

Appendix B: Focus group report

Report on Patient Focus Groups on Healthy Eating and Fish 12.4.15

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Executive Summary

Seven focus groups of women of child-bearing age were conducted for 4 different microsegments in 2 geographic regions to collect information from women of child-bearing age on preferences for delivery of messages about the risks and benefits of fish consumption through the health care system and who delivers the messages. The 2 geographic regions included the Twin Cities Metro (East and West) and Duluth, Minnesota.

Three focus groups included “young singles and starter families” (including 1 group in Duluth); 1 focus group was a “mixed” microsegment (in Duluth); 1 focus group included “flourishing families;” and 2 focus groups included “prosperous, established couples.” Participation in all 7 focus groups was less than enrollment projections, with 5 focus groups having 4 or fewer women participating. Actual attendance was about 65% of committed enrollment. While we did not have sufficient focus group participation to reach a saturation level, we had robust conversations that met our needs and provided sufficient information to move forward in the project.

A set of IRB-approved questions was asked in each focus group. For the last question, a handout of formatted information from the Minnesota Department of Health (MDH) website was distributed to the participants to solicit feedback and how to strengthen key messages about eating clean fish.

The focus group revealed several areas to address in strengthening key messages to close the knowledge gap that currently exists. Participant feedback validated that a gap exists between knowing fish is healthful to eat and knowing which and how much fish is safe to eat. Most of the participants said they know fish should be part of a healthy diet and accurately described various benefits (omega-3s, vitamin D, low fat, low calorie, high protein), but most also said they do not eat fish as often as other protein sources.

Commonly cited barriers to eating more servings of fish included:

- Cost (9)
- Perception that preparation is difficult (5) and time-consuming (4)
- Lack of knowledge about how to prepare fish (4)
- The smell (4) and taste of fish often is not appealing (4)
- Husband or family doesn't like fish (3)
- Lack of knowledge about what different types of fish taste like (2)

The need for meals that work for all in the family was voiced throughout the discussion.

Participant feedback also revealed that women predominantly want to hear the messages (information) about fish in the grocery store, on fish packaging, followed by in the restaurant, at home or via Pinterest. Additionally, the type of messaging the participants sought included information on the benefits and risks—risks not just for mercury exposure but also, for example, exposure to other contaminants, source (farm raised vs wild caught), sustainability, catch location and how bony a particular species is.

In terms of preferences for formatting messaging, participants overwhelmingly requested recipes to provide ideas in busy schedules and increase confidence and familiarity with preparation. Some feedback specified inclusion of additional details with the recipes, such as photos, time to

prepare, flavor description, ease in preparation, health and nutrition benefits, and risks. Other vehicles noted for formatting included QR codes on print material and Pinterest followed by PSAs, websites and apps.

In terms of receiving the information in the health care setting, strong interest was expressed in receiving the information in the clinic waiting area; seeing a poster in the clinic was specifically cited as a preferred format. Participants also expressed interest in accessing the information through MyChart or MyHealth. Health incentive programs also were noted with enthusiasm.

In terms of who could best provide information within the health care setting, some participants noted the information coming from their primary care clinician would be preferred or carry more weight, but some participants also noted the information could come from others in the clinic setting (e.g., dietitian, front desk, pediatrician, RN), or from the health plan via the website or mail, or at employer's website.

While participants overall found the MDH handout clear and said they would likely use it, they noted various areas to make it more useful, including adding the "whys" behind much of the existing information as well as guidelines for other members of the family. Specifically, they asked for details on what happens if you eat a fish on the do-not eat list and the benefits of eating fish species listed in the other boxes.

In general, participants were apt to reflect holistically about the topic of safe fish and fish consumption. For example, in addition to mentioning mercury in response to questions asked (general and specific to the consumption guidelines table), they expressed concern about other factors in decision-making surrounding fish consumption. These are detailed further in the report below.

Introduction

The focus groups were conducted to collect information from women of child-bearing age on preferences for delivery of messages about the risks and benefits of fish consumption through the health care system and who delivers the messages. Focus groups were designed building on previous research on this topic, including by the grantee, MDH, to identify what will help women of child-bearing age close the gap that exists between knowing fish is healthful to eat and knowing which fish are healthful and how much fish to eat. Focus groups also explored *how* women want to hear these messages and from *what* sources.

The focus groups were conducted in multiple microsegments. Two focus groups were proximal to Duluth, Minnesota, to ensure that any variation due to that unique geography would be captured.

Methodology

The population of interest for this research is women of child-bearing age. HealthPartners Institute identified 900 eligible English-speaking female HealthPartners members ages 18–40 whose membership was current in the first quarter of 2015 with no more than a 1-month break in eligibility. The population is further refined to women living in or near the 2 largest metropolitan areas in Minnesota, the Twin Cities and Duluth metro areas. Six hundred women were selected

from the Twin Cities 7-county metro area and 300 from the St. Louis, Lake or Carlton county area of northern Minnesota.

