

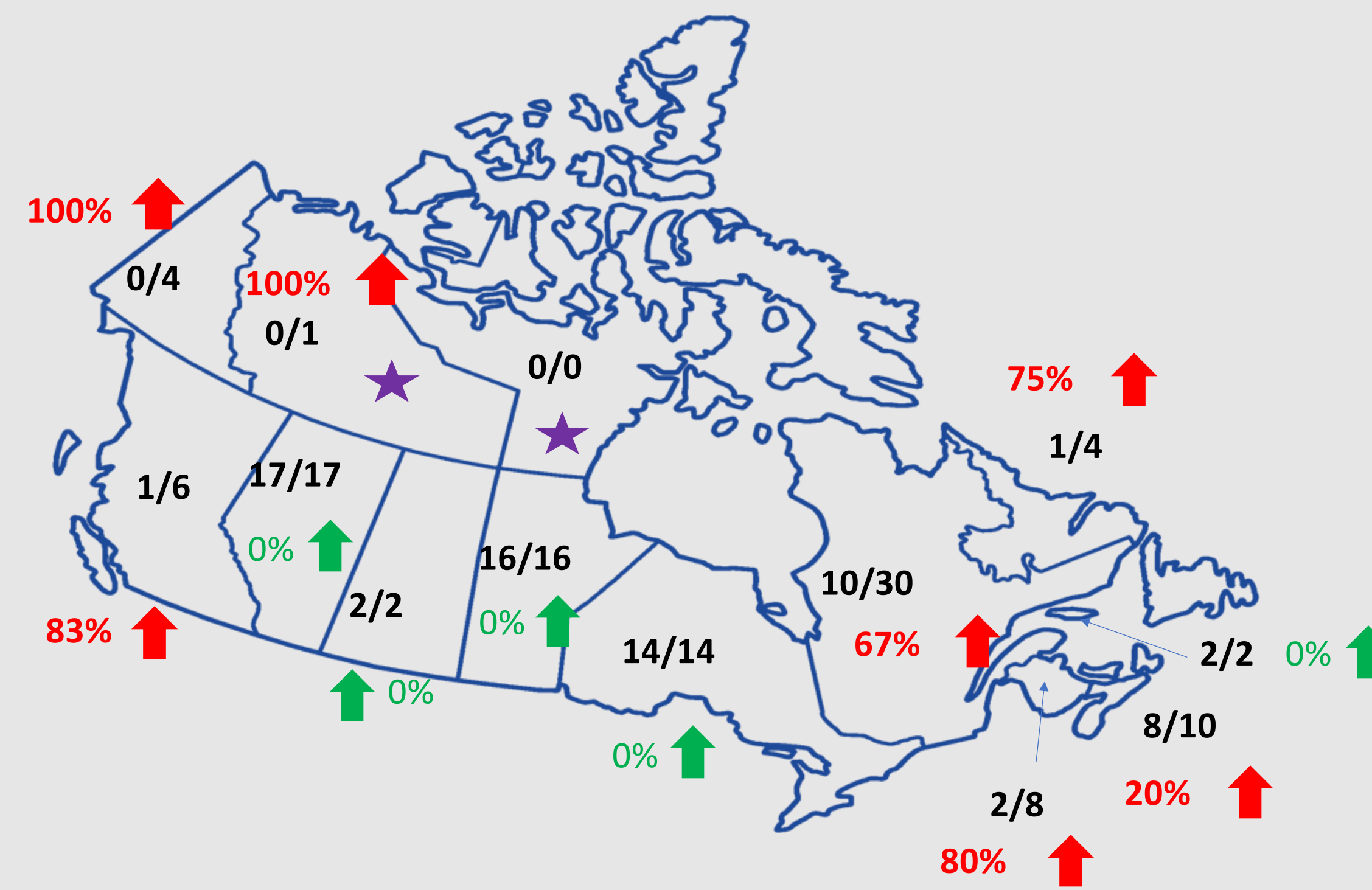
The cost of failed first-line cancer treatment due to smoking in Canada

