Severity
3) Feasibility of interventions

First, the participants decide on the magnitude of the problem. How common is the problem? Second, the participants rate the severity of the problem. What impact does the problem have on the population? Finally, participants assess the feasibility of a successful intervention given the resources available and the expertise of the COPC team.

Acne is a problem that is of great magnitude but minimal severity. Meningococcal meningitis is a problem that is of low magnitude but high severity. Poverty is a problem that is of great magnitude and severity but for which the feasibility of an intervention is low.

Slide 33: Prioritization (2)

Separately, each member of the second group comes up with a score from 1-5 for each problem along each dimension with 1 being the lowest rating and 5 being the highest. From this process, you can see that the second group has decided to tackle the issue of having few safe areas for children to exercise.

Slide 34: Take Home Messages

In conclusion, we hope that you remember that:

- Both quantitative and qualitative data are important when characterizing your community

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- Online mapping tools can help you visualize and communicate the magnitude and distribution of health problems effectively

- Social determinants have a significant impact on health

- Involving the community in generating, validating, and prioritizing health problems is critical

Slide 35: Survey Links

(No accompanying text)

Slide 36: To Obtain CME Credit

(No accompanying text)