Strategies for Enhancing LIHEAP Performance
Hands-On Exercises
INSTRUCTIONS SHEET

General Instructions for Accessing the Benefit Matrix

Step #1 – Navigate to the home page of the LIHEAP Clearinghouse website: https://liheapch.acf.hhs.gov/

Step #2 – Click on the "State Programs" tab at the top of the page.

Step #3 – Under the header "WHAT YOU'LL FIND HERE", click on "DELIVERY".

Step #4 – Click on "Benefits".

Step #5 – At the bottom of the page, there will be a list of states and a link to their benefit matrices. Click on the matrix for your chosen state.

General Instructions for Accessing the State Snapshot

Step #1 – Navigate to the LIHEAP PMW: https://liheappm.acf.hhs.gov/

Step #2 – Login to the site using the account information provided.

Step #3 – Click on the "Performance Measures" Tab.

Step #4 – Under "Performance Management Integration Guide", click on the bolded "here".

Step #5 – Under "State Performance Measures Snapshot", choose your state in the drop-down menu to open your state's Snapshot.

Exercise #1 – Understanding How Your Benefit Matrix Distributes Benefit by Income

Special Note: We understand that state benefit matrices may vary, and some states may not be able to perfectly identify benefits according to the criteria specified below. If you are unable to identify all of the criteria listed below, *please pick one fuel type for which you are able to look at the lowest and highest income categories.*

Question 1-1: In your state's benefit matrix, identify the benefit for a natural gas main heat household of three in a single-family home in the lowest income category. Record the midpoint of the lowest income category and the benefit amount for that category.

Instructions for Question 1-1:

1. Use your state's benefit matrix.
2. Identify the benefit for a household with the following characteristics:
    a. Natural Gas main heat
    b. Household Size of 3
    c. Single Family Home
    d. **Lowest Income Category**
3. Identify the midpoint of the lowest income category. To get the midpoint of the lowest income category:
    a. Identify the maximum income amount of the lowest income category.
    b. Identify the minimum income amount of the lowest income category.
    c. Add the maximum and minimum amount.
    d. Divide the sum of the maximum and minimum by two.
4. Record the values in the Q&A Sheet.

Question 1-2: In your state's benefit matrix, identify the benefit for a natural gas main heat household of three in a single-family home in the highest income category. Record the midpoint of the highest income category and the benefit amount for that category.

Instructions for Question 1-2:

1. Use your state's benefit matrix.
2. Identify the benefit for a household with the following characteristics:
    a. Natural Gas main heat
    b. Household Size of 3
    c. Single Family Home
    d. **Highest Income Category**
3. Identify the midpoint of the highest income category. To get the midpoint of the highest income category:
    a. Identify the maximum income amount of the highest income category.
    b. Identify the minimum income amount of the highest income category.
    c. Add the maximum and minimum amount.
    d. Divide the sum of the maximum and minimum by two.

4. Record the values in the Q&A Sheet.

Question 1-3: What is the ratio of the lowest income benefit to highest income benefit for this type of natural gas main heat household?

Instructions for Question 1-3:

1. Record the values obtained from Question 1-1 and Question 1-2 in the table in the Q&A Sheet.
2. To obtain the income midpoint ratio, perform the calculation below:

   Lowest Income Category Income Midpoint ÷ Highest Income Category Income Midpoint

3. To obtain the benefit ratio, perform the calculation below:

   Lowest Income Category Benefit ÷ Highest Income Category Benefit

4. Record the values in the table in the Q&A Sheet.

Question 1-4: In your Snapshot, look at natural gas main heat households. For the average household, what is the average annual income and average annual total LIHEAP benefit? Record the values below.

Instructions for Question 1-4:

1. Open your State Snapshot.
2. Use Figure 2-1 to record the average annual income for the average (orange bar) natural gas main heat household.
3. Use Figure 2-4 to record the average annual total LIHEAP Benefit for the average (orange bar) natural gas main heat household.
4. Record the values in the Q&A Sheet.

Question 1-5: Look at natural gas main heat households again. For high burden households, what is the average annual income and average annual total LIHEAP benefit? Record the values below.

Instructions for Question 1-5:

1. Use the State Snapshot.
2. Use Figure 2-1 to record the average annual income for high burden (blue bar) natural gas main heat households.
3. Use Figure 2-4 to record the average annual total LIHEAP Benefit for high burden (blue bar) natural gas main heat households.
4. Record the values in the Q&A Sheet.

Question 1-6: What is the ratio of the high burden household income to the average household income for natural gas households? What is the ratio of the high burden benefit to average LIHEAP benefit?

Instructions for Question 1-6:

1. Record the values from Question 1-4 and 1-5 in the table in the Q&A Sheet.
2. To obtain the income ratio, perform the calculation below:

High Burden Natural Gas Household Income ÷ Average Natural Gas Household Income

3. To obtain the benefit ratio, perform the calculation below:

   High Burden Natural Gas LIHEAP Benefit ÷ Average Natural Gas LIHEAP Benefit

4. Record the values in the table in the Q&A Sheet.

Question 1-7: Is the average annual income ratio from your LIHEAP data consistent with the benefit matrix income ratio? Is the LIHEAP benefit ratio consistent with the benefit ratio from your benefit matrix? What differences do you see, if any?

