

Example of Sample Survey that focused on both region-specific and aggregate parameter values.

What proportion of each regional sub-population of Quebec had an "examen en cabinet" or received psychiatric treatment in 1989? What were the corresponding overall proportions?

Data from RAMQ: Statistiques Annuelles

Estimates of the region-specific proportions and the overall based on observed proportions in random samples of n = 30,000 persons (cardholders) per region

<u>Region</u>	psychiatric rx		"examen en cabinet"	
	<u>estimate</u>	<u>SE</u>	<u>estimate</u>	<u>SE</u>
Bas-Saint-Laurent -- Gaspésie	0.042 (4.2%)	0.0011 [¶] (0.11%)	0.575 (57.5%)	0.0011 (0.11%)
Montréal métropolitain	0.082 (8.2%)	0.0016 (0.16%)	0.734 (73.4%)	(0.xxx) (x.xx%)
...				
...				
Ensemble du Québec (based on n = 339,000)	0.068 (6.8%)	§	0.713 (71.3%)	§

$$^{\text{¶}} \text{SE} = 0.0011 = \sqrt{\frac{0.042 [1 - 0.042]}{30000}} \quad 95\% \text{ CI} (): p \pm 1.96\text{SE}(p)$$

§ estimate is a population-weighted average of the region-specific estimates, and so SE is $\sqrt{\sum w^2 \text{SE}^2}$ where the sum is over all regions.