

Canadian Healthcare Trends

Population Growth, Aging & Lifestyle

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Healthcare Funding Models

Funding Models

G - Government – federal, province, state, municipal taxes

N - National insurance – payroll taxes, premiums

M - Mandated insurance – must purchase basic coverage

P - Private insurance

OOP – Out-of-pocket

Canada use G model for about 70% of healthcare costs

15% private insurance + 15% OOP

Canadian Public Healthcare Plan

Each Province has own plan:

- Some funding from Federal Gov't
- Portable between provinces
- Covers core medically necessary hospital, physician, diagnostics and in-hospital drugs and supplies
- Also para-medicals, drugs for seniors etc ...
- **No extra billings, maximums nor deductibles for core services**
- Most hospitals publicly owned
- Physicians -mostly private and fee for service basis

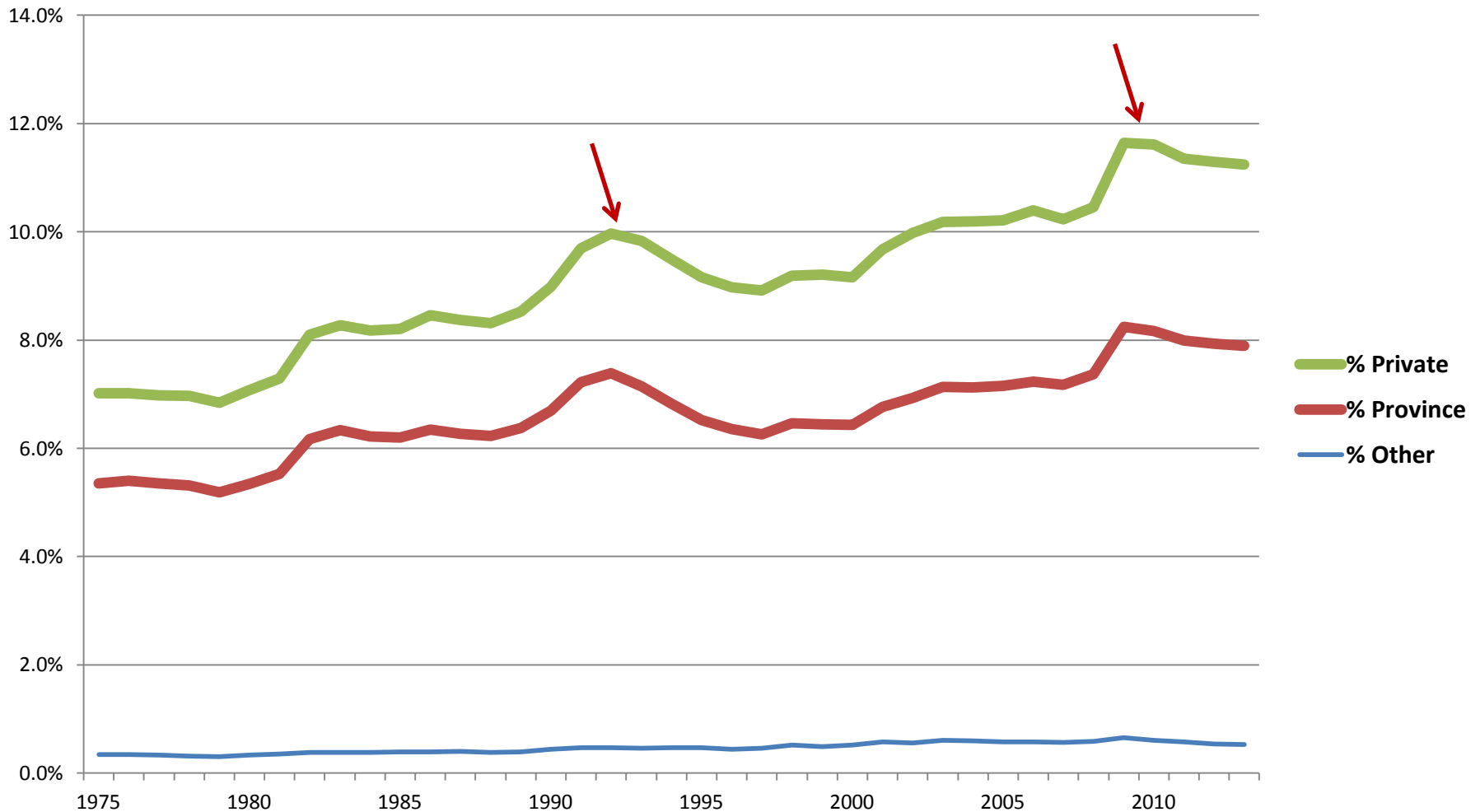
Provincial Healthcare Costs

2013 Split of provincial healthcare costs (70% of Total)

Hospitals	41%
Other institutions	11%
Physicians + other prof	23%
Drugs O/S hospitals	8%
Capital costs , public health, admin, etc ...	17%

