

Welcome to learning about the Public Health Intervention Wheel, 2nd edition. I am Marjorie Schaffer and together with my colleague Sue Strohschein, we completed the evidence update for the Minnesota Department of Health in 2019.

Objectives

- Identify foundational assumptions for the Public Health Intervention Wheel
- Define the three levels of practice that describe the target for the intervention
- Analyze how Wheel interventions guide a public health nursing response to the COVID-19 pandemic



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This presentation reviews what has remained the same in the new edition of the Wheel, including foundational assumptions and practice levels. You will also learn about changes in the 2nd edition of the Wheel manual based on new evidence since the first publication in 2001. Then you will have the opportunity to apply interventions to thinking about how PHNs responded to the COVID-19 pandemic.

These are the objectives if you wish to have continuing education credits.

- 1. Identify the foundational assumptions for the Public Health Intervention Wheel.
- 2. Define the three levels of practice that determine the target for the intervention.
- 3. Analyze how the Wheel interventions guide a response to the COVID-19 pandemic.

A brief history of the Public Health Intervention Wheel

- Published by MDH, funded by HRSA/Division of Nursing grant
- Originally developed by Linda Olson Keller and Sue Strohschein
 - Population-based
 - Practice-based
 - Evidence-supported
- Disseminated regionally, nationally, worldwide



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Nearly 20 years ago, the first edition of the Public Health Intervention Wheel was published by the Minnesota Department of Health. The first edition culminated from the extensive work of Linda Olson Keller and Sue Strohschein, who were PHN consultants for the Minnesota Department of Health at the time. The initial project was funded by a Division of Nursing grant under the federal Department of Health and Human Services.

- A key premise of the Wheel is that it addresses interventions for populations.
- The Intervention Wheel is "practice-based" because it originated from an extensive analysis of the actual work of practicing public health nurses—over 200 PHNs from a variety of practice settings.
- The Intervention Wheel is "evidence-supported" because it was developed from a synthesis of the literature on public health interventions. The resulting Intervention Wheel was then critiqued by an expert panel of public health nursing leaders, resulting in some modifications to the Wheel.

The Public Health Intervention Wheel has been widely disseminated across the globe starting with satellite broadcasts that explained the Wheel to large groups of PHNs. Since then the Wheel has been featured in many conference presentations, numerous agency orientations for PHNs, and coursework for public health nursing students. In addition, the Wheel has been used as a framework in public health nursing research studies.

Personally, I have had the opportunity to present the Intervention Wheel in both Norway and New Zealand. PHNs in Norway and Ireland have embraced the Wheel as a framework for nursing practice.

Framework assumptions

- Focuses on entire populations
- Grounded in an assessment of community health
- Considers broad determinants of health
- Emphasizes health promotion and prevention
- Intervenes at multiple levels



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Five assumptions are the foundation for the interventions. These assumptions are:

- 1. a focus on entire populations,
- 2. the interventions are grounded in an assessment of community health,
- 3. there is a consideration of the broad determinants of health,
- 4. health promotion and prevention are emphasized, and
- 5. interventions occur at multiple practice levels, meaning they are systems-focused, community focused and/or individual/family-focused.

Evidence update (2019)

- Updated by: Marjorie Schaffer, PhD, PHN, RN Susan Strohschein, DNP, PHN, RN
- MDH staff:
 Julia Ashley, MA, PHN
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 Allie Hawley March, MPH



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This evidence update was completed by myself and Sue Strohschein with the assistance of Minnesota Department Health staff, who reviewed evidence and formatted the manual for publication on their website. I would like to call out Julia Ashley, Kristen Erickson, and Allie Hawley March who contributed countless hours to ensuring a quality project.

Why did the evidence need updating?

- Explosion of new evidence since 2001
- Increased emphasis on evidence-based practice
- Changes to public health nursing practice
 - Health care reform policy led to greater focus on social determinants of health, prevention, population health
 - Increase in emergency preparedness programs
 - Reduction in public health nursing workforce due to budget cuts



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Since the first edition was put out by MDH in 2001, we wanted to review and incorporate new evidence for each intervention into the manual. We found an explosion of new evidence as we looked into the literature. During the years since 2001, evidence-based practice is increasingly essential to justify what PHNs do, especially given changes in practice, such as health care reform, an emphasis on emergency preparedness, and changes in the PHN workforce.

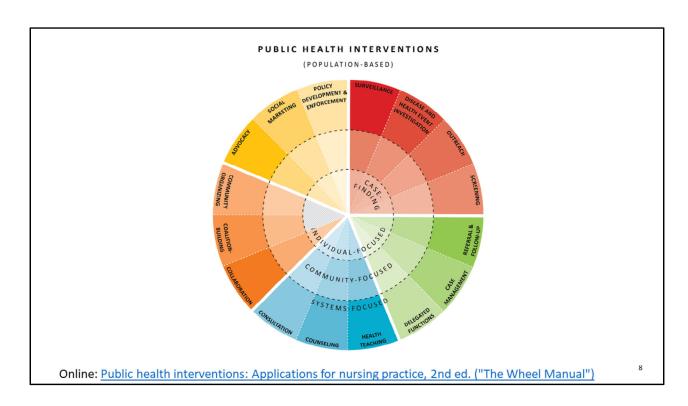
How has the Intervention Wheel changed?

