UPMC for You

UPMC High Value Care for Kids Population DIVe Tool – Usage Instructions

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Purpose:

The Population DIVe Tool provides the user with an interactive method for analyzing the health care spending patterns of a target patient population. The tool highlights key demographic information as well as cost data related to medical and pharmacy utilization, specialist utilization and chronic condition prevalence. The dynamic nature of the tool allows the user to change definitions of high spending and the frequency of high spending. Some of the questions that can be answered with this tool include: Who are the consistently high-spenders in a defined target population? What medical conditions and/or aspects of health care service utilization drive their high-spending patterns? What is the average total cost of care for top-spending patients over a designated time period? With this information, key stakeholders can identify a target population for whom service delivery improvements would be most likely to result in total cost savings and design and implement new payment models that support these improvements.

Definitions:

PMPM – Per Member Per Month (PMPM) is a common health insurance metric. It is primarily used for calculating the average of total healthcare costs or revenue for a single member in a month.

Episodic Spend Threshold – Cost in dollars that represents the lower limit of spending for a member to be considered a high spender in a given episode.

Episodic Spend Member – A member who has a spike in spending in one or more months (episodes). Episodic spending is in contrast to consistently high spenders.

Understanding the tool:

Part A:

This section describes the baseline population before any assumptions are made and without applying any filters.

Part B:

This section allows the user to apply three different filters to the population based on a grouping of the user's choice and based on spending in two different time periods.

>**Which group should the population be associated with? –** This grouping is based on the data set. Examples include grouping members by practice, hospital or physician.

>**Which Year 1 PMPM percentile do you want to isolate? –** The percentile of top spenders in Year 1 that you would like to isolate. For example, selecting 90% here would include only the members within the top 10% of spenders in Year 1 (90% and above).

>**Which Year 2 PMPM percentile do you want to isolate? –** The percentile of top spenders in Year 2 that you would like to isolate. For example, selecting 90% here would include only the members within the top 10% of spenders in Year 2 (90% and above).

Part C:

This section allows the user to apply a further filter to the population based on high spending frequency. The user can set a spending threshold and define the frequency with which that threshold is exceeded. This allows the user to distinguish between infrequent spikes in high spending and consistently high spending.

>**% the Year 2 PMPM should be increased to set "episodic spend" threshold? –** The additional percentage that should be added to the Year 2 PMPM (as defined in Part B) to determine a threshold of high spending. For example, selecting 20% here would identify anyone with a Year 2 PMPM that is 120% of the average as being a high episodic spender.

>**New PMPM threshold (lower bound) that serves to identify "episodic spending" –** The dollar amount that defines one month of high spending, directly based on the percentage of Year 2 PMPM selected to set the episodic spending. This amount is calculated by the tool based on your previous assumptions.

>**Minimum # of months that member spend exceeded "episodic spend" threshold –** To define how frequently the member spends more than the threshold set above. This distinguishes members with one or two spikes in spending from consistently high spenders by counting the months they exceed that dollar amount.

Instructions for downloading the tool and preparing it for updates and/or use:

Note: In order to optimize this tool's efficiency, please follow the instructions below.

1. Double click the Excel file to open the file.

    It can take several minutes to open and launch the file – the tool performance can decrease as the size of your data set increases.

2. Within Excel, navigate to "File," "Save as" to save a copy of the tool locally on your computer.

3. Once saved, you may see a yellow bar at the top of the screen with a security warning (see below):
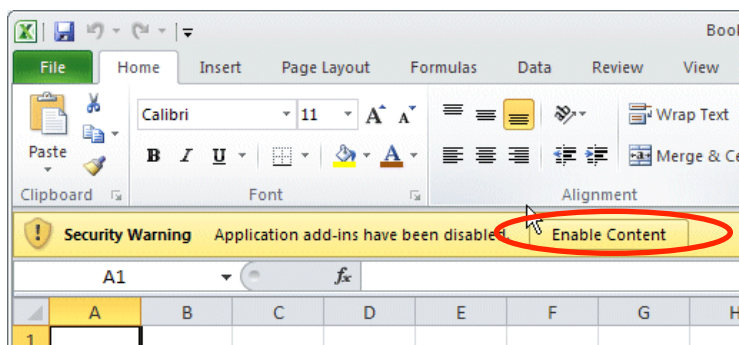
4. Click "Enable Content"

5. The tool is now ready for use.

Instructions for updating the tool with new data:

Updates to the tool are done in the *Inputs* and *Drop Down Lists* tabs.