Canadian Healthcare Costs

Healthcare Costs as % GDP



Canadian Healthcare Costs

All Healthcare expenses – public + private

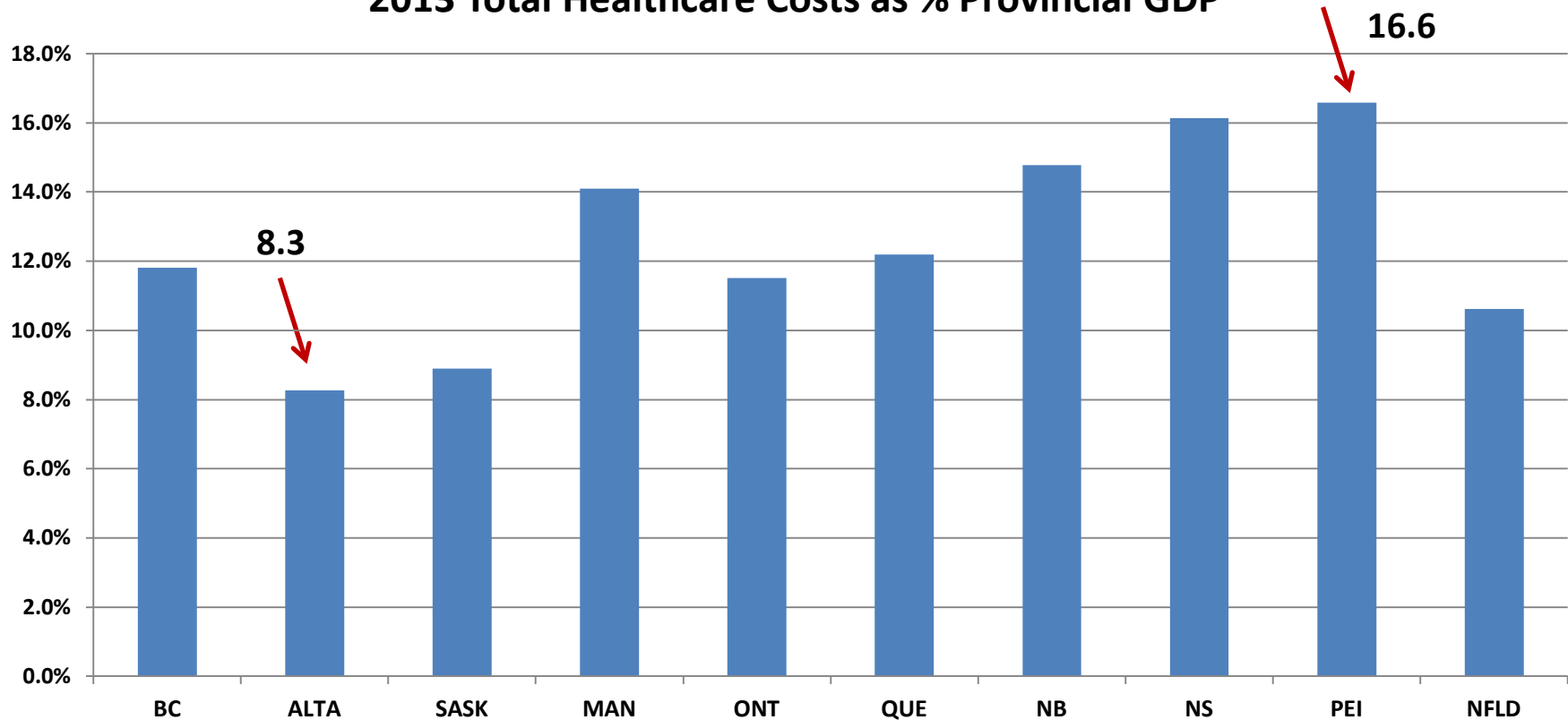
1988	\$ 51 billion	8.3% of GDP
2013	\$211 billion	11.2% of GDP

5.8% annual increase

CPI – Healthcare Component	+ 2.6%	per annum
Population	+ 1.1%	“
Aging	+ 1.0%	“
Medical technology	+ 1.0%	“