- Updates:
 - Updated Wheel graphic for greater clarity
 - Updated selected interventions' definitions
 - Updated selected interventions' basic steps
- No change: Name and number of interventions, levels, wedges

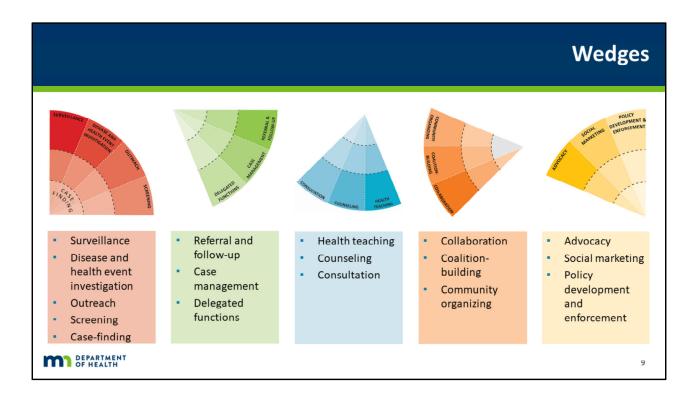


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- There are no changes in the number of interventions, the three levels of practice, or the five wedges.
- So, what is different?
- The Wheel graphic has been updated for greater clarity.
- In the manual some of the intervention definitions have been changed, based on new evidence.
- Basic steps for many interventions have been updated based on new evidence.
- And the manual is presented in a more streamlined format to give quick access to key points from evidence.
- Also, practice examples for each intervention stay on the same topic or problem for all three practice levels for easier comparison of the differences between practice levels.

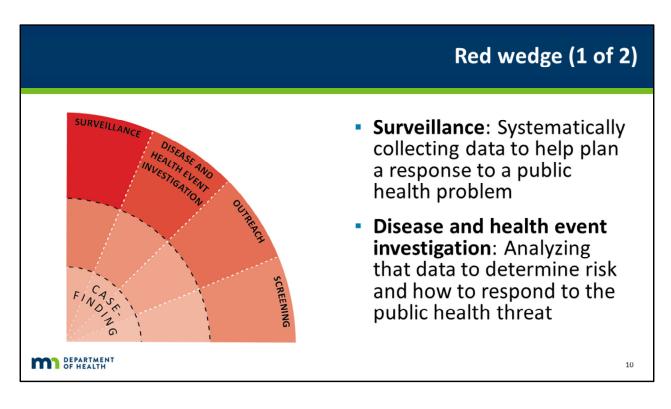


Here is the updated Wheel with enhanced colors and design. There are no changes in the interventions or levels of practice, which you can see in each of the circles. The interventions are organized by wedges or groupings of interventions that are often used together. You can see that case-finding is the individual-level intervention for the outer four interventions in the red wedge. Also note that in the orange wedge, there is no individual level for coalition building or community organizing. The 17th intervention, case-finding, is an individual/family application of the red wedge.



Here you see the colored wedge designations. Let's take a look at how they are organized.

You will find all the definitions and examples in the manual, which can be downloaded from the Minnesota Department of Health. I encourage you to use the Intervention Wheel handout or manual when applying the intervention definitions to a public health problem.



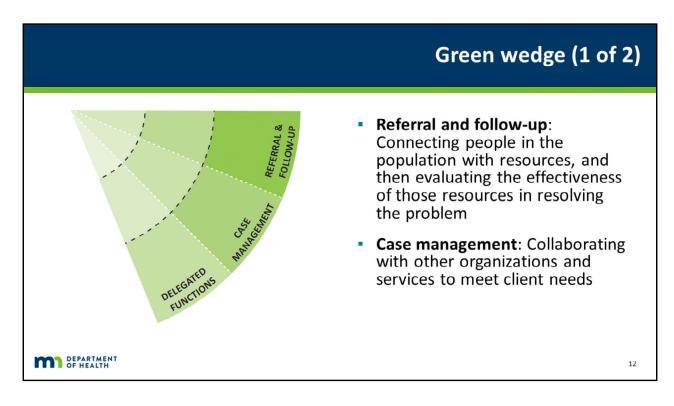
Let's take a look at the **red wedge**, which has the largest number of interventions. Casefinding is the individual/family-focused intervention for the other four interventions – surveillance, disease and health event investigation, outreach, and screening.

- Surveillance is the systematic collection of data to help plan a response to a public health problem.
- Disease and health event investigation analyzes that data to determine risk and how to respond to the public health threat.