A novel element of this research is the inclusion of “microsegment” information about health plan members. Microsegment data consists of public data about individuals that is collected (in this case by Experian) and used by companies representing a variety of industries to better understand their audience. At HealthPartners, microsegment data is added to patient or member data when possible to form a “best available” data snapshot of our patients and members. It is used to improve engagement, to better understand patients and members, and to help enroll new patients and members.

The microsegment data provides HealthPartners insight into how different groups of people pursue well-being, what motivates them, what barriers exist and what messages and communications modes are most useful to reach them.

Our strategy in using the microsegments was to create intentional heterogeneity across focus groups and intentional homogeneity within focus groups. This was both to encourage conversation within groups and help us to identify potentially different communications messages or modes across groups.

Focus group participants were selected from among the 3 most frequently occurring microsegments for each region. (Microsegment clusters are grouped by letters.)

In the Twin Cities, those microsegments were:

- *O*: Singles and starters, young singles starting out and some starter families in diverse urban communities
- *B*: Flourishing families—Affluent middle aged families and couples earning prosperous incomes and living very comfortable, active lifestyles
- *C*: Booming with confidence—Prosperous, established couples in their peak earning years living in suburban homes

In the Duluth area, those microsegments were:

- *O*: Singles and starters, young singles starting out and some starter families in diverse urban communities
- *E*: Thriving boomers—Upper middle-class baby boomer-aged couples living comfortable lifestyles settled in town and exurban homes
- *I*: Family union—Mid-scale middle-aged families living in homes supported by solid blue-collar occupations

Six of 7 focus groups comprised women from a single microsegment, while 1 Duluth focus group was mixed.

Focus groups were scheduled at community locations that were central to the population, not affiliated with specific religious or other ideological beliefs, could accommodate meals for participants and offered free and convenient parking.

The HealthPartners Institute Survey Research Center (SRC) contacted eligible women first by mail with a letter stating that we were seeking focus group participants, explaining the study, giving them the option to opt-out of the research and alerting them that the SRC would attempt to call them to ascertain eligibility and interest in focus group participation. Follow-up phone calls were conducted (with up to 8 contact attempts) to complete focus group recruitment. Individuals successfully contacted by telephone were asked if they would be interested in seeing if they were eligible for participation; 159 women were interested. These women were asked up to 4 screening questions with the following purposes:

- To gauge ability/willingness to articulate (2 individuals screened out)
- To determine if fish is avoided for religious or medical reasons (0 individuals screened out)
- To determine if individual is a vegetarian or vegan who avoids fish (3 individuals screened out)
- To ascertain likelihood of having children in the future (35 individuals screened out as not at all likely to have children in the future).

After these 4 questions, individuals were asked if they would be willing to join a small group of women for a discussion on the topic. An additional 4 women that were otherwise eligible said they were not interested. We had anticipated up to 10 participants across 9 focus groups; 60 individuals met all the screening criteria and were interested, but were not available at the time of the focus groups. A total of 37 individuals were successfully recruited and ultimately 24 participated in 1 of 7 focus groups.

The focus group script was developed iteratively by the project team and piloted with a group of women similar to the target population to ensure that the script was understood and appropriate for the length of the focus group. Based on the pilot focus group, the script was further refined and approved by the HealthPartners IRB (see Appendix A).

An opening question about a common meal that included fish was included to ease into the topic. This was followed by 5 additional open-ended questions with probes about decision making for including fish in one's diet, barriers to eating fish, where decisions about fish consumption are made, perceived risks and benefits to fish consumption, and where women would like to get information on fish consumption, focusing on the health care setting. These questions were followed by a deeper discussion of reaction to a guide to safe fish consumption developed from MDH's existing content (see Appendix B).

Focus group participants signed consent forms and received a meal and a \$50 gift card to Target. Focus groups lasted about 70 minutes. At the end of each focus group, a representative from MDH corrected any potentially misleading statements that may have been made by participants during the course of the discussion. During this time, women also volunteered additional questions that they may have had on the topic that were addressed by the MDH partner.

Results

Overview

A total of 5 microsegment groupings were identified for recruitment of the focus group sample:

- Young singles and starter families
- Flourishing families
- Prosperous, established couples
- Thriving boomers
- Middle-aged, blue-collar families

In addition to the note taker, facilitator and MDH staff scientist, either the principal investigator or the project manager or both sat in during some of the focus groups to observe the discussion. Appendix C lists questions asked by participants during the focus groups. Answers from the MDH scientist observing are not included.

Total participation among enrollees

Microsegments for middle-aged, blue-collar, families and for thriving boomers were included in the recruitment process for the Duluth location. However, an insufficient number of participants enrolled in these microsegment sessions, so a mixed microsegment group was formed for 1 of the 2 focus groups in Duluth.

Consequently, 7 focus groups were conducted for 4 microsegments—3 of which aligned with the original 5 microsegments identified—in 3 geographic regions: East Twin Cities Metro, West Twin Cities Metro and Duluth.