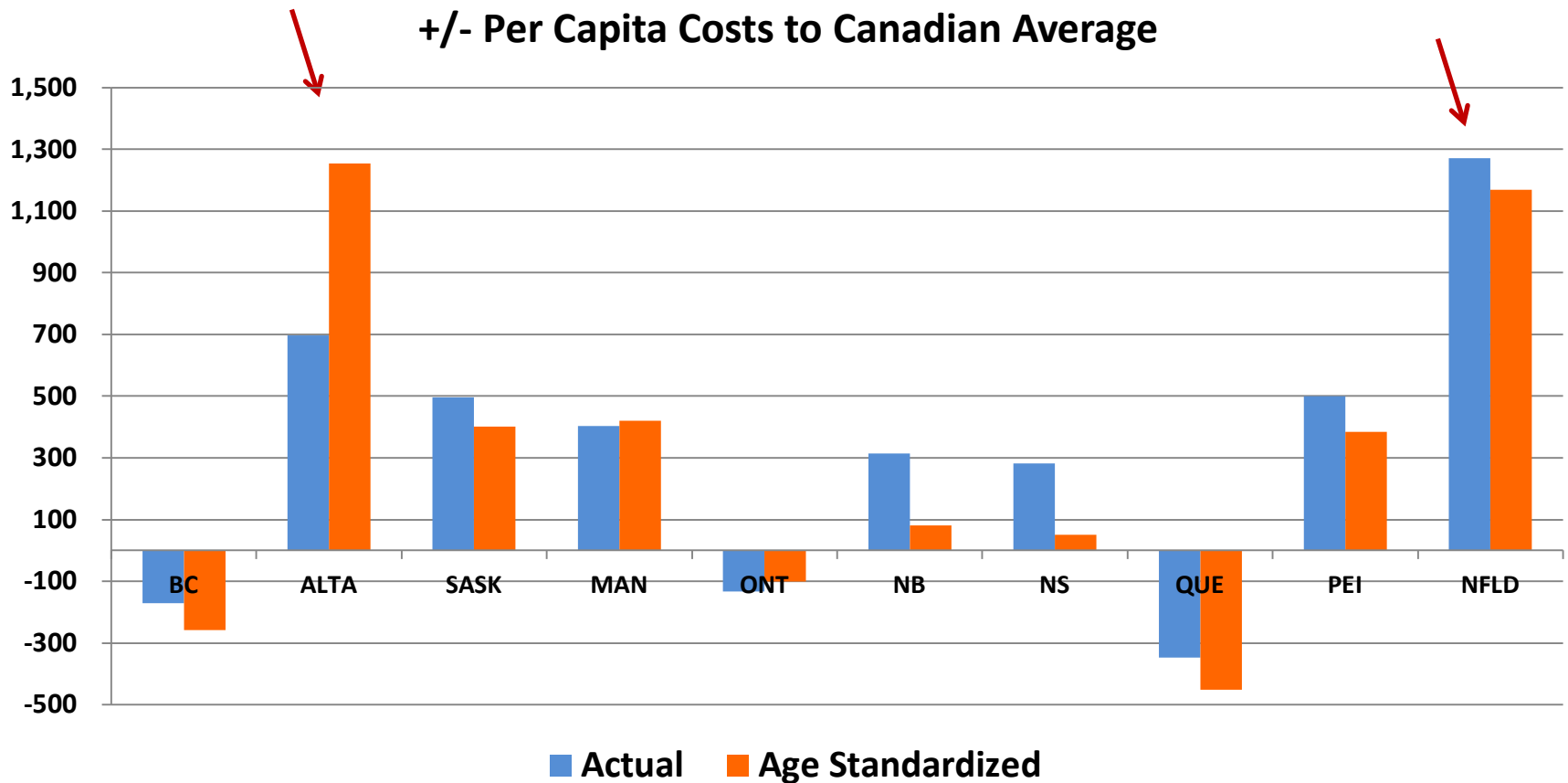
Healthcare Costs by Province

2013 Total Healthcare Costs as % Provincial GDP



For some provinces natural resources significant source of **GDP**

Healthcare Costs by Province



Canadian average per capita costs for 2011 -> \$3,790 for provincial plan

Healthcare Metric - PYLL

Potential Years of Life Lost (PYLL)

Average additional years someone would have lived if they didn't die prematurely prior to age 75

Mortality rates applied to 1991 Canadian population by age/gender and weighted by (75-age).

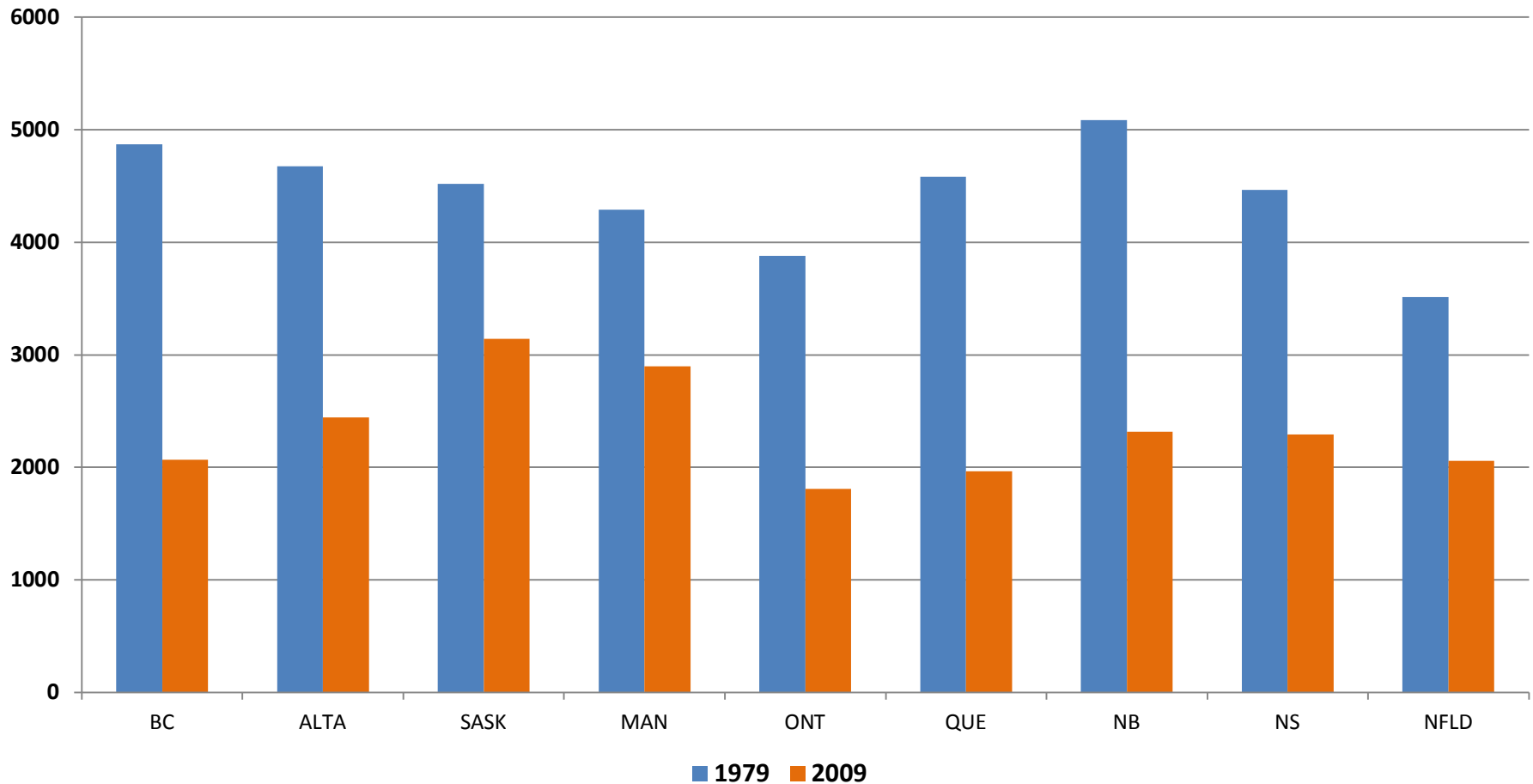
PYLL = Sum and express per 100K population