Outreach: Finding populations at risk in order to communicate with them about the risk Screening: Identifying individuals who have risk factors or asymptomatic disease conditions Case-finding: Locating individuals and families who have risk factors and connecting them with resources

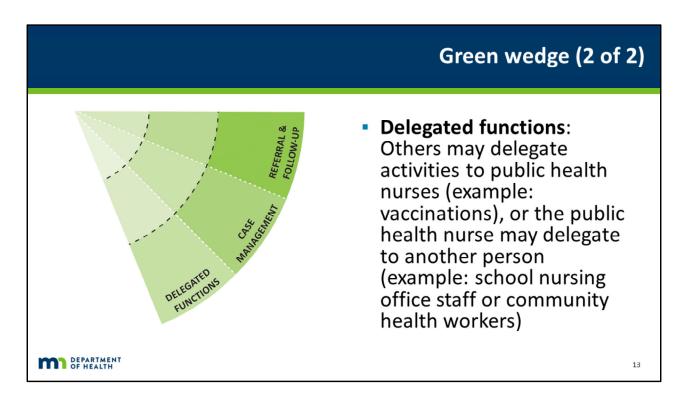
- Outreach finds the populations who are at risk in order to communicate with them about the risk.
- Screening identifies individuals who have risk factors or asymptomatic disease conditions.
- Case finding locates individuals and families who have risk factors and connects them with resources.

Notice how these interventions are all connected and likely to be used together.

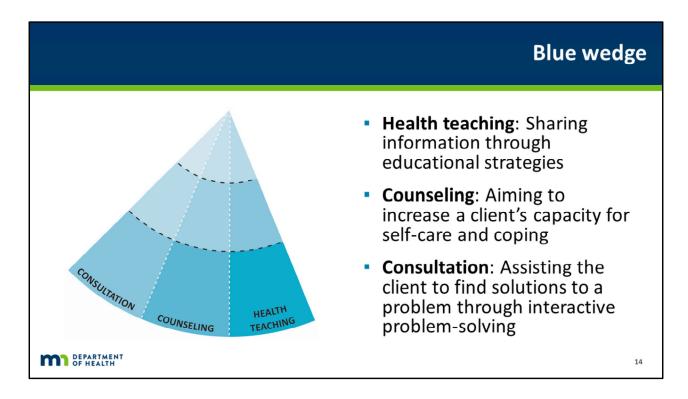


The **green wedge** includes referral and follow-up, case management, and delegated functions.

- PHNs frequently use referral and follow-up to connect people in the population with resources and then evaluate the effectiveness of those resources in resolving the problem.
- Case management involves collaboration with other resources and services to meet client needs.

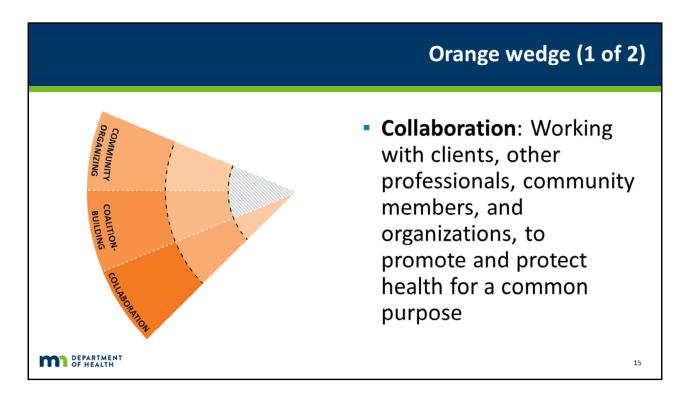


 For delegated functions, activities may be delegated to the PHN, such as giving vaccinations, or the PHN may delegate to another person, such as school nursing office staff or community health workers.



Health teaching, counseling, and consultation are the interventions on the **blue wedge**.

- Health teaching involves sharing information through educational strategies.
- Counseling aims to increase a client's capacity for self-care and coping.
- When PHNs provide consultation, they work with the client to find solutions to the problem through interactive problem-solving.

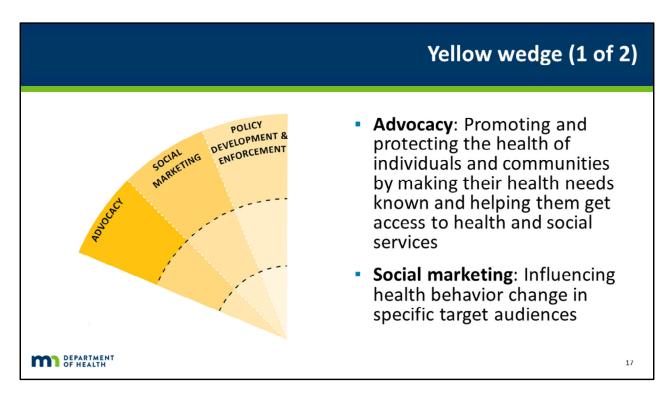


In the **orange wedge**, we find collaboration, coalition building, and community organizing. Remember, coalition building and community organizing do not occur at the individual level because they involve groups.

• PHNs are constantly collaborating with clients, other professionals, community members, and organizations to work together to promote and protect health for a common purpose.