Inputs Tab:

Understanding the *Inputs Tab*

- The Inputs tab is built to accommodate as many as 25,000 rows of data. Keep in mind that the tool's processing speed slows as the number of records grows.
  - *Each row in this tab is representative of a unique member. Be sure that the data set you paste in is a unique list of members, void of any duplicate records.*
- Refer to the *Data Dictionary* tab for field definitions and data types.
- Columns A through IH (columns with blue headers) contain the raw member data set. These columns should be updated with the data set you want to analyze.
- Columns II through ME (columns with black headers) contain the formulas that drive the tool. These columns should not be updated unless you choose to make changes to the functionality of the tool.
  - *All formulas are protected to help avoid inadvertent changes to the formulas when pasting in raw data. If formulas need to be accessed, select "unprotect sheet" from the Review toolbar and enter the password **unlock**.*

Updating the tool with your data set

1. Verify that your data is in the same order and has the same data type (noted on the *Data Dictionary* tab) as the existing sample data on the *Inputs* tab.
   - Note: the baseline dates in the sample data are calendar years 2010 and 2011. Your data may reflect different time periods.
2. Paste your member data set into columns A – IH.
3. Verify that all formulas are working properly in columns II through ME. There should be no instances of "#REF!" in these columns.
4. If your data is divided into groups *other than* Group A and Group B, you will need to change the formula in column IS to reflect the appropriate categories.
   - Currently, the formula in column IS reads **=IF(A2="","",IF(H2=1,"Group A","Group B"))**
   - You may need to alter this to read **=IF(A2 = "","",if(h2=1, "Hospital ABC","Hospital XYZ"))**

Drop Down Lists Tab:

Understanding the *Drop Down Lists Tab*

- This tab defines what groupings or categories you wish to use to define your population.
- The values in this tab will appear in the drop down menus on the tool (see image below).

Updating your drop down lists

1. In the "Group" list in column A, update values in rows 7 and 8 to match the values in your Group_TEXT_IND field (column IS) on your *Inputs* tab.
   - If your data is divided into 'Hospital ABC' and 'Hospital XYZ', the three values in your "Group" drop-down should be 'All,' 'Hospital ABC' and 'Hospital XYZ'.
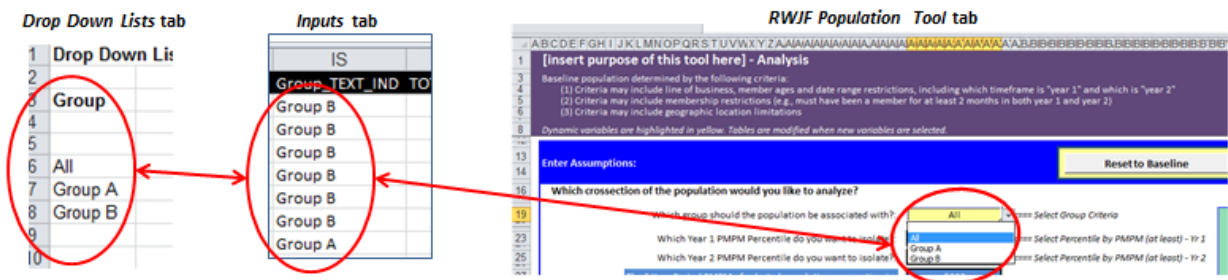
2. If your data reflects time periods other than 2010 and 2011, re-name columns C and E to reflect the time periods your data represents.
3. In the "Year" list in column M, update the years to reflect your time periods.

RWJF Population Model Tab:

1. Replace the text in cell B1 *[Insert purpose of this tool here]* with a relevant title for the tool.
2. Enter criteria in rows 4 – 6 to describe the baseline population that is included in your data set prior to applying any filters with the tool.
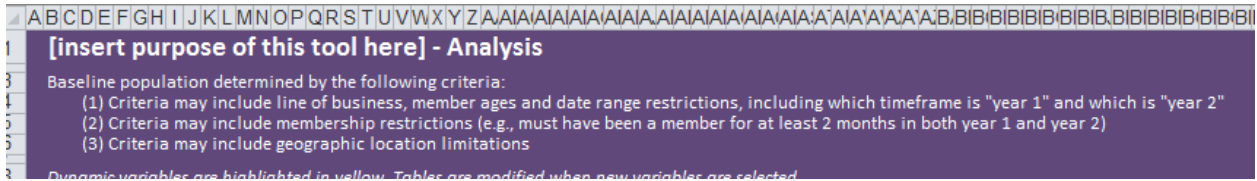
3. Update labels in the "Enter Assumptions" section to reflect the appropriate years / time periods of your data set, if desired. You can also choose to leave labels as "year 1" and "year 2" and define these terms in your criteria section.

