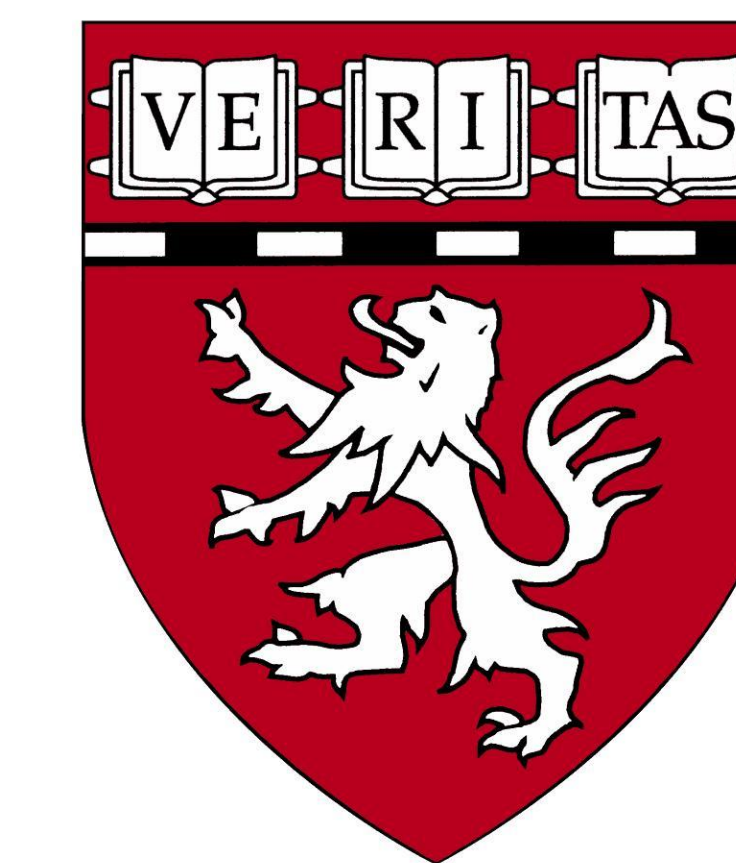




# Comparing a Sample of 25 Patients to a Provider's Full Panel: Is It Representative?

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## OBJECTIVE

Determine whether 25 patients are a representative sample of a provider's patient population.

## METHODS

We implemented an education program in 2013 for PCPs in four select practices. We analyzed diabetes-related clinical parameters in all patients followed by these PCPs as well as in a sample composed of the most recent 25 patients seen by each provider. The parameters included blood pressure (BP), LDL cholesterol (LDL-C), hemoglobin A1c (HbA1c), and body mass index (BMI). We analyzed the differences between means using two comparison techniques. In technique #1, we evaluated the difference between the means of the full patient panel (excluding the 25-patient sample) and the 25-patient sample. We hypothesized that the confidence interval of the difference would include 0, indicating that the 25-patient sample is representative of the full patient panel. In technique #2, we looked at the mean of the 25 patient sample, and hypothesized that the confidence interval of the sample mean would include that of the full patient panel (including the 25-patient sample) making the sample representative of the full patient panel.



- Clinic #1 - 3553 Patients / 29 Providers
- Clinic #2 - 338 Patients / 7 Providers
- Clinic #3 - 939 Patients / 11 Providers
- Clinic #4 - 3732 Patients / 19 Providers

Figure 1. Locations of Participating Clinics

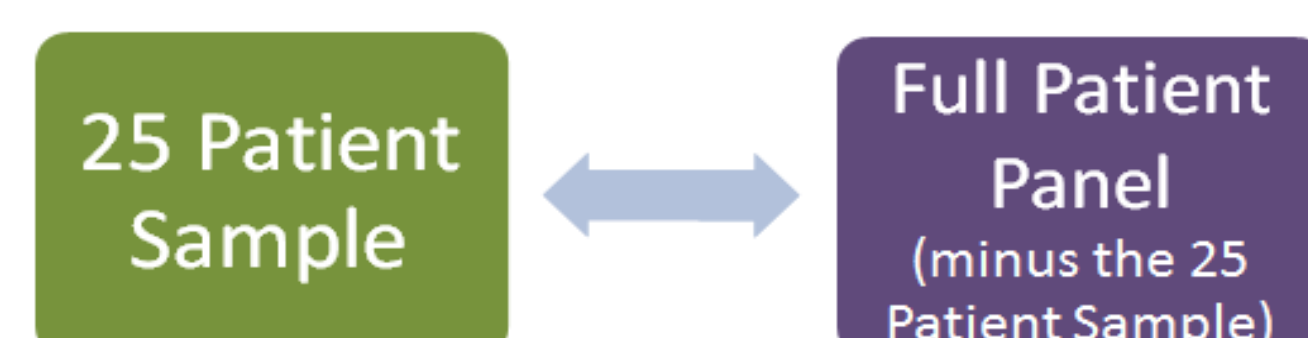


Figure 2. Comparison Technique #1  
The 25 Patient Sample is not included in the Full Patient Panel.

