



# Economic Burden of Immigrants: When to Say No?

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# Purpose

To **assess** Canadian **immigration decisions** that preclude admission on grounds of **medical inadmissibility** due to **excessive demand** on Canadian health or social services.

# Canadian Immigration Legislation

Section 38(1) of the Canadian Immigration and Refugee Protection Act (IRPA) of 2001 states:

“A foreign national is inadmissible on health grounds if their health condition (a) is likely to be a danger to public health; (b) is likely to be a danger to public safety; or (c) might reasonably be expected to cause **excessive demand** on health or social services.”

# Canadian Threshold for Excessive Demand

Sub-section 1(1) of the Regulations to the IRPA of 2001:

“(a) a demand.....[which].....would likely exceed average Canadian per capita health services and social services costs over a period of five consecutive years immediately following the most recent medical examination required by these Regulations, unless there is evidence that significant costs are likely to be incurred beyond that period, in which case the period is no more than 10 consecutive years; or

(b) a demand...[which].....would add to existing waiting lists and would increase the rate of mortality and morbidity in Canada as a result of the denial or delay in the provision of those services to Canadian citizens or permanent residents.”

# Canadian Health Cost Threshold

Application of the Regulations yields:  
an annual excessive demand threshold for health costs of \$4,867.40 in 2007; and a five-year threshold of \$24,337.