Final Preparations for Use:

1. Lock and protect the formulas on the *Inputs* tab if they were unlocked during the updates process.
2. Hide all tabs except the RWJF Population Model tab.

Instructions for using the tool for population analysis:

Manipulation of the tool is done exclusively in the "Enter Assumptions" section (outlined in blue) of the "RWJF Population Tool" tab. Any box that is yellow or green contains a dropdown list of options the user can use to filter the population.

Enter Assumptions:		Reset to Baseline	<=== Click to Reset Criteria to Baseline Population

Which crossection of the population would you like to analyze?

Which group should the population be associated with?:	All	<=== Select Group Criteria
Which Year 1 PMPM Percentile do you want to isolate?:	40	<=== Select Percentile by PMPM (at least) - Yr 1
Which Year 2 PMPM Percentile do you want to isolate?:	30	<=== Select Percentile by PMPM (at least) - Yr 2
The 2 Year Period PMPM of selected population crossection is:	$399	

**Selected Population:
510 Members with >/= 3 Episodic Spend Months**

How would you like to further limit the population crossection based on assumptions regarding "episodic spend" members?

% the Yr 2 PMPM should be increased to set "episodic spend" threshold?:	0%	<=== Select % Markup from Yr 2 PMPM
New PMPM threshold (lower bound) that serves to identify "episodic spending":	$399	
Minimum # of Months that member spend exceeded "episodic spend" threshold:	3	<=== Select # of Months (0-24)

Monthly Episodic Spend Threshold - $399

Medical and Rx PMPM of Initial Crossection - $399

1. Click the box you wish to change. The dropdown arrow will appear when the box is selected.

2. Select the criteria you desire using the dropdowns in each box.

3. The first four criteria are used to select the **initial population cross section**.
   a. Group: Select "All," "Group A," or "Group B".
   b. Year 1 PMPM Percentile – Looks at members by cost, for example, the 90th percentile shows you the top 10 percent most expensive members based on per member per month (PMPM) costs for claims in Year 1.
   c. Year 2 PMPM Percentile – Looks at members by cost, for example, the 90th percentile shows you the top 10 percent most expensive members based on per member per month (PMPM) costs for claims in Year 2.

4. After the first four criteria are selected, the two-year period (Year 1 and Year 2) cost per member per month (PMPM) of the selected population will be displayed in the blue box. For example, $399 means that the average cost for the population is $399 per member per month.

5. Following the selection of the initial population cross section, the next step is to limit the population based on "episodic spending." This refers to those patients that have spikes in spending over the two-year period (as opposed to constant high spenders).

6. There are three criteria that are determined in the "episodic spend" section.
   a. *% Increase:* This criterion allows the user to set the level of spending that he/she considers to be an indication of "episodic spend." This is based on a percentage increase of the two-year period PMPM calculated using the first four criteria.
   b. After the user selects the *% Increase*, **the new PMPM threshold is calculated** in the orange box. This indicates the "episodic spending" threshold.
   c. *# Of Months Exceeding "Episodic Spend" Threshold*: This criterion allows the user to filter the population by how many times a member exceeded the established *"episodic spend" threshold* during the two-year period.

7. Scroll down the spreadsheet to see the demographics, utilization and cost summaries of the population that you have defined. The graphs and tables that are below the assumptions will update automatically to display information specific to the population that has been filtered by your assumptions. If you wish to start over and change your assumptions, click the *Reset to Baseline* button at the top of the *Enter Assumptions* section of the tool. This will reset all assumptions to reflect the baseline population.

EXAMPLE:

[insert purpose of this tool here] - Analysis

Baseline population determined by the following criteria:
(1) Criteria may include line of business, member ages and date range restrictions
(2) Criteria may include membership restrictions (e.g., must have been a member for at least 2 months in both year 1 and year 2)
(3) Criteria may include geographic location limitations

Dynamic variables are highlighted in yellow. Tables are modified when new variables are selected.

Enter Assumptions:

| Reset to Baseline | <=== Click to Reset Criteria to Baseline Population |

Which crossection of the population would you like to analyze?