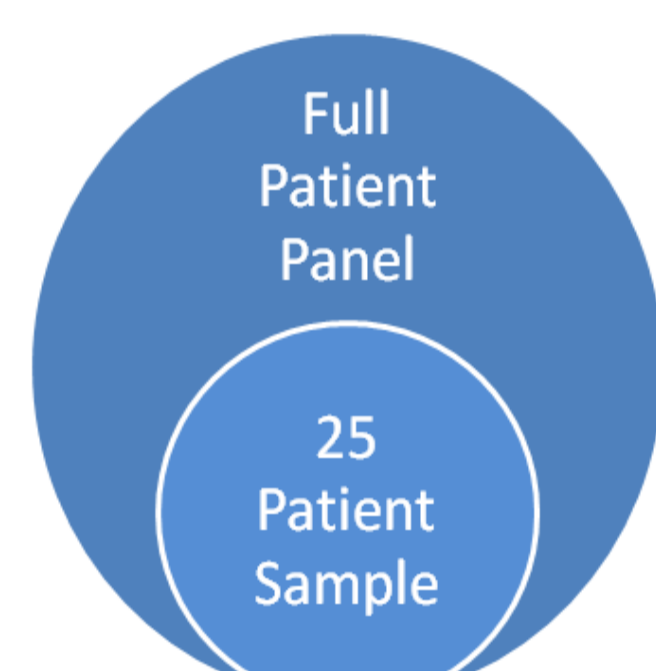


Figure 3. Comparison Technique #2  
The 25 Patient Sample is included in the Full Patient Panel.

## RESULTS

Table 1. Univariate Analysis of Patient Clinical Measures

	All Clinic Patients		Clinic #1		Clinic #2		Clinic #3		Clinic #4	
	Full Panel Mean ± SD	25 Patient Sample Mean ± SD	Full Panel Mean ± SD	25 Patient Sample Mean ± SD	Full Panel Mean ± SD	25 Patient Sample Mean ± SD	Full Panel Mean ± SD	25 Patient Sample Mean ± SD	Full Panel Mean ± SD	25 Patient Sample Mean ± SD
n	8562	1600	3553	725	338	150	939	275	3732	450
Gender (% female)	48.4	49.9	45.5	46.5	45.3	46.0	59.4	60.4	48.6	50.4
Age	59.3 ± 10.4	59.6 ± 10.2	58.9 ± 10.5	59.3 ± 10.2	58.4 ± 10.5	58.3 ± 10.3	59.7 ± 10.7	60.0 ± 11.3	59.7 ± 10.2	60.2 ± 9.5
Weight (kg)	100.7 ± 25.1	101.4 ± 25.4	102.5 ± 25.7	103.1 ± 26.4	95.7 ± 21.9	96.2 ± 21.5	102.6 ± 24.6	102.5 ± 25.9	99.0 ± 24.8	99.9 ± 24.3
BMI	34.9 ± 7.9	35.3 ± 8.0	35.3 ± 8.2	35.6 ± 8.1	34.0 ± 6.9	34.3 ± 7.6	36.3 ± 8.2	36.4 ± 8.0	34.2 ± 7.5	34.6 ± 7.8
SBP (mm Hg)	128.1 ± 15.9	128.6 ± 16.1	127.7 ± 15.6	128.5 ± 15.9	134.1 ± 19.3	133.4 ± 17.6	129.4 ± 16.5	128.2 ± 16.6	127.6 ± 15.6	127.3 ± 15.3
DBP (mm Hg)	75.1 ± 10.1	75.1 ± 9.8	74.6 ± 9.9	74.6 ± 9.9	78.6 ± 8.3	78.4 ± 7.4	75.0 ± 9.9	75.0 ± 10.3	75.2 ± 10.3	74.7 ± 9.7
LDL (mg/dL)	96.3 ± 40.5	96.1 ± 38.0	94.3 ± 33.3	94.9 ± 32.9	98.3 ± 34.6	95.4 ± 30.7	103.0 ± 74.6	101.0 ± 58.8	96.2 ± 34.3	95.3 ± 31.2
A1c (%)	7.3 ± 1.5	7.3 ± 1.5	7.3 ± 1.6	7.2 ± 1.5	8.2 ± 1.6	8.1 ± 1.5	7.3 ± 1.4	7.2 ± 1.2	7.2 ± 1.5	7.2 ± 1.4

Table 2. Comparison Technique #1 – Variables in Which the 25 Patient Sample Differs from the Full Patient Panel

Parameter	Sample	Difference Estimate ± SE	Confidence Interval
Age	All Clinic Patients	-0.6 ± 0.3	-1.2 – -0.05
A1c (%)	Clinic #3	0.2 ± 0.1	0.03 – 0.4

Table 3. Comparison Technique #2 – Variables in Which the 25 Patient Sample Differs from the Full Patient Panel

Parameter	Sample	Population Mean	25 Patient Sample Confidence Interval
BMI	All	34.88	34.91 – 35.75

## CONCLUSIONS

In our analysis, the 25 most recent patients seen by participating providers did constitute a representative sample of their entire patient population for most of the clinical parameters analyzed, using either of two comparison techniques. The results for only a few variables differed between the patient sample and the full patient panel, depending on the comparison technique utilized. We consider that these differences may not be clinically meaningful.

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