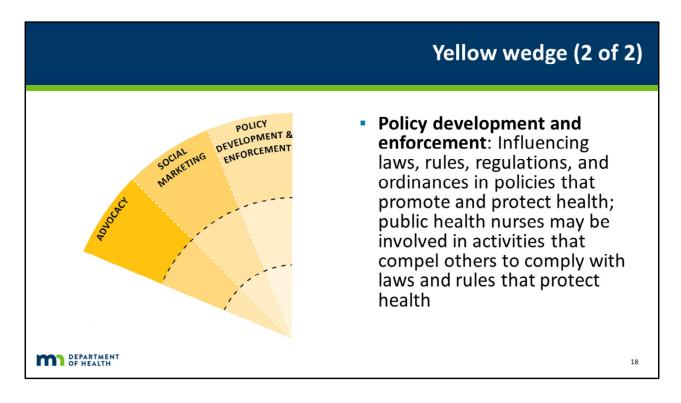
Coalition-building: Working with alliances among organizations or population groups to address a health problem Community organizing: Working with communities to respond to common problems identified by the community

- In coalition-building, PHNS work with alliances among organizations or population groups to address a health problem.
- Community organizing takes place at a grassroots level. PHNs work with communities to identify common problems identified by the community and respond to them.



Finally, we have the **yellow wedge** with the interventions of advocacy, social marketing, and policy development and enforcement.

- Advocacy involves promoting and protecting the health of individuals and communities by making their health needs known and helping them get access to health and social services.
- Social marketing is used to influence health behavior change in specific target audiences.



• PHNs participate in policy development to influence laws, rules, regulations, ordinances in policies that promote and protect health. They also may be involved in activities that compel others to comply with laws and rules that protect health.

There you have it -17 interventions. They are easier to remember if you think about how they work together in the 5 wedges.

Three levels of population-based practice

- Systems-focused: Changes organizations, policies, laws, and power structures
- Community-focused: Changes community norms, attitudes, awareness, practices, and behaviors
- Individual/family-focused: Changes knowledge, attitudes, beliefs, practices, and behaviors of individuals and families



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Then you also need to consider what practice level you are addressing. Often public health strategies will address several levels. With all levels, you are constantly thinking about how the intervention is affecting a specific population, which could be a geographic population or a population with a specific health problem.

- Systems-focus interventions are implemented to change organizations, policies, laws, and power structures.
- Community-focused interventions change community norms, attitudes, awareness, practices, or behaviors.
- Individual/family-focused interventions, change the knowledge, attitudes, beliefs, practices, and behaviors of individuals and families.

Evidence search

- CINAHL database from 2000 to 2018
- Combined the name of the intervention with other terms like public health, public health nursing, intervention, community, and nursing
- For some interventions, alternate terms yielded additional articles



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You may wonder how Sue and I found the wealth of new evidence that resulted in changes in definitions and basic steps of the intervention.

- To make the search manageable, we used one database CINAHL, the nursing and allied health database. We also searched relevant government websites that focus on public health.
- We used the term intervention along with other terms that would lead us to evidence related to public and community health.

Sources

Major journals

- Public Health Nursing
- Journal of Community Health Nursing
- Journal of School Nursing
- American Journal of Public Health
- Journal of Public Health Management and Practice

Websites

- Centers for Disease Control and Prevention (CDC)
- National Association of County and City Health Officials (NACCHO)
- World Health Organization (WHO)
- US Department of Health and Human Services
- State health departments

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This slide identifies the journals where we found most of our articles as well as the most helpful, credible websites.

Evidence levels 1 and 2

- Level 1: Experimental studies (randomized controlled trials or RCTs); systematic reviews of RCTs
- 2. Level 2: Studies with quasi-experimental designs; systematic reviews of mixed RCTs and quasiexperimental studies or only quasi-experimental studies; includes pretest-posttest evaluations

Dang & Dearholt, 2018



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In the manual, when the key points from evidence are listed for each intervention, we identify the evidence levels. Evidence ranges from the most rigorous research at Level 1 to literature review and expert opinion at Level 5. Most of the public health intervention evidence comes from the lower evidence levels since conducting experimental studies in public health can be a challenge.

- Level 1: Experimental studies
- Level 2: Studies with quasi-experimental designs; systematic reviews of mixed RCTS and quasi-experimental studies or only quasi-experimental studies

Evidence level 3

3. Level 3: Studies with non-experimental designs; includes qualitative studies and surveys; systematic reviews of non-experimental studies that may also include RCTs and quasi-experimental studies

Dang & Dearholt, 2018



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• Level 3: Studies with non-experimental designs; includes qualitative studies

Evidence levels 4 and 5

- **4. Level 4**: Clinical practice guidelines; consensus panels; position statement
- Level 5: Literature reviews; quality improvement evaluation; program evaluation; case reports; expert opinion

Dang & Dearholt, 2018



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- · Level 4: Clinical practice guidelines
- Level 5: Literature reviews; quality improvement evaluation; program evaluation; case reports; expert opinion