A total of 37 women were scheduled to participate in the focus group through mail and telephone recruitment. Of those, 24 (65%) attended a focus group. Representation varied across microsegments as follows:

East Twin Cities Metro	West Twin Cities Metro	Duluth
<ul style="list-style-type: none"> • Flourishing families: 2 out of 4 • Prosperous, established couples: 3 out of 4 • Young singles and starter families: 4 out of 8 	<ul style="list-style-type: none"> • Prosperous, established couples: 2 out of 3 • Young singles and starter families: 5 out of 7 	<ul style="list-style-type: none"> • Mixed microsegment: 5 out of 6 • Young singles and starter families: 3 out of 5

Tables 1, 2 and 3 below show total results for each of the following summary paragraphs.

Fish preferences

Question: Describe a meal including fish that you typically eat with family or friends. If you do not eat fish, describe any typical meal. (Warm-up question)

- Salmon was indicated as a choice across all microsegments.
 - » Salmon, tilapia and sushi were the only types of fish preferred among flourishing families.
 - » Crappies, walleye and shrimp were among additional preferences indicated by the other microsegments.

- The greatest variety in preferences for type of fish was described by the young singles and starter families.

A wider variety of fish that were local to their region and Wisconsin (e.g., sunfish, Pollack, pike, bluegill and bass), because they or their husband or family members were anglers, was indicated by young singles and starter families in Duluth.

Frequency of eating fish

Question: For those of you who eat fish, how often do you eat fish?

- 1 time a month was most commonly (7) cited.
- 1 time a week was noted next most common (4).
- Either 2 to 3 times a week or 2 times a week was indicated by participants in the young singles and starter families (West Metro).
- Seasonal variation, with eating more fish in summer, was noted by participants in the mixed microsegment (2) and young singles and starter families in East Metro (1).

Factors in choice

Question: How do you choose what fish you eat?

- Taste or flavor and sustainability were factors in choice of fish for all microsegments except the Duluth young singles and starter families.
- Husband's or family member's catch of the day was a factor in choice of fish in the mixed microsegment (in Duluth).
- Ease in preparation as a factor in choice of fish was mentioned by all groups except flourishing families.
- Cost as a factor in choice of fish was only mentioned in flourishing families.

Quotes from participants regarding factors in choice:

I grew up eating the fried walleye, sunfish, crappie, but as I got older we switched to organic foods and healthier foods so we switched to eating tilapia. I would be open to still eating those others but I think it tastes fishy unless you fry it.

I buy what's accessible in stores: salmon, cod, tilapia. You don't need to clean it, no bones, and easy to cook. It's in the market on the shelf. I don't have to go to a special market.

I just eat whatever he brings home, whatever is available in Minnesota. He will go walleye fishing or salmon or trout fishing on the river. It depends on where he chooses to go.

Barriers to eating

Question: What, if anything, keeps you from eating fish more often?

- Hard to prepare, time-consuming to prepare (except Duluth young singles and starter families) and cost were barriers to eating fish more often indicated by all microsegments.
- A lack of knowledge of how to prepare fish as a barrier to eating fish more often was noted by young singles and starter families (except in Duluth) and prosperous, established couples.
- Concerns about mercury were a barrier to eating fish more often for flourishing families.
- Husbands not liking fish was a barrier to eating fish more often for young singles and starter families and the mixed microsegment (in Duluth).

Quotes from participants regarding barriers to eating:

The cost of what I want, and my husband and I don't like it reheated. Usually we make it because it is a fast meal but then we don't have leftovers the next day. Also I am looking at the cost of how many meals we are getting out of it.

It seems labor-intensive, too. With fish fry, you skin it, batter it, have to fry it. And also cooking it in your own home and the smell of it lingering.

And you spend all that time and it doesn't work out.

To me, it's all so intimidating. If you overcook it, you can't do anything with it. You can overcook ground beef and throw it in spaghetti. You can't do that with fish. Fish can be cooked unevenly.

Influences for eating more

Question: What might influence you to eat more fish? (Probe)

Specific responses were varied and limited to 1 to 2 participants and to within 1 to 2 microsegments per response. For example, "having recipes would influence them to eat more" was noted by 2 participants, 1 from young singles and starter families in Duluth and 1 from prosperous, established couples.

Quotes from participants regarding influences for eating more:

Recipes, I like it when there's a recipe on the package, that's a good idea. I want to make it at home.

It's not great for leftovers. If you could make it last longer that might help. But knowing you can only make it and eat that night is not as appealing.

Perceived benefits

Question: As a woman, how do you think about the risks and benefits of eating fish?

- "Health benefits" as a benefit was indicated by all microsegments except flourishing families.
 - » Specific health benefits, such as vitamin D, high protein and low fat, however, were mentioned more in flourishing families.
- Omega 3s were noted by young singles and starter families.
- Variety in kid's diet as a benefit was mentioned by all microsegments except young singles and starter families in Duluth.