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Background and Objective

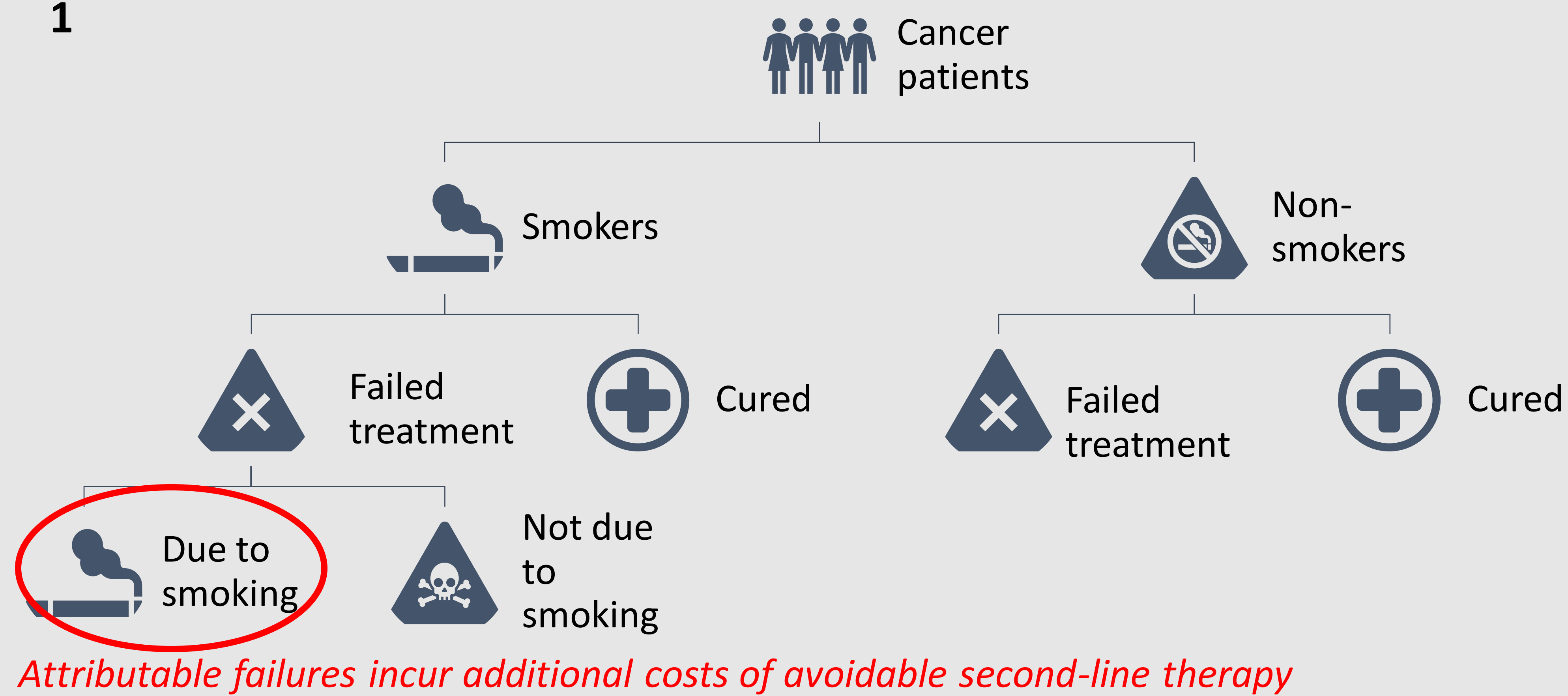
- Smoking reduces the effectiveness of first-line cancer treatment
- There is a strong economic case for smoking cessation programs in cancer treatment centres across Canada
- This study estimates the cost attributed to failed first-line treatment in new cancer patients due to continued smoking in Canada