Format of each intervention

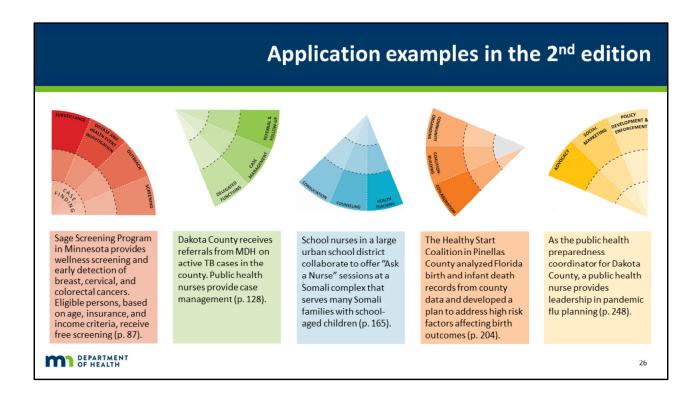
- Definition
- Examples at all practice levels (community, systems, individual)
- Relationships to other interventions
- Basic steps for the intervention with application example
- Evidence-based practice tips (summarizes relevant evidence with evidence levels)
- Wheel notes (concerns, thoughts, challenges relevant to the intervention)
- Reference list



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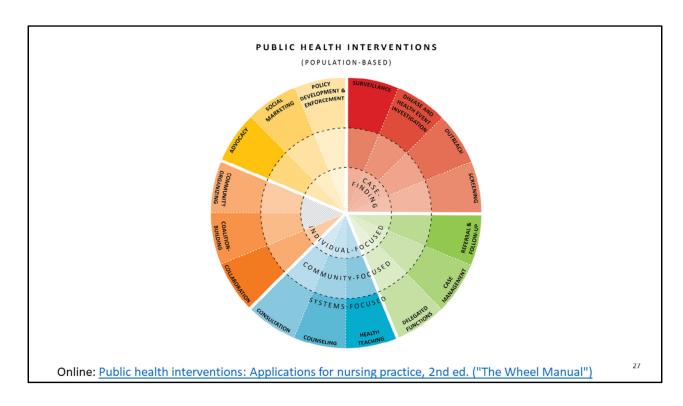
I want to briefly explain the format in the manual for each intervention. In each intervention section you will see:

- The definition of the intervention
- Examples at each practice level Unlike the first edition, the 2nd edition uses the same problem for examples that go with an intervention, making it easier to see the differences in practice levels.
- An explanation of how the intervention is related to other interventions
- The basic steps for the intervention, which are then applied to a practice example
- The key points from evidence in the literature about the intervention
- Wheel Notes, which identify concerns, thoughts, and challenges about the intervention
- A reference list for definitions, examples, basic steps, and key points from evidence

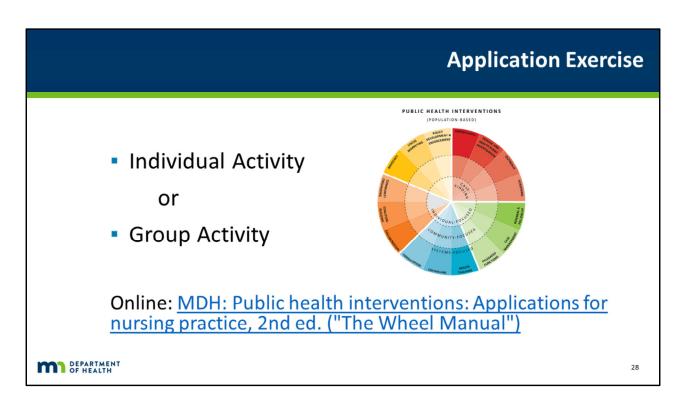


In the updated manual you will find an application example for each of the wedges along with questions to stimulate your thinking about how to use interventions in the wedge. Examples highlight current public health issues and how interventions are used by PHNs. Examples include cancer screening, tuberculosis, school nursing, high risk factors for poor birth outcomes, and pandemic flu planning.

I would like to point out that the example in the manual for the yellow wedge is for pandemic flu planning and not for the COVID-19 pandemic. It is likely some of the planning the county did for pandemic flu is also applicable to COVID-19. However the high infectivity rate of COVID-19 adds greater complexity to planning the response.



How will you use the Wheel? The Wheel works as a whole in addressing public health problems and events. You'll always start with the red wedge and work your clockwise around the Wheel. Why start with "Surveillance"? Because, in public health, everything starts with the capacity to recognize potential causes for harm and opportunities for improving public health. Depending on what your position is within your department you may spend your day working with the individual/family level on the red, green, and blue wedges. If you are your department's representative serving on a variety of committees, you're probably also using the orange wedge. Even if it's not you, somebody in your department will be working at any intervention and every level to adequately respond to the problem at hand.



Next, I will present an application activity to explain how the interventions can be used. This activity may be done individually or in a group. You will need to have access to the new Wheel manual and handout to answer the questions. You can click on the link in this slide to have the manual available to help you determine answers for the application activity.

Application to COVID-19 pandemic

- After reading the problem, answer the question(s) in the following slides for each of the 17 interventions and identify applicable levels of practice for each.
- 2. Choose one intervention in a wedge to expand on, by applying basic steps outlined in the Wheel manual.
- Use the Wheel handout to refer to intervention definitions and practice levels. Use the Wheel Manual to refer to examples and basic steps.



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Now we have an activity for you. This can be done individually or as a group activity with other PHNs or students. For a group activity, discussion time and summaries of the discussion presented by small groups will contribute to the CEUs allotted for this presentation.