Quotes from participants regarding perceived benefits:

I know it's really good for you, and I am a nurse, always telling patients to eat a heart-healthy diet, so I kind of try to practice what I preach. If I am telling more people to eat walleye, I should probably do it myself. I want to eat well for my well-being but also because I tell patients what to do.

One that comes to my mind is that it has omega 3s. I am not a vitamin taker, so I get it through what I eat.

Perceived risks

Question: As a woman, how do you think about the risks and benefits of eating fish?

- Mercury was a concern in all microsegments.
- Mercury was not a concern or “never think about it” was noted in young single and starter families.
- “Don’t think about the risks unless pregnant” also was noted in young single and starter families.

Quotes from participants regarding perceived risks:

That mercury thing I hear about, that’s really just not a factor. I don’t care about that. I just assume the fish I eat is safe.

I didn’t think about it until becoming pregnant. That’s when I found out about the mercury levels.

It scares me hearing about mercury and all the other things the animals are eating and being polluted with. And I don’t know who to trust and who not to. For every one who says this fish is good, someone will say this fish is bad. And then, omega 3s vs omega 6s . . . I just think whew, I’ll just take a pill.

I don’t eat a lot of fish out of the St. Louis River area. There’s something of the color of their belly meant they had more mercury or fishy stuff with them, but I will catch it in a lake outside of there or in the store. I think about where the fish comes from, and I’m not the best at cleaning them. And the bones. I worry about the kids choking.

Decision-making venue

Question: Where are you when making a choice about what fish to eat or buy?

- In the grocery store was indicated in all microsegments.
- At home was indicated in all microsegments except for young singles and starter families in Duluth.
- Pinterest as a source for choosing the type of fish to eat was noted by young singles and starter families in the metro.

Quote from participant regarding decision-making venue:

[I am] standing in the grocery store, looking at the prices and what looks better.

I go to Pinterest. I get a lot of ideas from there before I go shopping

I call myself a Pinhead because I am always on Pinterest. I get recipes. I like trying new stuff but I am not that brave when it comes to fish.

Information wanted

Question: What kind of information might help you make those choices? (note kind and format and what to do with the information)

- None of the responses were represented by all microsegments.
- Knowing the source—where the fish comes from—would be helpful in prosperous, established couples and young singles and starter families (Duluth only).
- Knowing more about the benefits (e.g., vitamin D, protein, what’s healthier in general) was wanted by flourishing families and young singles and starter families (except in Duluth).
- Knowing more about the risks was wanted by young singles and starter families (except in Duluth).
- Information on level of mercury for each fish type in surrounding lakes would be helpful in young single and starter families in Duluth.
- Information/language should emphasize the positive over the negative, what’s safe over what’s not, also per the young single and starter families in Duluth.

Quotes from participants regarding information wanted:

Be careful with the language in whatever form. Safe fish consumption means there is an unsafe fish consumption . . . You don’t need to omit anything, but if you could magnify the positives on the front end, it probably would have made a difference.

The different kinds of fish out there, the risks and benefits and how to prepare them.

I would like to know what part of the world the fish comes from. So same format that the ground beef and chicken have—grass fed with no antibiotics.

I think the MDH has on their website, you can pick which lake and they will tell you what kind of fish is in there and how much mercury they have. I like online instead of paper because I lose paper.

Format for information wanted

Question: How would you like this information available to you

- A preference for having information placed directly on the fish packaging was expressed in all microsegments except for flourishing families.
- Recipes and QR codes were wanted in prosperous, established couples, and young singles and starter families (except in Duluth).
 - » However, *not* wanting a QR code also was expressed by participants in both microsegments.
- Visual aids, such as pictures, charts and Pinterest were noted in prosperous, established couples and young singles and starter families (except in Duluth).
- An app, website and PSA (except in Duluth) was mentioned by prosperous, established couples and young singles and starter families.
 - » However, *not* wanting an app also was indicated by participants in prosperous, established couples.

Quotes from participants regarding format for information wanted:

Smart app, website, brochure—any of those would be good.

Unless there is an incentive, it would be difficult to go on an app. Check out this website and receive a coupon for \$5 off fish.

I would want to have that information when I am shopping. It would be cool to have a little picture or QR code that you could scan, something that I could think about when I am shopping.

Access to information in health care setting

Question: From what point in the care process would you be interested in learning about resources for safe fish consumption (clinic visit, plan info, email through MyChart, employer website, prenatal class, letter following cessation of birth control, after-visit summary, direct mail, PSA)?

- A preference for getting the information in the waiting room was indicated in prosperous, established couples and young singles and starter families (except in Duluth).
- Getting information from a doctor visit or at an annual exam was a preference in all microsegments, except for young singles and starter families in Duluth.
- A poster in the waiting room was wanted in prosperous, established couples, young singles and starter families (except in Duluth) and the mixed microsegment (in Duluth).
- Getting information in the mail, along with a coupon (this could be from health plan or direct mail) was indicated as a preference in prosperous, established couples and young singles and starter families (except in Duluth).
- Getting the information through healthy living incentive program was suggested by young singles and starter families (except in Duluth).

