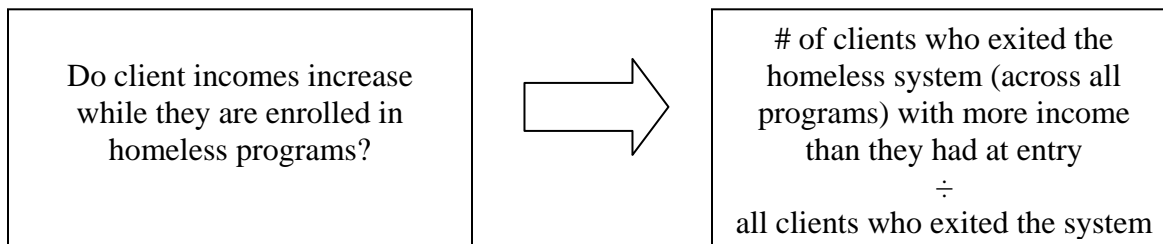## *Exhibit 5-2: How to Calculate a System Outcome*

System outcomes are measures of the homeless system's effectiveness in certain areas, such as placing people in permanent housing, increase their incomes, reduce recidivism. Conceptually, system measures are straightforward; however, calculating performance on a system measure requires the community to analyze client-level data across programs, which can be complicated. This handout illustrates the process for measuring the homeless system's effectiveness at increasing client incomes.

First, you must translate your desired performance measure into a calculation.

Do client incomes increase while they are enrolled in homeless programs?	⟹	# of clients who exited the homeless system (across all programs) with more income than they had at entry ÷ all clients who exited the system

Then you must define what you need to collect to report on this measure over time, where you will store the data, and the specific query or process you will use to analyze the data to produce the results. As mentioned in the text of this guidebook, an Homeless Management Information System (HMIS) is a terrific resource for collecting and tracking data to support system-level performance measurement.

To define your query, you must decide on the following:

- *Programs* to include in your performance calculation
  - o All programs
  - o Only a particular program type (e.g., all outreach programs or all permanent supportive housing programs)
  - o Only programs that serve a specific subpopulation (e.g., youth)
- *Clients* to include
  - o All clients
  - o All clients that exited the system
  - o All clients currently enrolled in the system
  - o Only clients who have been in the system for more than 6 months
- *Data elements* will you need
- *Rules* will you use to reconcile data across programs if clients were enrolled in more than one program during the timeframe
- *Timeframe* you are interested in
  - o Specify the date field (e.g., entry date, exit date, placement date, assessment date, etc.)
  - o Define your data range

Sample Question: Does the System Increase Client Income?

To answer the question, we need to calculate the percentage of clients who increased their income while enrolled in (as a result of) the homeless system.

- Programs to include?   All programs in the system
- Clients to include?   Adults with a homeless episode that meet the following criteria:
  - Homeless episode began after January 1, 2006
  - Exited the system
  - Have not returned for at least 6 months since exit
- Data elements will we need?
  - Client identifiers to de-duplicate across programs
  - Date of Birth to sort adults from children
  - Program Entry and Program Exit dates to define program stays
  - Client Income and dates of Income Assessment(s) to tie income to program stays
  - Source of Income (all categories, not just earned income or mainstream benefits)
- Timeframe?   Our reporting period is January 1, 2006 through July 1, 2007
  - 1st Program Entry Date must be after January 1, 2006
  - Clients must have a Program Exit Date for their last episode in the system
  - The most recent Program Exit Date is more than 6 months from the end of the study period

The chart below provides sample data for four clients who have been served by three different programs within the homeless system.

Client ID	Program ID	Client DoB	Program Entry Date	Program Exit Date	Entry Income	Exit Income	Change in Income (Exit – Entry)	Income Change
1	A	6/2/70	1/8/06	6/1/06	$100	$350	$450-$100	$350
1	B	6/2/70	6/1/06	9/1/06	$350	$450		
2	C	9/1/65	2/1/07	6/15/07				
3	C	3/4/57	9/1/06	1/7/07	$500	$0	$0-$500	($500)
4	B	8/9/41	4/3/06	12/31/06	$0	$635	$635-$0	$635
						System Results (all clients, across programs)		$162

Step 1: De-duplicate clients across programs using client identifiers.
For this query, we want to look at *adults with a homeless episode that began after January 1, 2006, have exited the system, and have not returned for at least 6 months since exit.*

In our "database", we found *5 client records* that meet these criteria; de-duplication shows that the records represent *4 unduplicated clients*.

Step 2:   Filter for adults only.
For this query, we need to look at *Date of Birth to sort out clients who are at least 18 years old.*

> All 4 clients are adults.

Step 3:   Calculate the number of program stays for each client.

> Client #1 had 2 program stays. Clients 2, 3, and 4 each had one stay during the time period.

Step 4:   Consolidate sequential stays into a single episode.
For this query, we made a *business rule* that we would consolidate sequential stays with fewer than 30 days between a Program Exit Date and a Program Exit Date into a single episode. In other words, we considered all clients that exited the system but returned within 30 days to have never really left.

> We combined the two program stays for Client #1 because his last Program Exit date was within 30 days of his next Program Entry.

Step 5:   Filter out clients that don't meet the specified time parameters.

> Our reporting period is from 1/1/06 through 7/1/07. Client #2 exited less than 6 months from the end of the time period, so we will exclude his record.

Step 6:   Calculate the difference in income between Program Entry and Program Exit.
This step involves several calculations. First, we have to examine Entry and Exit Income for each client, and then calculate the client-level change in Income. After we have client-level change, we can calculate results across programs to see the percentage increase/decrease.

> First, we calculated *income recorded at Program Entry from the first program in each client's first episode*. Then, we calculated *income at Program Exit from the last program in each client's last episode*. We subtracted the *Income at Program Entry* from the *Income at Program Exit*.
>
> We did not have any clients with multiple episodes, but our rule for those clients could have been to calculate the income gain (or loss) for each episode separately and sum the results for the time the person spent in the homeless system.

Results: Calculate the rate of increased income.

The rate of increased income in this example is 67%. The average income change was $162. Income change ranged from -$500 to $635.