In an upcoming slide, read the problem and then answer the question(s) in the following slides for each of the 17 interventions and identify applicable levels of practice for each.

Then choose one intervention in a wedge to expand on by applying basic steps outlined in the Wheel manual. Use the Wheel handout to refer to intervention definitions and practice levels. Use the Wheel Manual to refer to examples and basic steps. Both these documents can be downloaded from the Minnesota Department of Health.

Group activity alternative

For a group activity, you may choose to divide into five wedge groups for discussion and have each group provide a summary.

- Answer all the questions within a wedge and summarize.
- For the selected wedge(s), choose one intervention to identify the basic steps public health nurses can follow to implement the intervention. Refer to the intervention definition, examples, and basic steps in the Wheel Manual.



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This slide describes a group activity alternative.

For a group activity, divide into five wedge groups for discussion and have each group provide a summary.

- Answer all the questions within a wedge and summarize.
- For the selected wedge(s), choose one intervention to identify the basic steps PHNs can follow to implement the intervention. Refer to the intervention definition, examples, and basic steps in the Wheel manual.

Problem for wheel application

On March 11, 2020, the World Health Organization declared a worldwide pandemic of COVID-19, a disease caused by the novel SARS-CoV2 virus emerging from Wuhan, China. On March 13, the USA followed suit.

Statistics show that case numbers and deaths among Black, Indigenous, and other Americans of color are higher than for white Americans. Why is this? What can be done to intervene?

Online: <u>CDC</u>: <u>COVID-19 Hospitalization and Death by Race/Ethnicity</u>



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Here is a description of the problem and the need for intervention.

On March 11, 2020 the World Health Organization declared a world-wide pandemic of COVID-19, a disease caused the novel SARS-CoV2 virus emerging from Wuhan, China. On March 13 the USA followed suit. Statistics show that case numbers and deaths among people of color and ethnic minorities are higher than for White Americans. Why is this? What can be done to intervene?

Public health nursing response using the Intervention Wheel

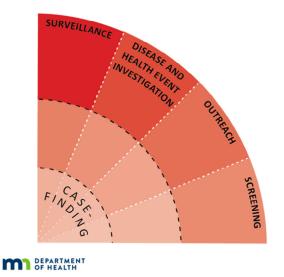
- Consider that you are a public health nurse employed by a large urban public health department. Choose a public health department and go to that department's website or, if you are employed, access your own county health department's website.
- Look at the CDC web page on <u>Health Equity</u> <u>Considerations and Racial and Ethnic Minority</u> Groups.



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- Consider that you are a PHN employed by a large urban public health department.
 Choose a public health department and go to that department's website or access your own county health department website.
- Look at the Centers for Disease Control and Health Prevention website on Health Equity Considerations and Racial and Ethnic Minority Groups.

Application to COVID-19 pandemic: Surveillance (red wedge)



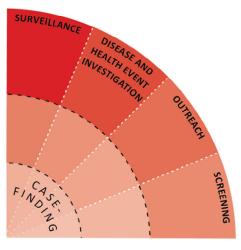
Surveillance: What is the current incidence and prevalence of COVID-19 cases in your county, city, or reservation for each racial and ethnic group?

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For each of the following [17] slides, you will see a question for each intervention in the wedge. You may pause at each slide to respond to each question.

Red wedge interventions are extremely relevant to the COVID-19 pandemic.

Application to COVID-19 pandemic: Disease and health event investigation (red wedge)

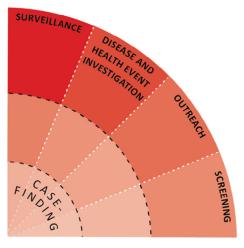


Disease and health event investigation: What potential underlying factors contribute to differences in COVID-19 risk among races/ethnicities in your county, city, or reservation?



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Application to COVID-19 pandemic: Outreach (red wedge)

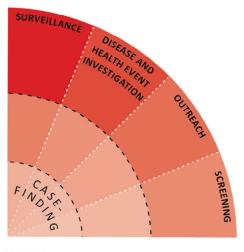


Outreach: Identify three outreach strategies to reach those races/ethnicities in your community that are disproportionately affected by COVID-19. What do you need to be concerned about in developing messages of risk? Where do you go for help?



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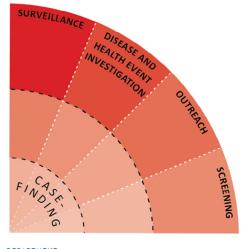
Application to COVID-19 pandemic: Screening (red wedge)



Screening: Which of the three screening strategies would you use: mass, targeted, or periodic? List a specific example for each.