Quotes from participants regarding where want to access information in the health care setting:

In the exam room and waiting room, I will have a tendency to not pick them [brochures] up because I think about all the sick people touching them. I like the poster, the free-standing ones that get your attention.

I like the idea of links in MyHealth, because we can always go back there another time, and brochures in the waiting room are nice because we have time to read them. You have a captive audience.

I also did Take Charge through MyHealth. They had an eating one. It was the most boring thing ever. It had the portioning, and all that is great. But if they had something on fish, it would be interesting.

Who provides information in health care setting

Question: Is there a person other than your primary care clinician who could provide that information to you?

- “Doesn’t matter who” was the most commonly cited answer (4, included flourishing families and young singles and starter families except for in Duluth) followed by dietitian (3) and doctor (2).
- Dietitian/nutritionist was noted by young singles and starter families, including in Duluth.

Quotes from participants regarding who want to provide information in the health care setting:

For me it doesn’t matter which provider. But I’m trying to think if I would want it in the beginning, like in the waiting room, or at the end. It doesn’t matter if from front desk or doctor. I may prefer I would have it in the beginning from the front desk in case I have questions.

I think it would be valuable to have it in MyChart because the providers don’t have a lot of time—doctors and nurses. So it would be beneficial, and you can send MyChart questions to a nutritionist.

I don’t have a primary care doctor. I have faith in the co-op [grocery store] to give me that information so I don’t know if I would search for that through the doctor.

Clarity of information of MDH consumption guidelines table

Question: How clear is the information?

- “Like the color scheme” of the table was noted in all microsegments except mixed and young singles and starter families in Duluth.
- Content is “pretty clear” was indicated in the mixed microsegment (in Duluth), young singles and starter families (except in Duluth) and prosperous, established couples.
- “Not clear,” confusion about where website links located in the table, and “OK should be in caps” were among the comments regarding what was not clear, the majority of which came from the prosperous, established couples.
- “It was a lot to read” was noted by only 1 participant in the mixed microsegment (in Duluth).

Quotes from participants regarding clarity of information in the MDH table:

I like the color scheme. It flows well. It’s not too much information.

It’s pretty clear, I like that it’s colorful. I would want more information on the do-not-eat list, why you shouldn’t eat them. Then I would want information on why it’s OK to eat only 1 serving in that middle section and what would be the repercussions.

How make more useful

Question: What might make it more useful to you?

- Including the “why”—for example, why the length of fish matters, why you can’t eat salmon from the Great Lakes, why you should eat less white albacore tuna vs light tuna, why fish have mercury levels, why pregnant women and children have to be more careful than other people, why mercury is bad to eat—was expressed in all microsegments except for young singles and starter families in Duluth.
- Guidelines for non-sensitive populations was wanted in all microsegments except for the mixed microsegment (in Duluth).
- More information about mercury was wanted by prosperous, established couples and young singles and starter families (except in Duluth).
- Clarification about the difference between *white* and *light* tuna was wanted by prosperous, established couples and young singles and starter families.
- Clarification about what a serving size is, was requested in prosperous, established couples, young singles and starter families (except in Duluth) and the mixed microsegment (in Duluth).
- Delineating details—for example, explaining the difference between “OK vs Good,” what happens if you eat fish on the not-eat list, and the benefits of eating the fish on the top list—were among various other recommendations for improving the information voiced by participants (1 to 3) across the microsegments.

Quotes from participants regarding what would make the MDH handout more useful:

A magnet on the fridge—and basically memorize when I was shopping. If you just take the top one [green portion of the handout], turn it into a magnet, I would use it.

It would be good to say how or why they have these levels.

When it says “do not eat these fish,” I would want to see why. It would be helpful to state why we should eat these fish.

I feel like there’s a lot of what I am unaware about in terms of what’s healthy or why it’s unhealthy.

How likely to use

Question: How likely are you to use this information to choose which fish to eat and how often?

- “Likely” or “very likely” to use the handout was indicated in all microsegments.
- Taking a photo of the handout with cell phone was indicated in prosperous, established couples and young singles and starter families (except in Duluth).
 - » Taking a photo of the handout with cell phone and sharing on Pinterest or Facebook was noted by participants (3) from young singles and starter families.
- Unlikely to use or follow guidelines was indicated by 3 participants (2 would use it but not necessarily comply with the guidelines; the other indicated she “wouldn’t likely use this”) in the prosperous, established couples and flourishing families.

Quotes from participants regarding how likely to use the MDH guidelines table:

I am very likely to use this—for making choices for what I am eating and how many times. It's short and sweet, I like it. If you want more information, you can do a search on the Internet. This is a first good reference.

Just because it's red [a fish is listed in the red "do not eat" box on the handout] doesn't mean I'm not going to eat it.

I would use it as a reference, but I would still probably not always follow it. I would eat swordfish if I could . . . because I don't know the repercussions.