PYLL split by cause of death

- Preventable – lifestyle, vaccinations, sanitation ...
- Treatable – early detection, timely treatment ...
- Not treatable – too late, no cure ...

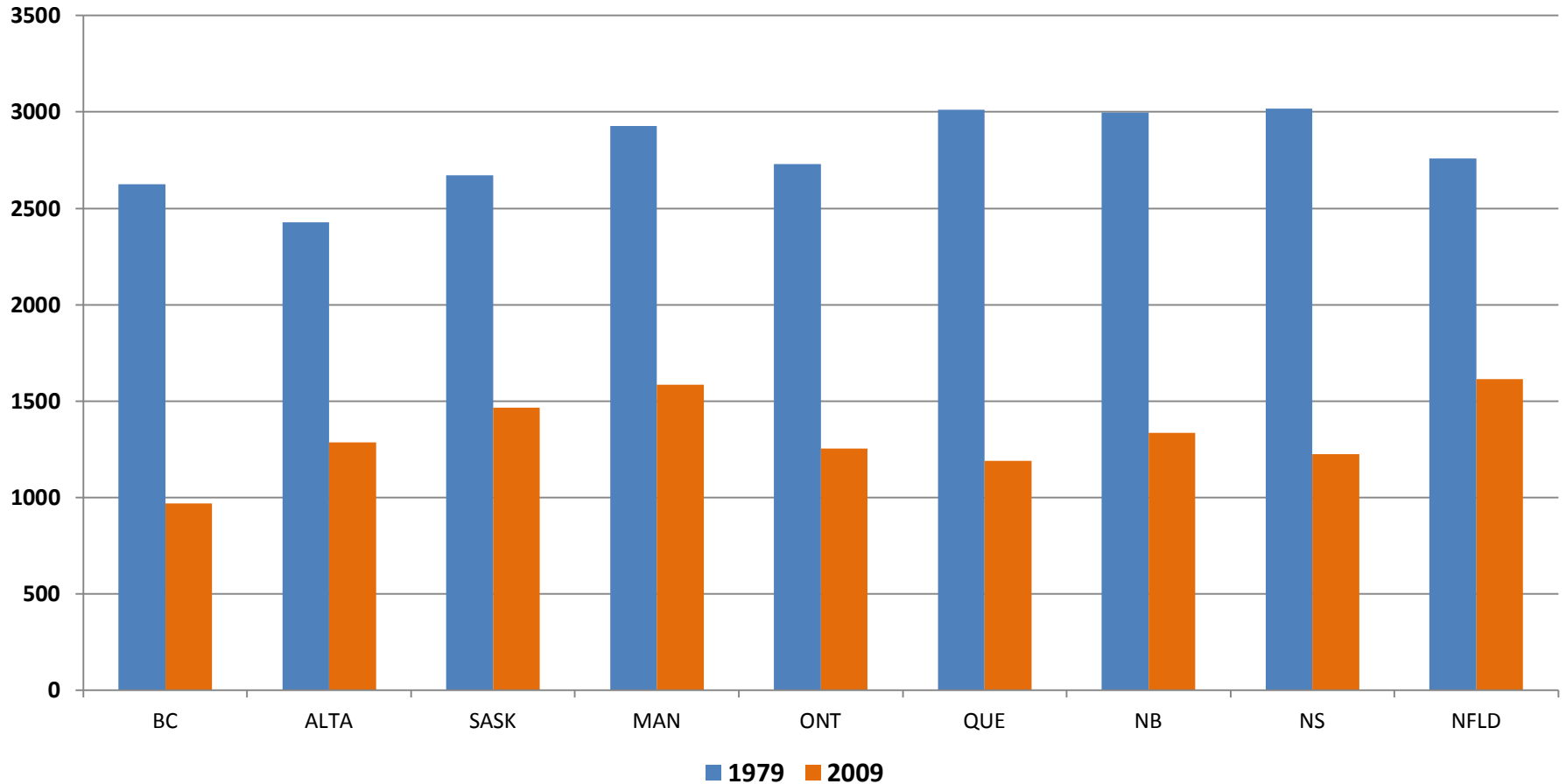
PYLL – Potentially Preventable

Preventable PYLL - 30 year Progress – 52% Reduction



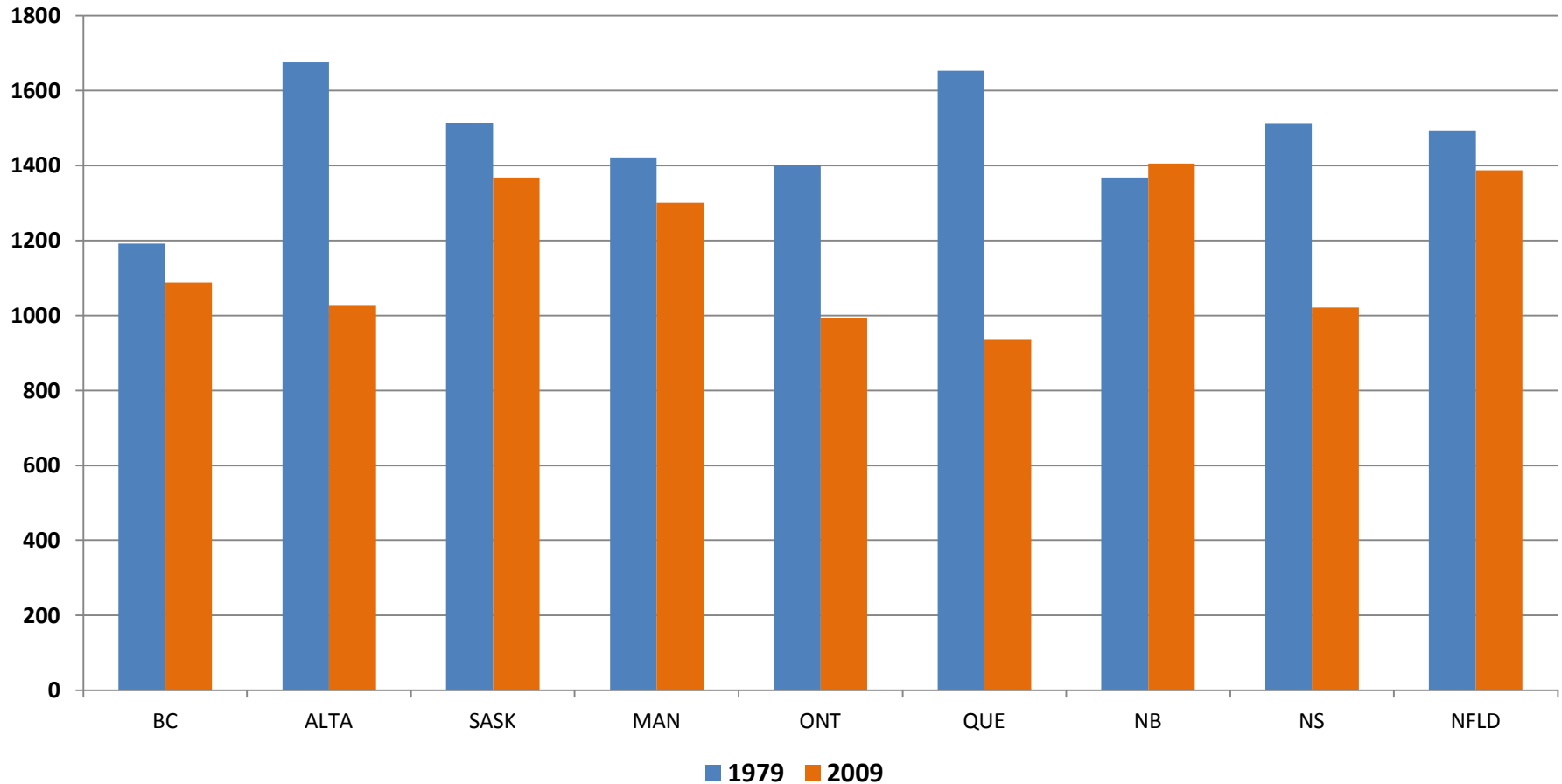
PYLL – Potentially Treatable

Treatable PYLL - 30 year Progress – 56% Reduction



PYLL – Not Treatable

Not Treatable PYLL - 30 year Progress – 30% Reduction




Lifestyle Index

Lifestyle Index Components is prevalence rates of

- Heavy drinking – 5+ alcohol at least once /month
- Smoking – daily or occasionally
- Obesity – self reported BMI > 30