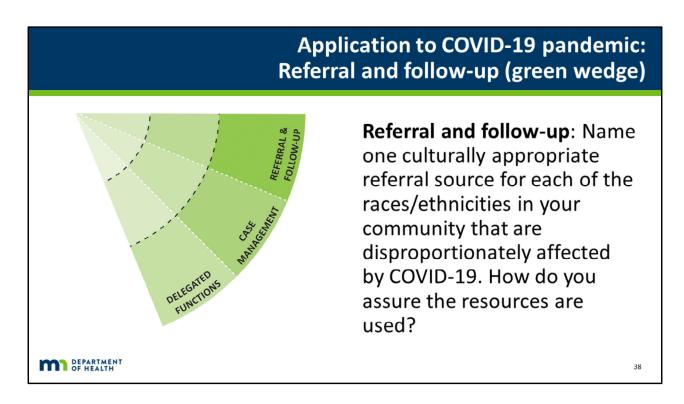
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Application to COVID-19 pandemic: Case-finding (red wedge)



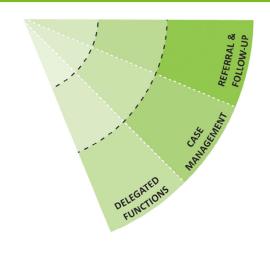
Case-finding: What happens to those individuals whose tests are positive for COVID-19? What happens to the data?

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Here you see questions related to green wedge interventions. You likely have seen referral and follow-up frequently used by PHNs or students in response to the pandemic.

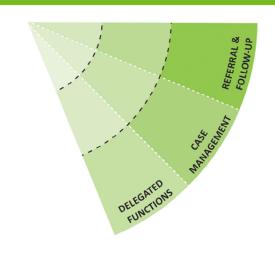
Application to COVID-19 pandemic: Case management (green wedge)



Case management: In the county, who is in a position to provide case management to members of each of these targeted groups with positive COVID-19 results? What if there are no groups or organizations designated?

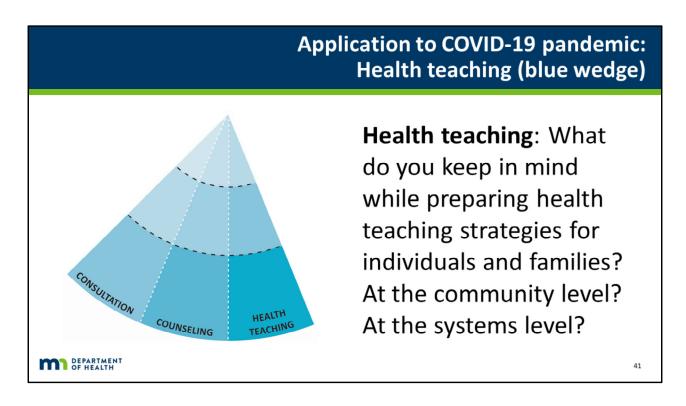


Application to COVID-19 pandemic: Delegated functions (green wedge)



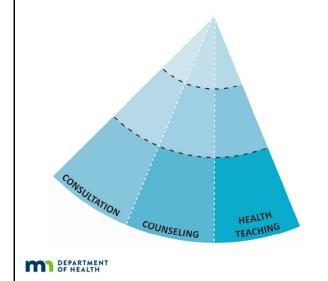
Delegated functions: In your department, you are given the responsibility to establish a curbside COVID-19 program and provide nasal swab tests. Is this within your legal authority to do?





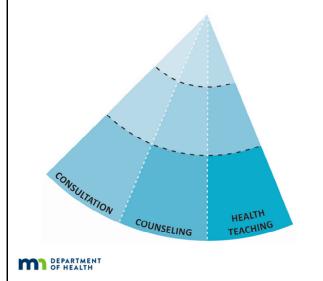
PHN knowledge and expertise on the transmission of infectious disease is foundational to the blue wedge interventions of health teaching, counseling, and consultation.

Application to COVID-19 pandemic: Counseling (blue wedge)

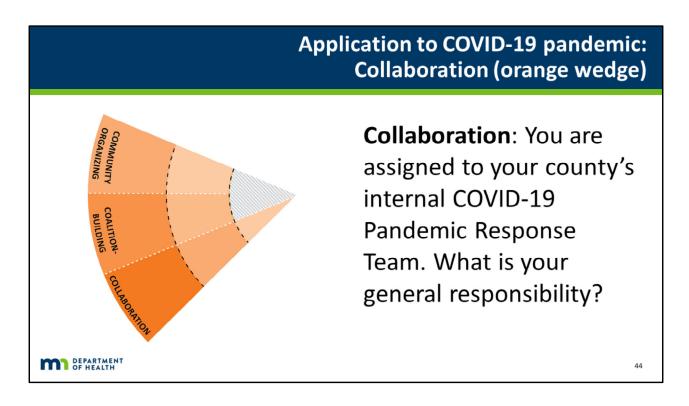


Counseling: You are working with a Spanish-speaking single mother from El Salvador. She has two elementary children in second and fourth grades with different school schedules. She works nights as an essential worker in a poultry factory. Provide an example of counseling with the mother in exploring her options for childcare.

Application to COVID-19 pandemic: Consultation (blue wedge)

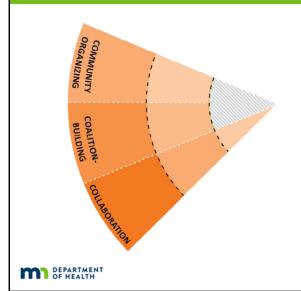


Consultation: What other community agencies could you engage in conversation when trying to develop a resource for the woman you encountered in the counseling intervention?