Instructions for Question 1-7:

1. Compare the ratios you calculated in Question 1-3 and Question 1-6.
2. Record your response in the Q&A Sheet.

Question 1-8: What is the energy burden before LIHEAP for the average natural gas main heat household and high burden natural gas main heat household? Record the values below.

Instructions for Question 1-8:

1. Use the State Snapshot.
2. Use Figure 2-3 to record the energy burden before LIHEAP for the average (orange bar) natural gas main heat household
3. Use Figure 2-3 to record the energy burden before LIHEAP for high burden (blue bar) natural gas main heat households.
4. Record the values in the Q&A Sheet.

Question 1-9: What is the energy burden after LIHEAP for the average natural gas main heat households and high burden natural gas main heat household? Record the values below.

Instructions for Question 1-9:

1. Use the State Snapshot.
2. Use Figure 2-5 to record the energy burden after LIHEAP for the average (orange bar) natural gas main heat household
3. Use Figure 2-5 to record the energy burden after LIHEAP for high burden (blue bar) natural gas main heat households.
4. Record the values in the Q&A Sheet.

Question 1-10: What is the ratio of a high burden household's energy burden before LIHEAP to an average household's energy burden before LIHEAP? What is the ratio of the energy burden after LIHEAP?

Instructions for Question 1-10:

1. Record the values from Question 1-8 and 1-9 in the table in the Q&A Sheet.

2. To obtain the energy burden before LIHEAP ratio, perform the calculation below:

   High Burden Energy Burden before LIHEAP ÷ Average Energy Burden before LIHEAP

3. To obtain the energy burden after LIHEAP ratio, perform the calculation below:

   High Burden Energy Burden after LIHEAP ÷ Average Energy Burden after LIHEAP

4. Record the values in the table in the Q&A Sheet.

Question 1-11: Compare the energy burden before and after LIHEAP for both groups. Compare the energy burden ratios you calculated. Do you see any reason to change the distribution of benefits between those two groups?

Instructions for Question 1-11:

1. Compare the energy burdens and energy burden ratios in the table in Question 1-10.
2. Record your responses in the Q&A Sheet.

Question 1-12: Now that you have looked at your benefit matrix and Performance Measures data together, how well does your benefit matrix handle the distribution of benefits by income? Does your state need to update its matrix? Explain why.

Instructions for Question 1-12:

1. Record your responses in the Q&A Sheet.

Exercise #2: Understanding How Your Benefit Matrix Distributes Benefits by Main Heating Fuel Type

Special Note: We understand that state benefit matrices may vary, and the following exercise uses natural gas and delivered fuel as the fuel types. ***If you do not have one of these fuel types, substitute it with a fuel type that you do have data for.***

Question 2-1: In your state's benefit matrix, identify the benefit for a natural gas main heat household of three in a single-family home in the *middle income* category. Record the midpoint of the income category and the benefit amount for that category.

Instructions for Question 2-1:

1. Use your state's benefit matrix.
2. Identify the benefit for a household with the following characteristics:
    a. **Natural Gas main heat**
    b. Household Size of 3
    c. Single Family Home
    d. Middle Income Category
3. Identify the midpoint of the middle income category. To get the midpoint of the middle income category:
    a. Identify the maximum income amount of the middle income category.
    b. Identify the minimum income amount of the middle income category.
    c. Add the maximum and minimum amount.
    d. Divide the sum of the maximum and minimum by two.
4. Record the values in the Q&A Sheet.

Question 2-2: In your state's benefit matrix, identify the benefit for a delivered fuel (fuel oil or propane) main heat household of three in a single-family home in the *middle income* category. Record the midpoint of the income category and the benefit amount for that category.

Instructions for Question 2-2:

1. Use your state's benefit matrix.
2. Identify the benefit for a household with the following characteristics:
    a. Delivered Fuel (fuel oil or propane) main heat
    b. Household Size of 3
    c. Single Family Home
    d. Middle Income Category
3. Identify the midpoint of the middle income category. To get the midpoint of the middle income category:
    a. Identify the maximum income amount of the middle income category.
    b. Identify the minimum income amount of the middle income category.
    c. Add the maximum and minimum amount.
    d. Divide the sum of the maximum and minimum by two.
4. Record the values in the Q&A Sheet.

Question 2-3: What is the ratio of the income midpoint for natural gas households to delivered fuel households? What is the ratio of the natural gas benefit to the delivered fuel benefit? Record the values in the following table.