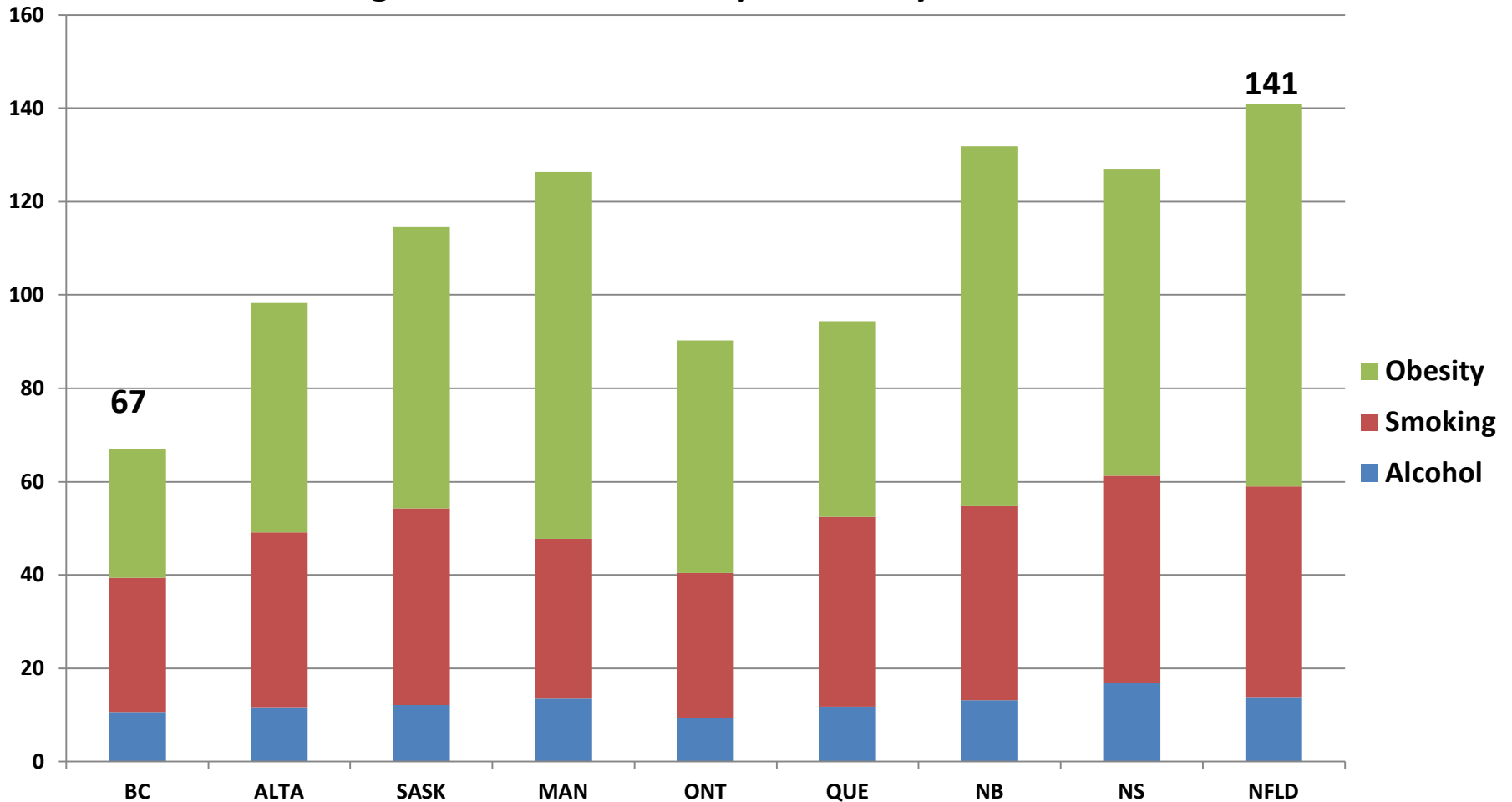
Index = A x Drinking + B x Smoking + C x Obesity

Lifestyle Indices vs All Causes PYLL (2010)