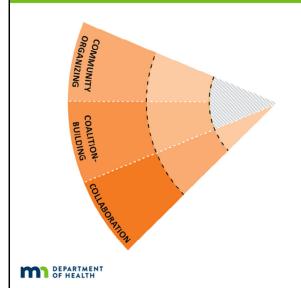
The orange wedge questions focus on how the PHN works with others to respond to the pandemic.

Application to COVID-19 pandemic: Coalition-building (orange wedge)

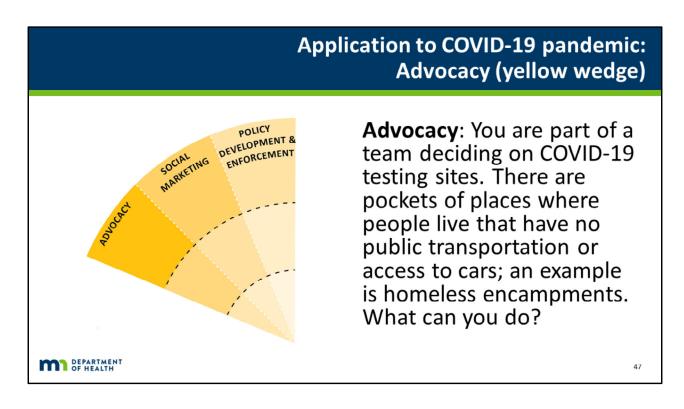


Coalition-building: You're assigned to serve on a neighborhood block organization as a representative of your department, to develop a response to COVID-19. What are your responsibilities?

Application to COVID-19 pandemic: Community organizing (orange wedge)



Community organizing: You're a team leader of PHNs providing health care assessments for infants and toddlers in a community clinic serving low-income families. You and the other PHNs learn of misinformation about COVID-19 from those parents attending, about transmission and how to protect against it. No one is sure of the source of the misinformation. What are your options?



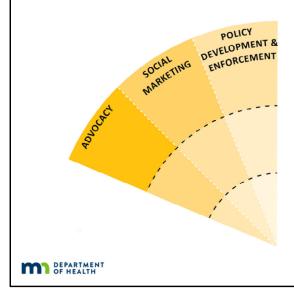
The use of yellow wedge interventions has the potential to reduce negative outcomes resulting from the pandemic. Working with others in the community will increase the effectiveness of these interventions.

Application to COVID-19 pandemic: Social marketing (yellow wedge)



Social marketing: You've been assigned as a department representative to the county's public information office. A local news outlet has reported that COVID-19 is "just like the flu" and will go away like the flu after this season. What can be done to counter this misinformation? What is your role?

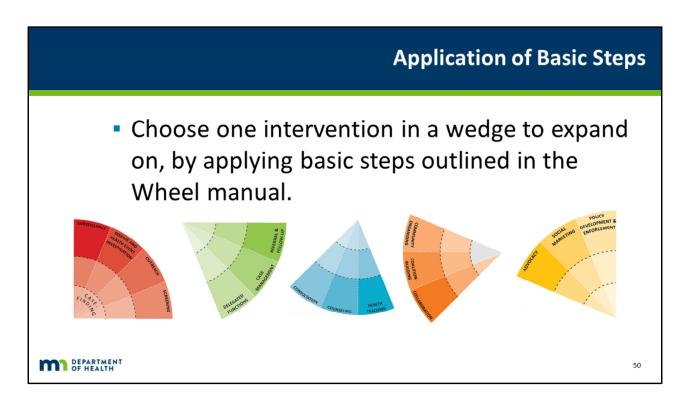
Application to COVID-19 pandemic: Policy development and enforcement (yellow wedge)



Policy development and enforcement: The governor issued a policy that everyone in public spaces must wear a mask unless under the age of two or otherwise cannot tolerate a mask for medical reasons. Your department's policy is the same but it is unclear what is meant by "anyone who has trouble breathing." You encounter a mother at her child's well child assessment who says she cannot wear a mask due to asthma. What do you do?

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Pause to respond to the question.



Now, it is time to explore intervention Basic Steps in greater depth. For one of these five wedges (red, green, blue, orange, or yellow) select one intervention, review the basic steps in the manual, and determine how you would use the Basic Steps in that intervention to address the COVID-19 pandemic.

References

- Dang, D. & Dearholt, S. L. (2018). Johns Hopkins nursing evidence-based practice: Model and guidelines, 3rd ed. Indianapolis, IN: Sigma Theta Tau International.
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 www.health.state.mn.us/communities/practice/research/phncouncil/wheel.html
- Minnesota Department of Health. (2019). Public health interventions, definitions, and practice levels [Handout]. Online: www.health.state.mn.us/communities/practice/research/phncouncil/wheel.html



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The primary reference for this presentation is the manual for the 2nd edition of the Public Health Intervention Wheel, which can be downloaded from the Minnesota Department of Health. You can also order a printed spiral-bound copy from MDH.

Contact information



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As we come to the end of this presentation, Sue and I are excited about how the Wheel can guide your thinking about the interventions you use and give you a common language to explain what is it that PHNs do in their work. Make your practice evidence-based!