Title recommendations

Question: Any ideas of what to title this information?

- Taking out “sensitive populations” in the title was recommended in the prosperous, established couples, the mixed microsegment (in Duluth), and young singles and starter families (except in Duluth).
- Using the term *recommendations* rather than *guidelines* to convey a softer approach was suggested in the mixed microsegment (in Duluth).
- Making the title shorter or less scientific and including the word *fish* were among other individual comments.

Quotes (title ideas) from participants regarding revising the title on MDH guidelines table:

How to Safely Include Fish in Your Family's Diet

Fish and You

Table 1. Highlights on key topics from focus groups: fish preferences, barriers, influences, and perceived benefits and risks (descending order of frequency; N=24; some participants provided more than 1 answer within a key topic)					
Fish preferences	Factors in choice	Barriers to eating	Influences for eating more	Perceived benefits	Perceived risks
<ul style="list-style-type: none"> • Salmon (18) • Tilapia (9) • Tuna, canned (6) • Shrimp (6) • Walleye (5) • Crappie (4) • Sushi (3) • Sunfish (3) • Cod (2) • Catfish (2) • Trout (2) • Whitefish (2) • Pike (2) • Lox (1) • Pollock (1) • Whitefish, smoked (1) • Salmon, smoked (1) • Bluegill (1) • Bass (1) • Swai (1) • Hake (1) • Crab legs (1) • Mahi mahi (1) 	<ul style="list-style-type: none"> • Taste and flavor (8) • How prepared, time, knowledge, ease, pre-seasoned, frozen (7) • Sustainability (4) • Whatever the anglers bring home, what's in season (3) • Least amount of bones (2) • Texture (2) • Benefits (1) • Avoid mercury (1) • What's available in store (1) • Cost (1) • Sustainability (1) • Call father, chef (1) • Comfort food (1) 	<ul style="list-style-type: none"> • Cost (9) • Hard to prepare (5) • Taste (4) • Smell, odor (4) • Time-consuming to prepare (4) • Lack of knowledge re how to prepare (4) • Sustainability, source (3) • Husband doesn't like fish (3) • Lack of knowledge re what each fish tastes like (2) • Bones (2) • Not as filling as other protein sources (1) • What sides to serve with fish (1) • Slimy/texture (1) • Mercury (1) • Can't find in store (1) • Availability at affordable restaurants (1) • Food allergies (1) 	<ul style="list-style-type: none"> • Knowing how often to eat when not pregnant (2) • More recipes (2) • Desire to lose weight (1) • More selection in stores (1) • More availability at work cafeteria (1) • More options (1) • More on sale (1) • Samples at grocery store (1) • Packaging with fish, seasoning and recipe (1) • If my family would eat it (1) • Tips for working into a busy life (1) • Emphasizing omega 3s (1) 	<ul style="list-style-type: none"> • Health benefits for self, family (8) • High protein (4) • Variety for kids' diet (3) • Vitamin D (3) • Vitamins, minerals (2) • Less fat (2) • Low calorie (1) 	<ul style="list-style-type: none"> • Mercury (12) • Don't think about risks unless pregnant, never think about risks, mercury not a concern (12) • Bones, choking (2) • Contaminants, pollution (2) • Just take fish oil pill (2) • Sustainability, how raised, caught (1) • Who sells the product, brand (1) • Eating raw fish (1) • Taste not appealing to child (1) • Thinks affects gender equally (1)

Table 2. Highlights on key topics from focus groups: decision venue, information and format preferences, and access in health care
(descending order of frequency; N=24; some participants provided more than 1 answer within a key topic)

Decision-making venue	Information wanted	Format for information wanted	Access to information in health care setting
<ul style="list-style-type: none"> • Stores (11) • Restaurant (6) • Home (4) • Pinterest (3) • Traveling (1) • Angler choice (1) 	<ul style="list-style-type: none"> • Source, where fish comes from (6) • Benefits (6) • Risks (5) • Careful language (safe vs unsafe, emphasize positive over negative) (2) • Taste, texture (2) • Freshness, when caught (2) • Brands high in omegas, low in mercury (1) • Fish type and level of mercury by lake (1) • How long take to prepare (1) • Fun facts, did you know? (1) • Nothing, set in my ways (1) 	<ul style="list-style-type: none"> • On packaging, label (flavoring, fishiness scale, number-based) (9) • Recipes (with pic, in email, on package, mini recipe book, with health benefits noted) (9) • QR codes (4) • Pictures (of prepared fish, on Pinterest, in a chart) (4) • PSA (3) • Website (3) • App (3) • Stand in grocery store (2) • Poster (1) • Online coupon (1) • Word of mouth (1) • Butcher recommendation (1) • Brochure at fish counter (1) • Fish taste sampling in store (1) • Group meeting, discussion (1) • Letter (1) • Something to put on refrigerator (1) • Mailer (1) • Something that has pics of kids in it (1) • No QR (2) • No app (2) • No brochure (1) • No email (1) • No website (1) 	<ul style="list-style-type: none"> • Info, brochure in waiting room (9) • Doctor, annual exam (7) • Link on MyChart, MyHealth (7) • Poster in clinic (5) • Mail (with coupon, from health plan, direct mail) (5) • Health incentive program (3) • Health plan website (2) • Health plan (2) • Info in exam room (2) • At the front desk (1) • Employer website (1) • Credible website (1) • Email from health plan (1) • AVS (1) • “Able to pull up on phone” (1) • Email (1) • Doesn’t matter who (4) • Dietitian (3) • Doctor (2) • One-on-one conversation with provider (2) • Pediatrician (1) • Front desk person (1) • Call from RN (1) • Employer gym (1) • Co-op, wouldn’t rely on provider (1)