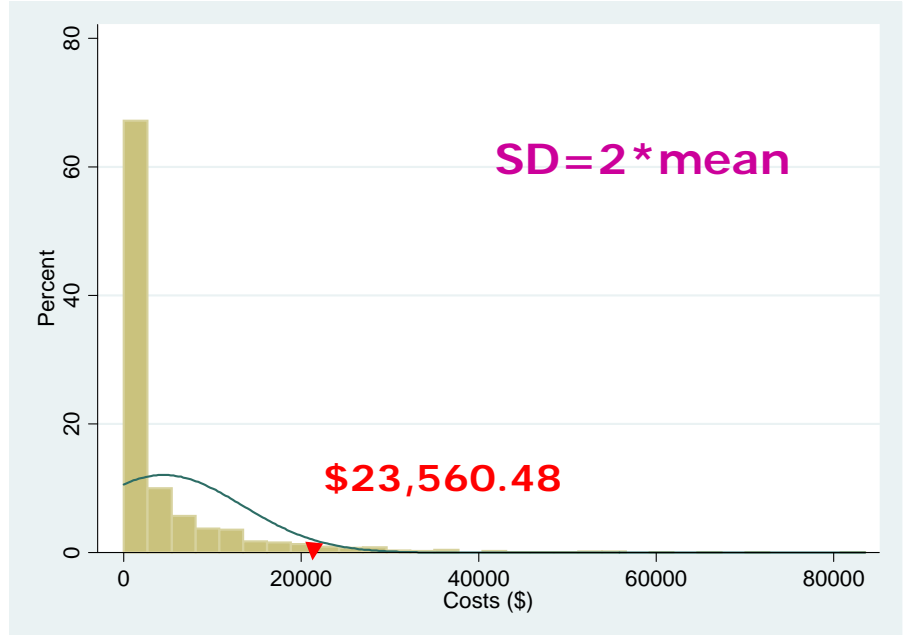
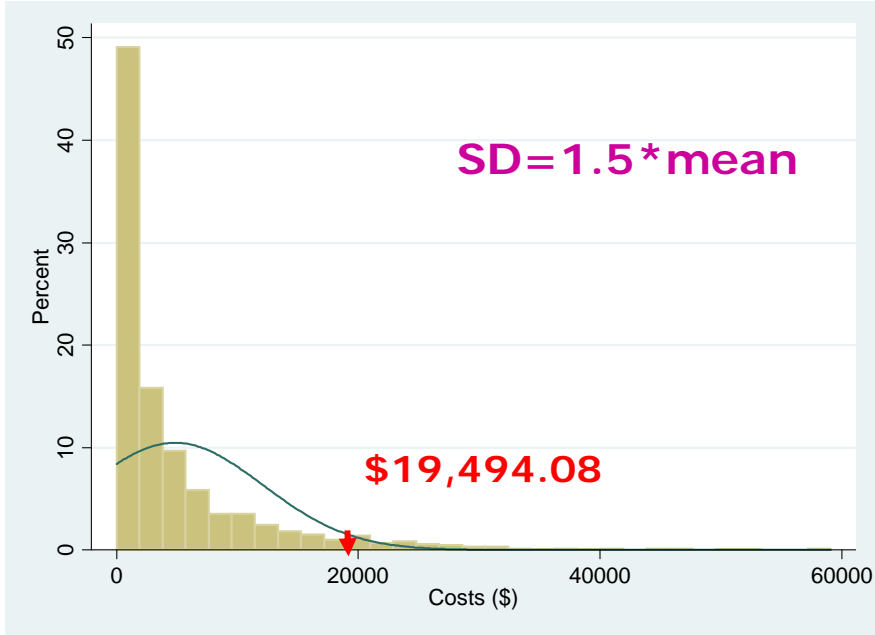
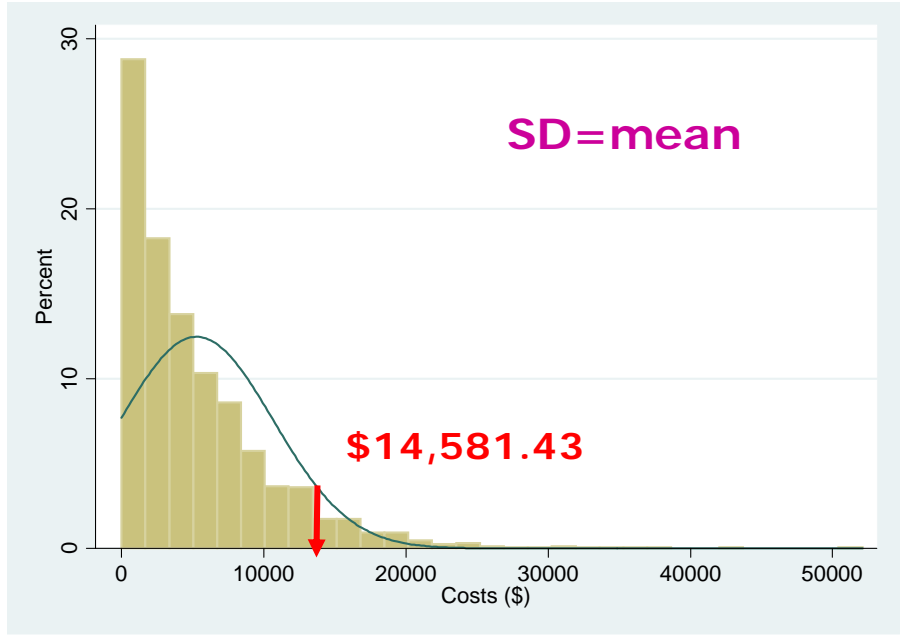
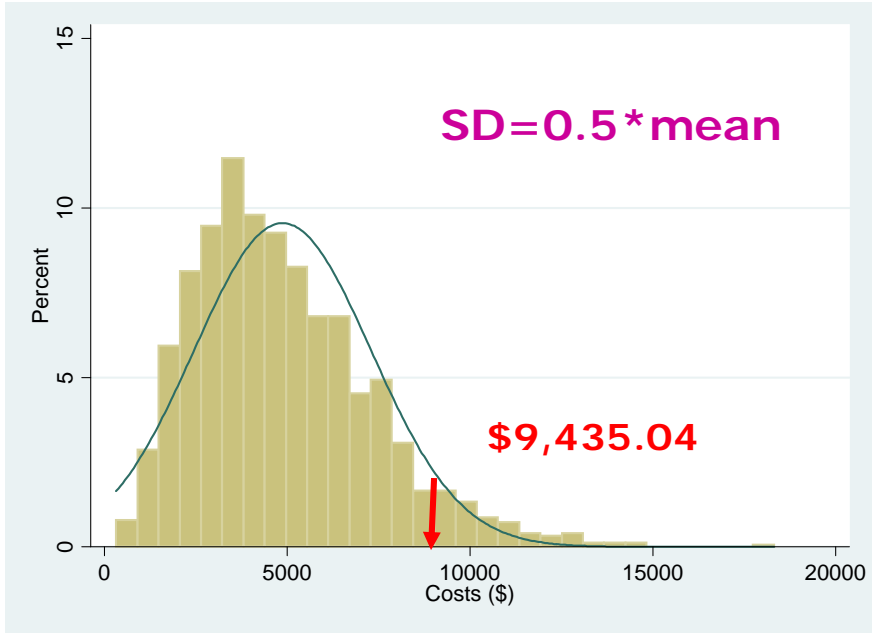
# “Excessive” Demand