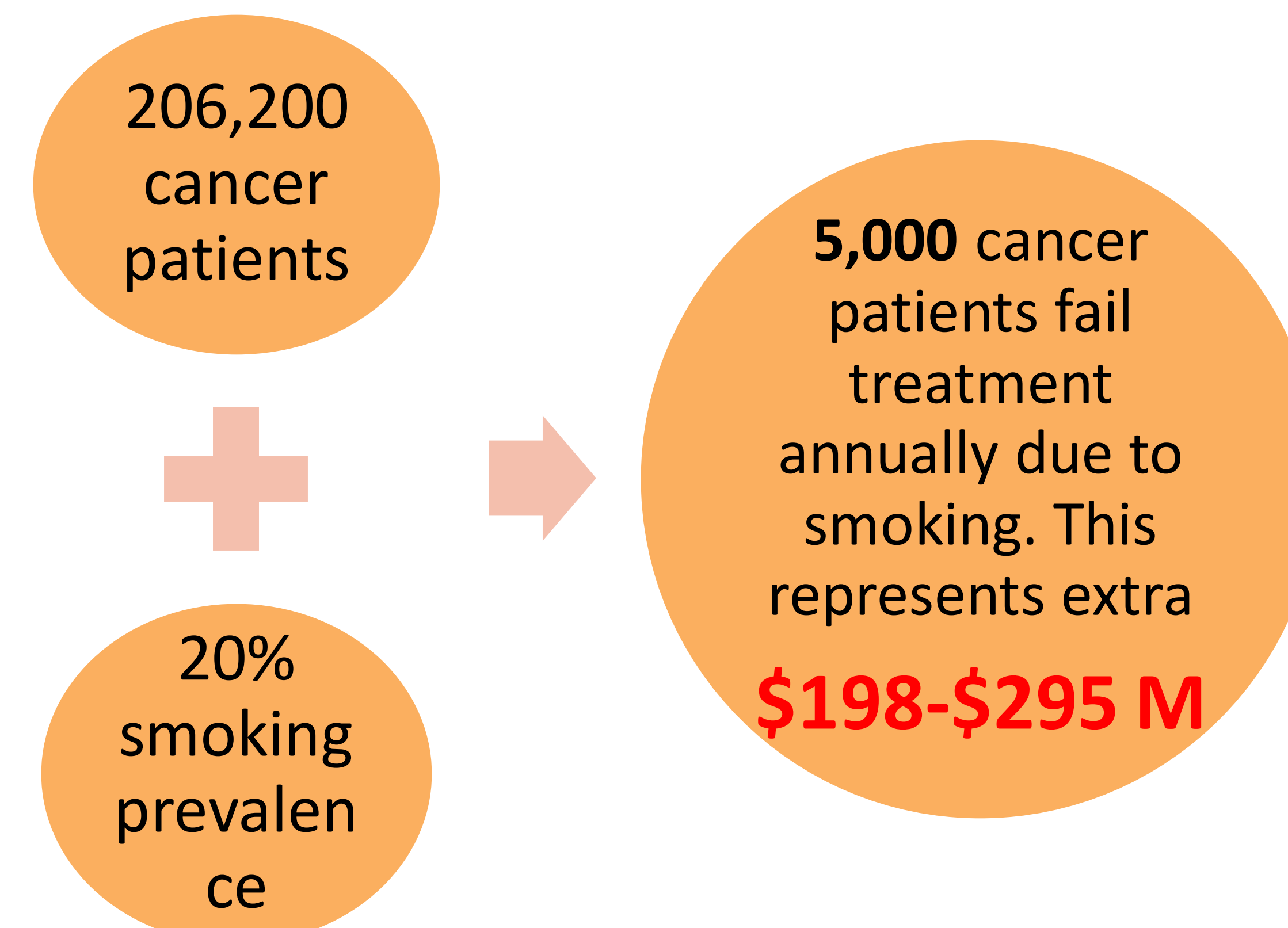
- ★ Cancer patients mainly receive outpatient cancer care in the southern provinces
- ▲ % increase required to reach full implementation of smoking cessation programs

Methods and results

- A risk model was developed to estimate the failure of first-line cancer treatment due to smoking (attributable failures) in an overall annual incident cancer cohort **1**