Canada	-	93.3		3,217
Japan	-	55.5		2,616
Sweden	-	74.0		2,487
USA	-	123.2		4,870

Lifestyle Index

Age Standardized Lifestyle Index by Province 2010



Lifestyle Index

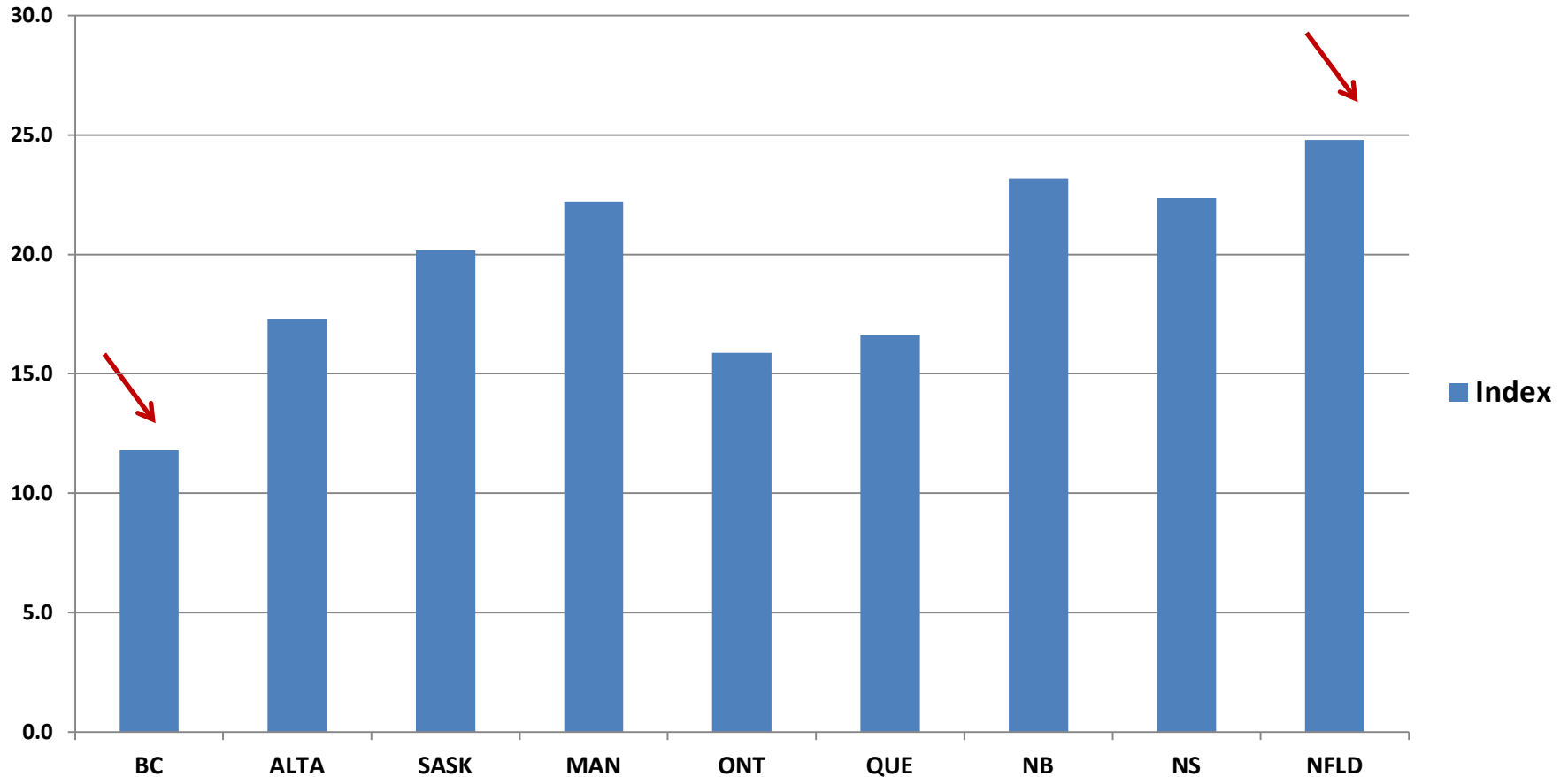
Can Lifestyle Index predict healthcare outcomes?

- **Chronic illnesses**
- **Longevity**
- **Health Adjusted Life Expectancy**
- **...**

Let's look at a few age-standardized prevalence rates!

Lifestyle Index -> Arthritis?

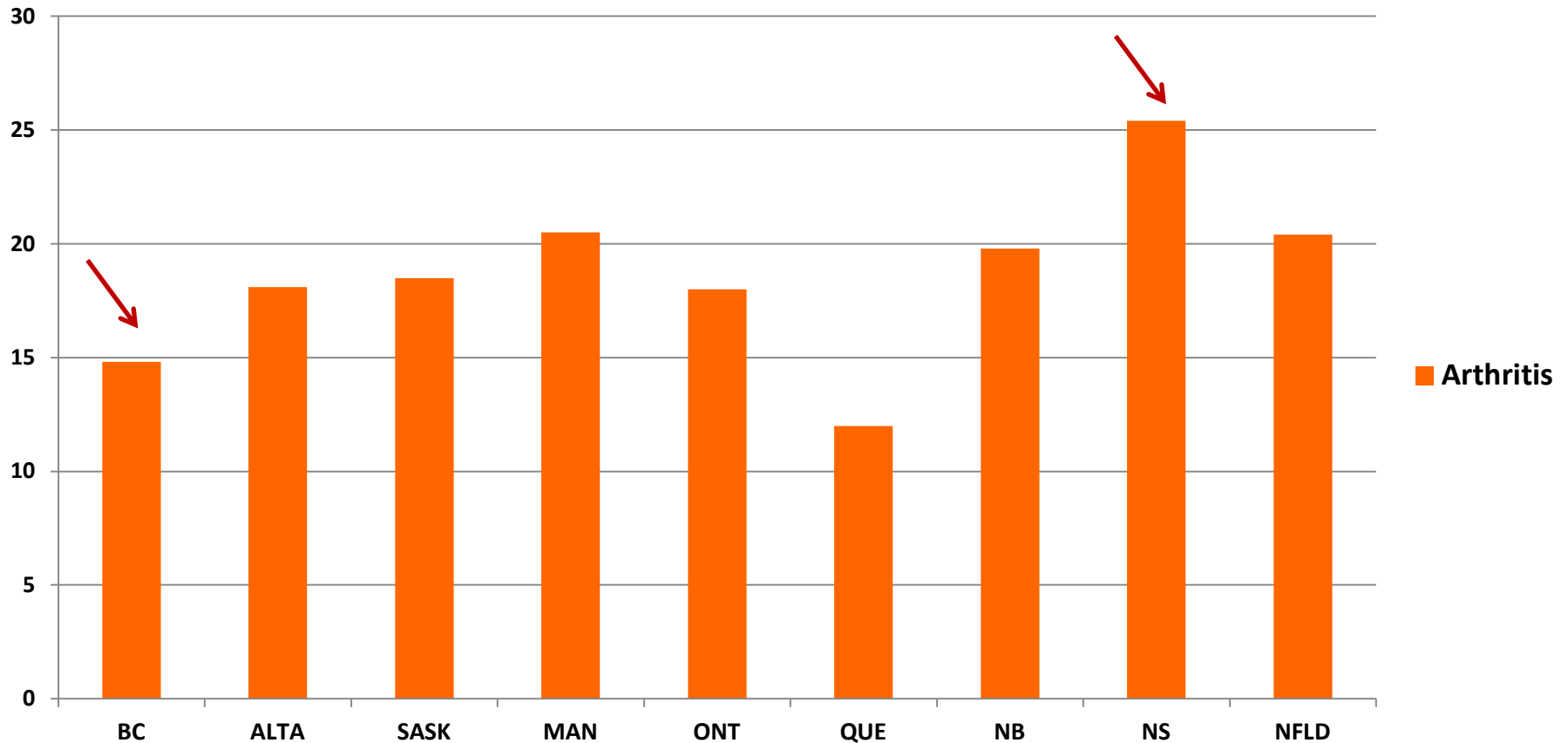
Can Index Predict Arthritis %?