Which [Group] should the population be associated with?:	Group A	<=== Select Group Criteria
Which 2010 PMPM Percentile do you want to isolate?:	90	<=== Select Percentile by PMPM (at least) - Yr 1
Which 2011 PMPM Percentile do you want to isolate?:	90	<=== Select Percentile by PMPM (at least) - Yr 2
The 2 Year Period PMPM of selected population crossection is:	$1,120	

Selected Population:
17 Members with >/= 2 Episodic Spend Months

How would you like to further limit the population crossection based on assumptions regarding "episodic spend" members?

| % the Yr 2 PMPM should be increased to set "episodic spend" threshold?: | 20% | <=== Select % Markup from Yr 2 PMPM |
| New PMPM threshold (lower bound) that serves to identify "episodic spending": | $1,344 | |
| Minimum # of Months that member spend exceeded "episodic spend" threshold: | 2 | <=== Select # of Months (0-24) |

Monthly Episodic Spend Threshold - $1,344

Medical and Rx PMPM of Initial Crossection - $1,120

What are the demographics of the selected population?

Total Members:	17
Average Age of Population:	15.76
% Female:	47.06%
Population Yr 1 - Yr 2 Medical & Rx PGA:	$677,824
Total Member Months:	407

Type	PMPM 2010	PMPM 2011	Δ	2 YR Period Total
Medical	$ 851	$ 878	$ 27	$ 864
Rx	$ 731	$ 871	$ 141	$ 801
Med + Rx Total	$ 1,581	$ 1,749	$ 168	$ 1,665
Behavioral Health (CCBH)	$ 580	$ 408	$ (172)	$ 494
Grand Total	$ 2,161	$ 2,157	$ (4)	$ 2,159

Members Exceeding Established Threshold

N= 14
N= 17
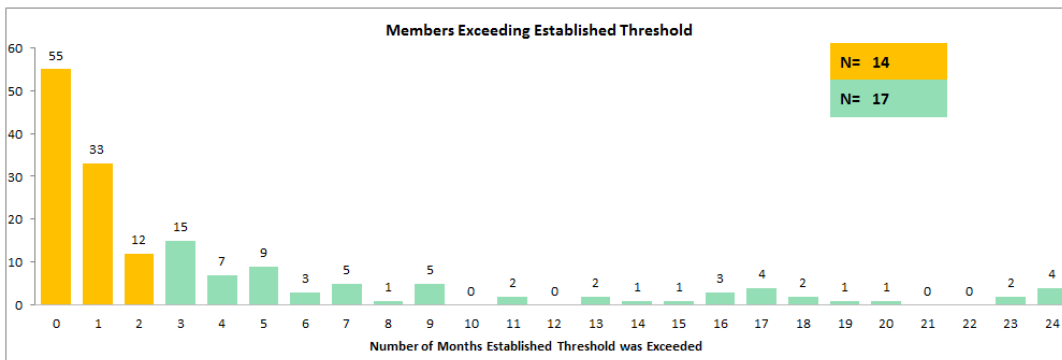
What types of services does the selected population utilize?

UPMC HP Financial Service Type	PMPM 2010	PMPM 2011	% 2011 $	Δ	% Δ	Annual Units / 1,000 2010	2011	Δ	% Δ
Inpatient Facility - Medical Surgical	$ 181.63	$ 131.49	7.52%	$ (50.14)	-27.61%	650	294	(356)	-54.77%
Inpatient Facility -Skilled Nursing	$ -	$ -	0.00%	$ -		0	0	0	
Inpatient Facility - Rehabilitation	$ 27.64	$ -	0.00%	$ (27.64)	-100.00%	118	0	(118)	-100.00%
Inpatient Facility - Other	$ -	$ -	0.00%	$ -		0	0	0	
Observations	$ 17.05	$ 72.08	4.12%	$ 55.03	322.75%	177	471	293	165.36%
Emergency Room	$ 44.52	$ 60.99	3.49%	$ 16.47	37.00%	1,360	2,059	699	51.43%
Outpatient Surgery	$ 19.59	$ 25.24	1.44%	$ 5.66	28.87%	296	471	175	59.22%
Outpatient Facility - Other	$ 1.59	$ 7.54	0.43%	$ 5.95	374.83%	532	1,588	1,056	198.53%
Therapy Services	$ 12.94	$ 7.93	0.45%	$ (5.02)	-38.77%	4,315	3,118	(1,198)	-27.75%
Diagnostics - Lab services	$ 12.75	$ 11.84	0.68%	$ (0.90)	-7.09%	3,901	2,588	(1,313)	-33.66%