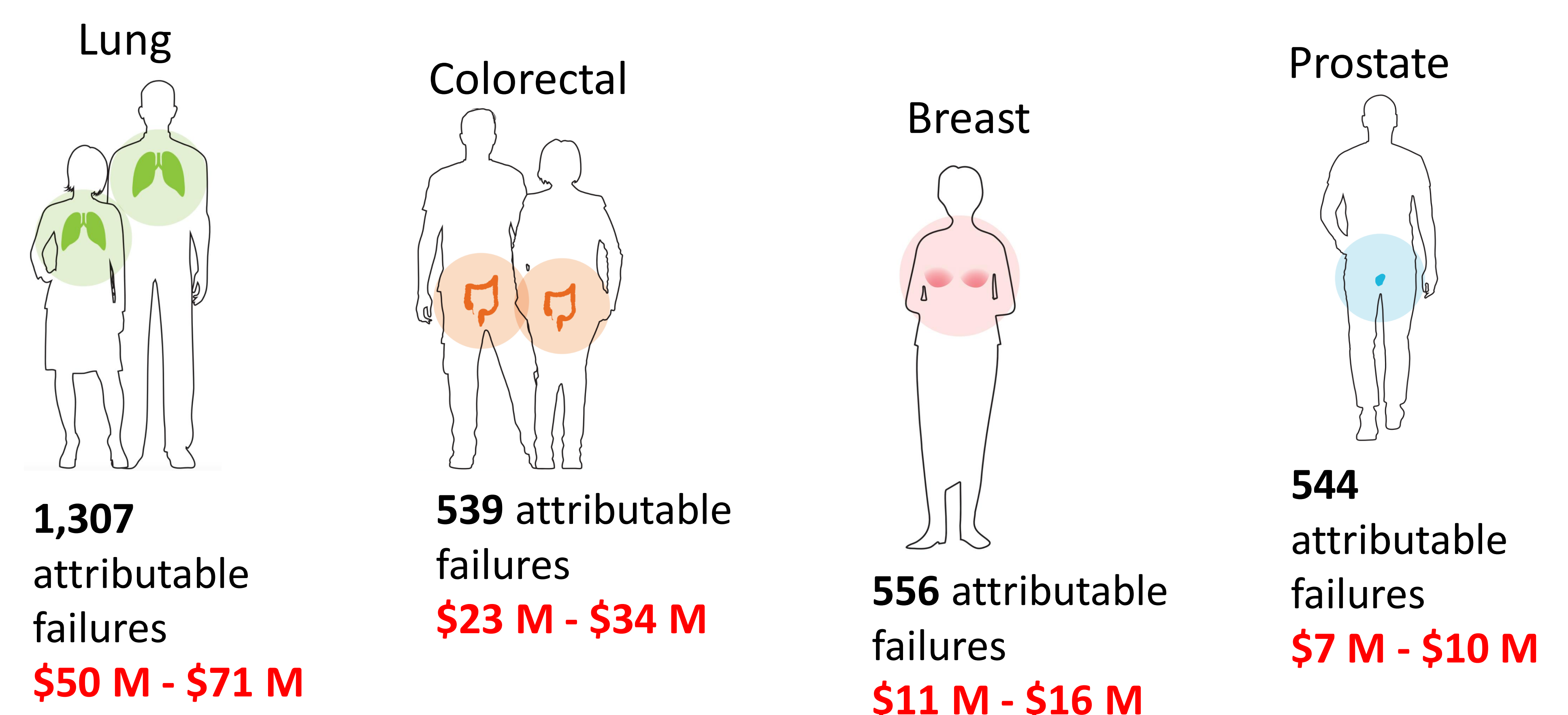
All-cancer attributable failures and costs



Cost of second-line cancer treatment failure using initial and terminal phase estimates (in 2017 CAD) **2**

Parameter	Second-line treatment costs assumed equal to:	Value
Average cost of treating cancer patients who failed first-line treatment	Initial-phase	\$41,420
	Terminal phase	\$61,671
Average cost of treating lung cancer patients who failed first-line treatment	Initial-phase	\$ 23,957
	Terminal phase	\$ 58,570
Average cost of treating breast cancer patients who failed first-line treatment	Initial-phase	\$ 13,188
	Terminal phase	\$ 45,357
Average cost of treating colorectal cancer patients who failed first-line treatment	Initial-phase	\$ 27,972
	Terminal phase	\$ 54,589
Average cost of treating prostate cancer patients who failed first-line treatment	Initial-phase	\$ 7,951
	Terminal phase	\$ 44,222

Attributable failures and costs per cancer type



Implications

- A reduction in smoking prevalence among cancer patients by 5 percentage points can achieve between \$50-\$74 million (CAD) in cost savings, annually



References

- Warren GW, Cartmell KB, Garrett-Mayer E, Salloum RG, Cummings KM. (in press). Attributable failure of first-line cancer treatment and incremental costs associated with smoking by patients with cancer. JAMA Network Open. 2019.
- De Oliveira C, Pataky R, Bremner KE, Rangrej J, Chan KK, Cheung WY, et al. Estimating the Cost of Cancer Care in British Columbia and Ontario: A Canadian Inter-Provincial Comparison. Health Policy. 2017;12(3):95-108.

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