- To test whether an immigrant represents an “excessive” demand on Canadian health or social services, we need to know (a) the distribution of Canadian health care costs; and (b) the cost profile of the prospective immigrant.
- “Excessive” is defined as a cost profile that is statistically greater than that for Canadians.
- We construct a statistical test to measure how large costs need to be before a prospective immigrant’s cost profile is deemed to be “excessive”, ie statistically different from that for Canadians.

# Distribution of Health Care Costs

- While average health care costs are known, neither the variance of costs nor the shape of the cost distribution are known (with certainty).
- A distribution that is consistent with observed health care costs is the Gamma distribution.
- For this distribution, once average costs are known, the shape of the distribution is defined by the relative variance in costs: a low relative variance yields observations concentrated around the average, while observations are more dispersed when the relative variance is high.

# Gamma Distribution:



## Thresholds for “Excessive” Demand

		<b>Threshold \$</b>
<b>Relative Variance (or Coefficient of Variation, CV = <math>\sigma / \mu</math>)</b>	<b>0.0</b>	\$ 4,867.40
	<b>0.5</b>	\$ 9,435.04
	<b>1.0</b>	<b>\$14,581.43</b>
	<b>1.5</b>	\$19,494.08
	<b>2.0</b>	\$23,560.48

# Thresholds for “Excessive” Demand Contingent on the Distribution and Relative Variance of Costs and Significance Levels