Table 3. Highlights on key topics from focus groups: MDH guidelines table

(descending order of frequency; N=24; participants provided more than 1 answer within a key topic)

Clarity of information	How make more useful	How likely to use	Title recommendations
<ul style="list-style-type: none"> • Pretty clear (6) • Colorful (5) • Like MDH label (2) • Good info (1) • Short and sweet (1) • Flows well (1) • Likes bullet points (1) • OK not to have “why” since info from MDH (1) • Yes, is clear if pay attention to sensitive populations (1) • Like 1 or 2 serving (1) • How often and who is at risk is clear (1) • Not clear (1) • Too clinical (1) • Not clear that mercury is the only factor discussed (1) • Links to websites are confusing where located (1) • Too much to read (1) • Not clear if statewide (1) 	<ul style="list-style-type: none"> • Include the “why” (11) • Include guidelines for non-sensitive populations (8) • More info on mercury levels (6) • Explain what a serving size is (4) • Explain “white” vs “light” tuna (4) • Explain what happens if you eat the fish on the not-eat list (3) • Explain “OK” vs “Good” (3) • Put info on a magnet (3) • Length of fish is not helpful if buying (3) • Define sensitive populations (2) • What are the benefits of eating fish in the top 2 lists (2) • Give source for each fish (2) • Put info in email, but not buried in a newsletter in email (2) • Put OK in capital letters (1) • Define farm raised (1) • Put links to websites at bottom (1) • URLs should be on 1 line, do not break (1) • Include a QR code to link to more information (1) • Put info online (1) • Put info in direct mail (1) • Put info as mobile app (1) • Give a rating for each fish (1) • Include fish from Wisconsin (1) • Explain why can’t have Great Lakes fish (1) • Put on front side what can eat, and on back side what can’t eat (1) 	<ul style="list-style-type: none"> • Would take a pic of handout and put on phone (6) • Likely (6) • Very likely (6) • Would put on refrigerator (3) • Would share with family or others (3) • Would put on Pinterest (2) • Would like in grocery store for when shopping (2) • Would use it if pregnant (1) • Would look at before shopping (1) • Would share it on Facebook (1) • Would use it but not comply (2) • Not likely (1) 	<ul style="list-style-type: none"> • Take out sensitive populations in title (4) • Use “recommendations” instead of “guidelines” (3) • Make shorter (2) • Make less scientific (1) • Make it seem important/warning (1) • Play up that fish is safe (1) • Put fish in the title (1) • “Safe Fish Consumption” (1) • “Statewide Safe Eating Guidelines” (1) • “Fish and You” (1) • How to Safely Include Fish in Your Family’s Diet (1) • Didn’t even look at title (1)

General Observations

Participation and engagement varied from group to group, regardless of microsegment. Groups with more participants provided more variation in response and more discussion among participants.

Additional Thematic Considerations

As noted in the tables above, participants in general were apt to reflect holistically about the topic of safe fish and fish consumption. For example, in addition to mentioning mercury in response to questions asked (general and specific to the guidelines table), they expressed concern about other factors in decision-making surrounding fish consumption, including:

- Pollutants/contaminants
- Wild caught vs farm-raised fish
- GMOs
- Sustainability
- Healthiness/quality of regional waters in which they or family member fish
- Making meals for the whole family—not just themselves
- Wanting information about safe fish consumption for other family members not in the sensitive population

Appendix A. Focus Group Questions

1. Describe a meal including fish that you typically eat with family or friends. If you do not eat fish, describe any typical meal. (Warmup)
 - For those who don't eat fish, what keeps from you eating fish?
 - For those who do eat fish, how often do you eat fish?
2. How do you choose what fish you eat?
 - a. (Probe) Do you choose by species of fish?
3. What, if anything, keeps you from eating fish more often?
 - a. (Probe) What might influence you to eat more fish?
 - b. (Possible probe) Please say more about (topic raised by participant)...
4. As a woman, how do you think about the risks and benefits of eating fish?
 - a. (Probe) For those of you who are mothers, how do you think about the risks and benefits of eating fish?
5. Where are you when making a choice about what fish to eat or buy?
 - a. What kind of information might help you make those choices? (note kind and format and what to do with the information)
 - b. How would you like this information available to you? (website, brochure, app)
6. Now that we have talked about what information you want, let's turn to where you might like to get that information. Think about how you interact with the health care system.
 - a. From what point in the care process would you be interested in learning about resources for safe fish consumption (clinic visit, plan info, email through mychart, employer website, prenatal class, letter following cessation of birth control, after-visit summary, direct mail, PSA)?
 - b. Is there a person other than your primary care clinician who could provide that information to you?
7. Please look at this table (NOTE TO IRB: Uploaded separately as "SafeEatingGdlnesFish071315.pdf").
 - a. How clear is the information?
 - b. How likely are you to use this information to choose which fish to eat and how often?
 - c. What might make it more useful for you?
 - d. Any ideas of what to title this information?