Instructions for Question 2-3:

1. Record the values obtained from Question 2-1 and Question 2-2 in the table in the Q&A Sheet.
2. To obtain the income midpoint ratio, perform the calculation below:

   Natural Gas Income Midpoint ÷ Delivered Fuel Income Midpoint

3. To obtain the benefit ratio, perform the calculation below:

   Natural Gas Benefit ÷ Delivered Fuel Benefit

4. Record the values in the table in the Q&A Sheet.

Question 2-4: In your Snapshot, look at natural gas main heat households. For the average household, what is the average annual income, average annual total residential energy bill, and the average annual total LIHEAP benefit? Record the values below.

Instructions for Question 2-4:

1. Open your State Snapshot.
2. Use Figure 2-1 to record the average annual income for the average (orange bar) natural gas main heat household.
3. Use Figure 2-2 to record the average annual total residential energy bill for the average (orange bar) natural gas main heat household.
4. Use Figure 2-4 to record the average annual total LIHEAP Benefit for the average (orange bar) natural gas main heat household.
5. Record the values in the Q&A Sheet.

Question 2-5: In your Snapshot, look at delivered fuel (either fuel oil or propane) main heat households. For the average household, what is the average annual income, average annual total residential energy bill, and the average annual total LIHEAP benefit? Record the values below.

Instructions for Question 2-5:

1. Open your State Snapshot.
2. Use Figure 2-1 to record the average annual income for the average (orange bar) delivered fuel main heat household.
3. Use Figure 2-2 to record the average annual total residential energy bill for the average (orange bar) delivered fuel main heat household.
4. Use Figure 2-4 to record the average annual total LIHEAP Benefit for the average (orange bar) delivered fuel main heat household.
5. Record the values in the Q&A Sheet.

Question 2-6: What is the ratio of the natural gas income to the delivered fuel income? What is the ratio of the natural gas energy bill to the delivered fuel energy bill? What is the ratio of the natural gas benefit to the delivered fuel benefit?

Instructions for Question 2-6:

1. Record the values from Question 2-4 and 2-5 in the table in the Q&A Sheet.
2. To obtain the income ratio, perform the calculation below:

   Natural Gas Household Income ÷ Delivered Fuel Household Income

3. To obtain the energy bill ratio, perform the calculation below:

   Natural Gas Household Energy Bill ÷ Delivered Fuel Household Energy Bill

4. To obtain the ratio, perform the calculation below:

   Natural Gas LIHEAP Benefit ÷ Delivered Fuel LIHEAP Benefit

5. Record the values in the table in the Q&A Sheet.

Question 2-7: Is the average annual income ratio from your LIHEAP data consistent with the benefit matrix income ratio? Is the LIHEAP benefit ratio consistent with the benefit ratio from your benefit matrix? Using the energy bill ratio, does the benefit matrix accurately represent the differences in energy costs?

Instructions for Question 2-7:

1. Compare the ratios you calculated in Question 2-3 and Question 2-6.
2. Record your response in the Q&A Sheet.

Question 2-8: What is the energy burden before LIHEAP for the average natural gas main heat household and delivered fuel main heat household? Record the values below.

Instructions for Question 2-8:

1. Use the State Snapshot.
2. Use Figure 2-3 to record the energy burden before LIHEAP for the average (orange bar) natural gas main heat household
3. Use Figure 2-3 to record the energy burden before LIHEAP for the average (orange bar) delivered fuel main heat households.
4. Record the values in the Q&A Sheet.

Question 2-9: What is the energy burden after LIHEAP for the average natural gas main heat households and delivered fuel main heat household? Record the values below.

Instructions for Question 2-9:

1. Use the State Snapshot.
2. Use Figure 2-5 to record the energy burden after LIHEAP for the average (orange bar) natural gas main heat household
3. Use Figure 2-5 to record the energy burden after LIHEAP for the average (orange bar) delivered fuel main heat households.
4. Record the values in the Q&A Sheet.

Question 2-10: What is the ratio of the average natural gas household's energy burden before LIHEAP to the average delivered fuel household's energy burden before LIHEAP? What is the ratio of the energy burden after LIHEAP?

Instructions for Question 2-10:

1. Record the values from Question 2-8 and 2-9 in the table in the Q&A Sheet.
2. To obtain the energy burden before LIHEAP ratio, perform the calculation below:

   Natural Gas Energy Burden before LIHEAP ÷ Delivered Fuel Energy Burden before LIHEAP

3. To obtain the energy burden after LIHEAP ratio, perform the calculation below:

   Natural Gas Energy Burden after LIHEAP ÷ Delivered Fuel Energy Burden after LIHEAP

4. Record the values in the table in the Q&A Sheet.

Question 2-10: Compare the energy burden before and after LIHEAP for both groups. Compare the energy burden ratios you calculated. Do you see any reason to change the distribution of benefits between those two groups?

Instructions for Question 2-11:

1. Compare the energy burdens and energy burden ratios in the table in Question 2-10.
2. Record your response in the Q&A Sheet.

Question 2-12: Now that you have looked at your benefit matrix and Performance Measures data together, how well does your benefit matrix handle the distribution of benefits by main heating fuel type? Does your state need to update its matrix? Explain why.

Instructions for Question 2-12:

1. Record your responses in the Q&A Sheet.