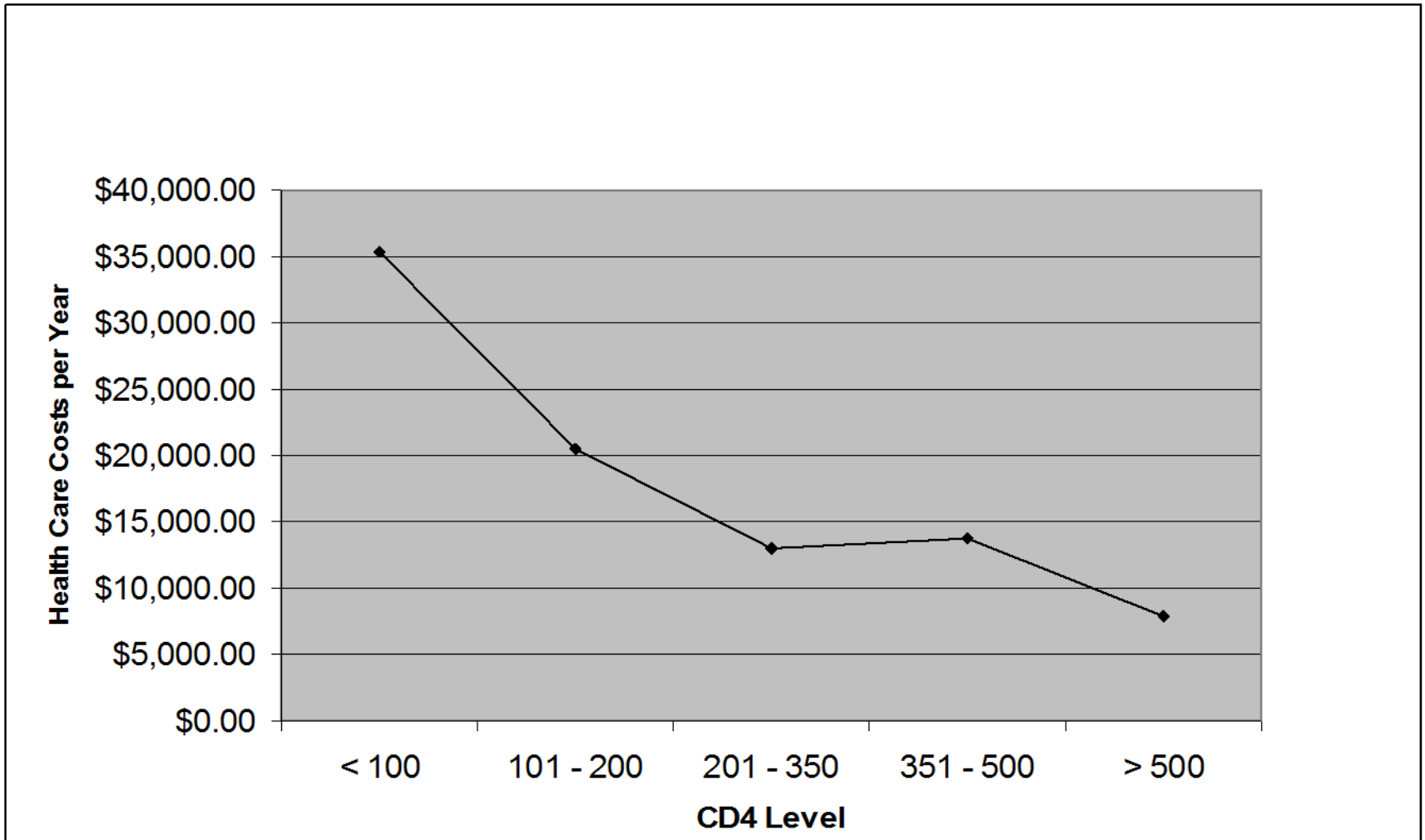
		Cost Threshold in 2007 C\$					
		Normal Distribution			Gamma Distribution		
		2 percent	5 percent	10 percent	2 percent	5 percent	10 percent
<b>Relative Variance (or Coefficient of Variation, CV = <math>\sigma / \mu</math>)</b>	<b>0</b>	4,867.40	4,867.40	4,867.40	4,867.40	4,867.40	<b>4,867.40</b>
	<b>0.5</b>	9,866.22	8,870.84	7,987.40	11,054.01	9,435.04	8,129.51
	<b>1</b>	14,865.04	12,874.27	11,107.41	19,041.38	<b>14,581.43</b>	11,207.60
	<b>1.5</b>	19,863.86	16,877.71	14,227.41	27,879.94	19,494.08	13,483.14
	<b>2</b>	24,862.68	20,881.15	17,347.41	<b>36,739.56</b>	23,560.48	14,609.86