Appendix B. MDH Information Formatted as Handout and Distributed for Focus Group Question 7.



**Statewide Safe-Eating Guidelines
for Sensitive Populations:
Pregnant Women, Women Who Could Become Pregnant
and Children under Age 15**

Every week eat some of these fish

<p>2 SERVINGS of any of these fish:</p> <p>Purchased fish:</p> <ul style="list-style-type: none"> • Catfish (farm-raised) • Cod • Crab • Flatfish • Herring • Oysters • Pollock <ul style="list-style-type: none"> • Salmon (Atlantic or Pacific; not Great Lakes) • Sardines • Scallops • Shrimp • Tilapia 	OR	<p>1 SERVING of any of these fish:</p> <p>Purchased fish:</p> <ul style="list-style-type: none"> • Canned "light" tuna <p>Minnesota caught fish:</p> <ul style="list-style-type: none"> • Bullhead • Crappie • Sunfish • Yellow perch
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You may add other purchased fish that are low in mercury to this list.

For a list of mercury levels in purchased fish, see the United States Food and Drug Administration (FDA) list of Mercury levels in Commercial Fish and Shellfish. www.fda.gov/food/foodborneillnesscontaminants/metals/ucm115644.htm

And, Once a Month it is also OK to eat 1 serving of these fish
1 SERVING EACH MONTH of any of these fish:

<p>Purchased fish:</p> <ul style="list-style-type: none"> • Canned "white" tuna • Chilean seabass • Grouper • Halibut <ul style="list-style-type: none"> • Marlin • Orange roughy • Tuna steak 	<p>Minnesota caught fish:</p> <ul style="list-style-type: none"> • Bass • Catfish • Northern pike smaller than 30 inches • Walleye smaller than 20 inches • Other Minnesota species
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If you eat fish from just a few lakes and rivers in Minnesota, follow site specific advice for lakes and rivers that you catch and eat fish from regularly. www.health.state.mn.us/divs/eh/fish/eating/sitespecific.html

Do Not Eat these fish

<p>Purchased fish:</p> <ul style="list-style-type: none"> • King mackerel • Shark <ul style="list-style-type: none"> • Swordfish • Tilefish 	<p>Minnesota caught fish:</p> <ul style="list-style-type: none"> • Muskellunge • Northern pike longer than 30 inches • Walleye longer than 20 inches
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Appendix C: Frequently Asked Questions During the 7 Focus Groups

How does the mercury get into the water?

Why does the size of the fish matter?

Is it even important to eat fish during pregnancy? Shouldn't you avoid it altogether?

Why are you doing these focus groups?

How were people selected to participate in this study?

Why do you have a handout just for women who are pregnant or could become pregnant—and kids under 15?

What about for people who are not within the sensitive populations? Do they get to eat as much as they want?

Why were you asking about the health care system? Why would that be important?

Why is it so hard to change the labeling of fish?

Why don't you include information about sustainability or GMOs? Why don't you talk about the issues with farm-raised versus wild caught?

What about fish caught locally? Can we buy that in markets?

What about the quality of fresh vs frozen fish?

What about other different types of fish?

What's the difference between canned light tuna and canned white tuna? Why are we able to eat one more than the other?

What about raw fish?

What exactly do you mean when you say "or who could become pregnant?"

Should we avoid fishing in lakes and rivers that look really dirty or polluted?

How are we supposed to know all this—that a fish is safe to eat? Does the DNR regulate this?

But what if there is a lake that you are absolutely not supposed to fish because the fish are contaminated? How would I know this?

Are there really that many walleye out there that are longer than 20 inches? [Guidelines for

How are we supposed to know the length of the fish if we are eating in a restaurant?

What exactly are the benefits of eating fish? And wouldn't it be better just to take a supplement?

You talked about omega-3s as a benefit. What about omega-6s?

I heard that the feed given to the farmed fish can be higher in omega 6s.

I say, if it's in the store, it's safe to eat. Is that a wrong assumption?

Can you buy Great Lakes salmon in the store? Do I need to pay better attention to that? And why is it not good to eat the Great Lakes salmon?

Is there a difference between Coho salmon and Chinook salmon?

Are these guidelines only statewide or is this a nationwide thing to follow?

What exactly is a serving size for the fish listed in this handout?