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# Project 7: Find calendar year population estimates

# Project 7

We want to look at a calendar year population estimates of health care instead of collection year. We'll calculate the health care means by age group for the US population in 2012

In this project you will:

- ▶ Learn about calendar year versus collection year in CE
- ▶ Calculate calendar year population estimates using the PQ/CQ variables
- ▶ Calculate calendar year population estimates using the MTBI file

# Calendar Estimates

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Two Main Differences:

- Use 5 quarters of data, but only select months that fall in the calendar year (Numerator)
- Population weights are adjusted based on the number of months in the calendar year the CU could report (Denominator)

# EXPENDITURES

# Sumvars – focus on calendar year expenditures

Quarter 1 (fmli121x)					
Oct 2011	Nov 2011	Dec 2011	Jan 2012	Feb 2012	March 2012
PQ	PQ	PQ	INT		
	PQ	PQ	CQ	INT	
		PQ	CQ	CQ	INT

# Sumvars – focus on calendar year expenditures

Quarter 1 (fmli121x)					
Oct 2011	Nov 2011	Dec 2011	Jan 2012	Feb 2012	March 2012
PQ	PQ	PQ	INT		
	PQ	PQ	CQ	INT	
		PQ	CQ	CQ	INT

Use only expenditures falling in 2012:  
CQ (Current Quarter) variables

# Sumvars – focus on calendar year expenditures

Quarter 5 (fmli131)					
Oct 2012	Nov 2012	Dec 2012	Jan 2013	Feb 2013	March 2013
PQ	PQ	PQ	INT		
	PQ	PQ	CQ	INT	
		PQ	CQ	CQ	INT

# Sumvars – focus on calendar year expenditures

Quarter 5 (fmli131)					
Oct 2012	Nov 2012	Dec 2012	Jan 2013	Feb 2013	March 2013
PQ	PQ	PQ	INT		
	PQ	PQ	CQ	INT	
		PQ	CQ	CQ	INT

Use only expenditures falling in 2012:  
PQ (Previous Quarter) variables

# Sumvars – focus on calendar year expenditures

Quarter 2 (fmli122)					
Jan 2012	Feb 2012	March 2012	April 2012	May 2012	June 2012
PQ	PQ	PQ	INT		
	PQ	PQ	CQ	INT	
		PQ	CQ	CQ	INT

Use only expenditures falling in 2012:  
CQ and PQ variables  
CQ + PQ

Quarters 3 and 4 are analogous.

# POPULATION

# Population Weights

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- Need another adjustment to FINLWT21
  - ▶ Weight the weights based on the number of months that could have been included
  - ▶ MO\_SCOPE: “Months in Scope”

# MO\_SCOPE

Quarter 1 (fmli121x)					
Oct 2011	Nov 2011	Dec 2011	Jan 2012	Feb 2012	March 2012
			0		
			X	1	
			X	X	2

Quarter 5 (fmli131)					
Oct 2012	Nov 2012	Dec 2012	Jan 2013	Feb 2013	March 2013
X	X	X	3		
	X	X		2	
		X			1

# MO\_SCOPE

Quarter 2 (fmli122)					
Jan 2012	Feb 2012	March 2012	April 2012	May 2012	June 2012
X	X	X	3		
	X	X	X	3	
		X	X	X	3

Quarters 3 and 4 are analogous.

# Population Weights

- Multiply by MO\_SCOPE / 3
- Still need to adjust to account for quarterly weights, so divide by 4.
- ...wait – did you say 4?? But I'm using 5 quarters?!

Yes...but you're really only using 1/3 of the first quarter and 2/3 of the fifth quarter. So, dividing by 4 is easier then saying divide by:

$$(1/3)*1 + 1 + 1 + 1 + (2/3)*1 = 4$$

# Putting it all together - Quick Guide to adjusting population weights

Fmli121x	$popweight = finlwt21 [(qintrvmo-1) / 3] / 4$
Fmli122	$popweight = finlwt21 (3/3) / 4$
Fmli123	$popweight = finlwt21 (3/3) / 4$
Fmli124	$popweight = finlwt21 (3/3) / 4$
Fmli131	$popweight = finlwt21 [(4-qintrvmo) / 3] / 4$

# Project 7 Steps

1. Append "quarter 5" (2013Q1) to the data
2. Create calendar year health expenditures:
  - ▶ For 2012 Q1 (QINTRVYR in 2012 and QINTRVMO in 01, 02, 03),  
 $HEALTH = HEALTHCQ$
  - ▶ For 2013 Q1 (QINTRVYR in 2013 and QINTRVMO in 01, 02, 03),  
 $HEALTH = HEALTHPQ$
  - ▶ For all other quarters:  $HEALTH = HEALTHPQ + HEALTHCQ$
3. Multiply health expenditures by FINLWT21
4. Create population weights with months in scope considered (see previous slide)
5. Aggregates: Sum the weighted estimates by each group
6. Populations: Sum the population weights by each group
7. Means: Calculate annual means for each of the group by
  - ▶ Divide the aggregates by the populations

# Project 7 Results

## Means

	AGEGROUP	HEALTH_MEAN_CAL	HLTHINS_MEAN_CAL
1.	34 & Under	1625.795	1004.398
2.	35 to 64	3474.227	2050.230
3.	65 & Up	4907.093	3189.104

# Helpful reminders

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- Once you know what time period the variable covers...you can figure out how to weight and aggregate it.
  - ▶ E.g. Quarterly? Annually? Weekly?
  - ▶ It's always helpful to adjust to a quarterly amount and then follow the examples above.
- If you don't have a way to eliminate months outside the calendar year, then you use MO\_SCOPE.