## **Disease Progression and Monthly Health Care Costs**

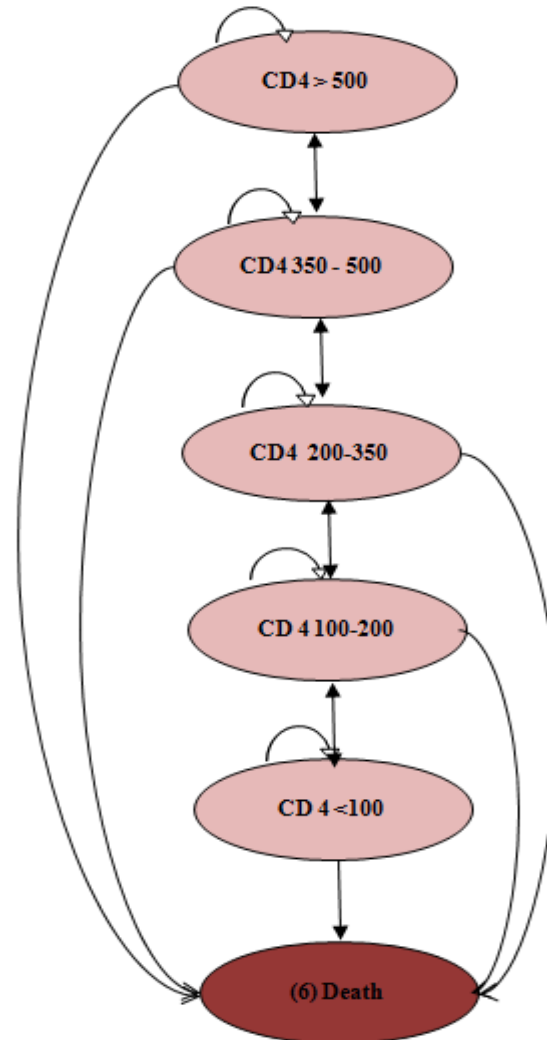
Only nine studies met the following inclusion criteria:

1. Peer-reviewed publications in English;
2. Original, patient-level data yielding mean monthly or annual direct medical cost estimates of treating people with HIV, where anti-retroviral medication was included as routine clinical practice; and
3. Medical cost estimates stratified by CD4 cell count.

# Disease Progression and Average Annual Health Care Costs in 2007 US Dollars



# Health-State Transition Model for HIV+ Individuals



# Present Value of Health Costs by Sex, CD4 Cell Counts and Time Horizon in 2007 Canadian Dollars for an Immigration Applicant Aged 30-Years

	Males			Females		
Baseline CD4	5-Year	10-Year	Lifetime	5-Year	10-Year	Lifetime
>500	\$36,151	\$71,384	\$183,612	\$36,339	\$72,263	\$205,176
351-500	\$55,945	\$100,969	\$222,100	\$56,320	\$102,503	\$247,959
201-350	\$55,562	\$104,361	\$233,254	\$56,055	\$106,477	\$264,464
101-200	\$85,181	\$155,631	\$311,042	\$86,263	\$160,089	\$356,852
<100	\$142,023	\$248,953	\$437,669	\$144,725	\$259,282	\$508,296

## Present Value of the Threshold (\$14,581.43/yr) for “Excessive” Demand by Sex, Time Horizon, and the Age of Immigration Applicants in 2007 Canadian Dollars

	Males			Females		
Age	5-Year	10-Year	Lifetime	5-Year	10-Year	Lifetime
<b>30 years</b>	\$68,892	\$130,702	\$441,832	\$68,958	\$130,982	\$468,558
<b>40 years</b>	\$68,793	\$130,175	\$383,757	\$68,880	\$130,593	\$414,254
<b>50 years</b>	\$68,483	\$128,595	\$316,614	\$68,676	\$129,568	\$351,073

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## Conclusions

- The **current threshold** used by Immigration Canada is **unreasonably low**. A **statistically more appropriate threshold** is almost **threefold higher**.
- Based on a **more appropriate threshold** for “excessive demand” and **evidence-informed** estimates of the **cost of HIV**, many prospective immigrants would have the chance to come to Canada instead of being denied admission.
- **Prospective immigrants** with HIV will face a greater chance of being denied admission if their CD4 cell counts were low.



Humanistically-Informed Scientists &  
Scientifically-Informed Humanists.

**Thank you!**

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