Index values have been adjusted to average Canadian arthritis prevalence %

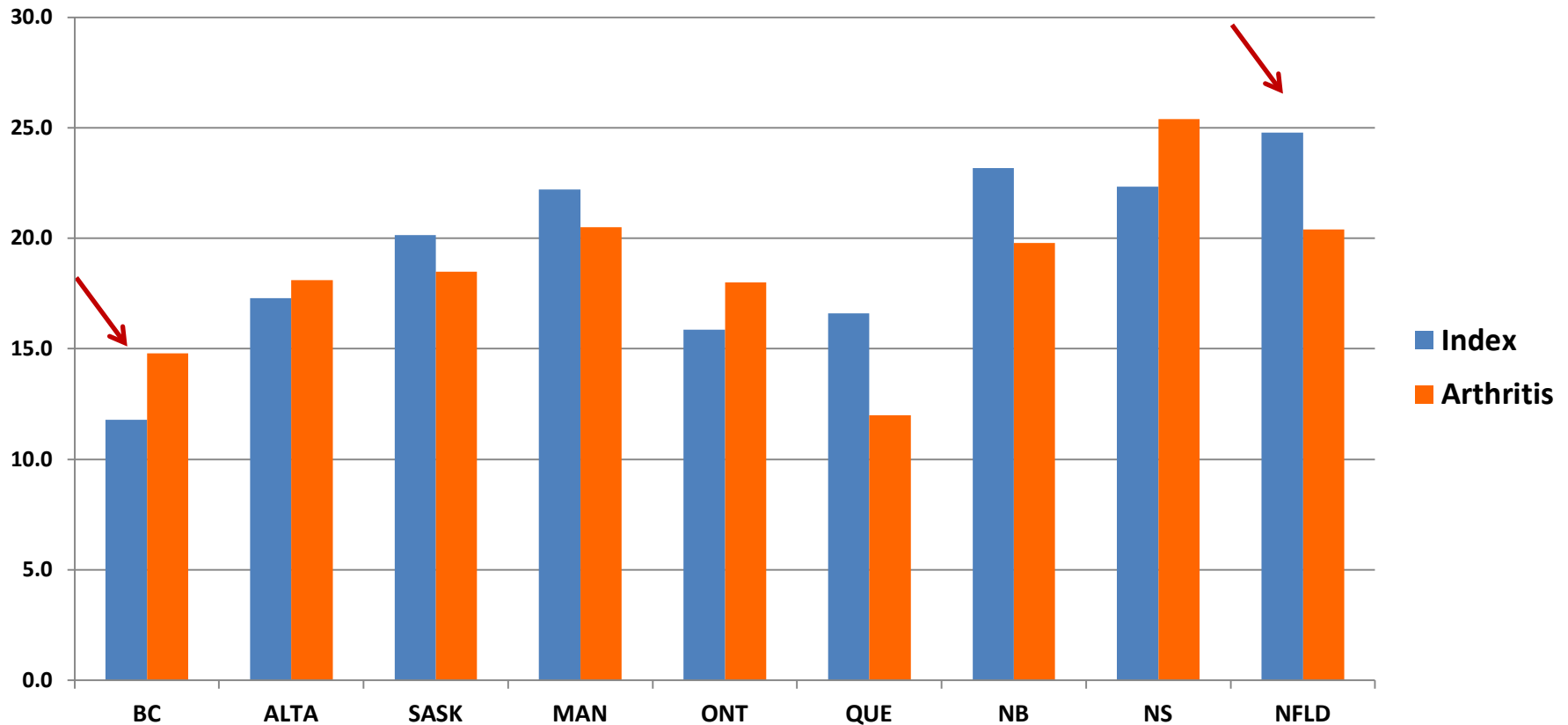
Lifestyle Index -> Arthritis?

Prevalence Rate of Arthritis %



Lifestyle Index -> Arthritis?

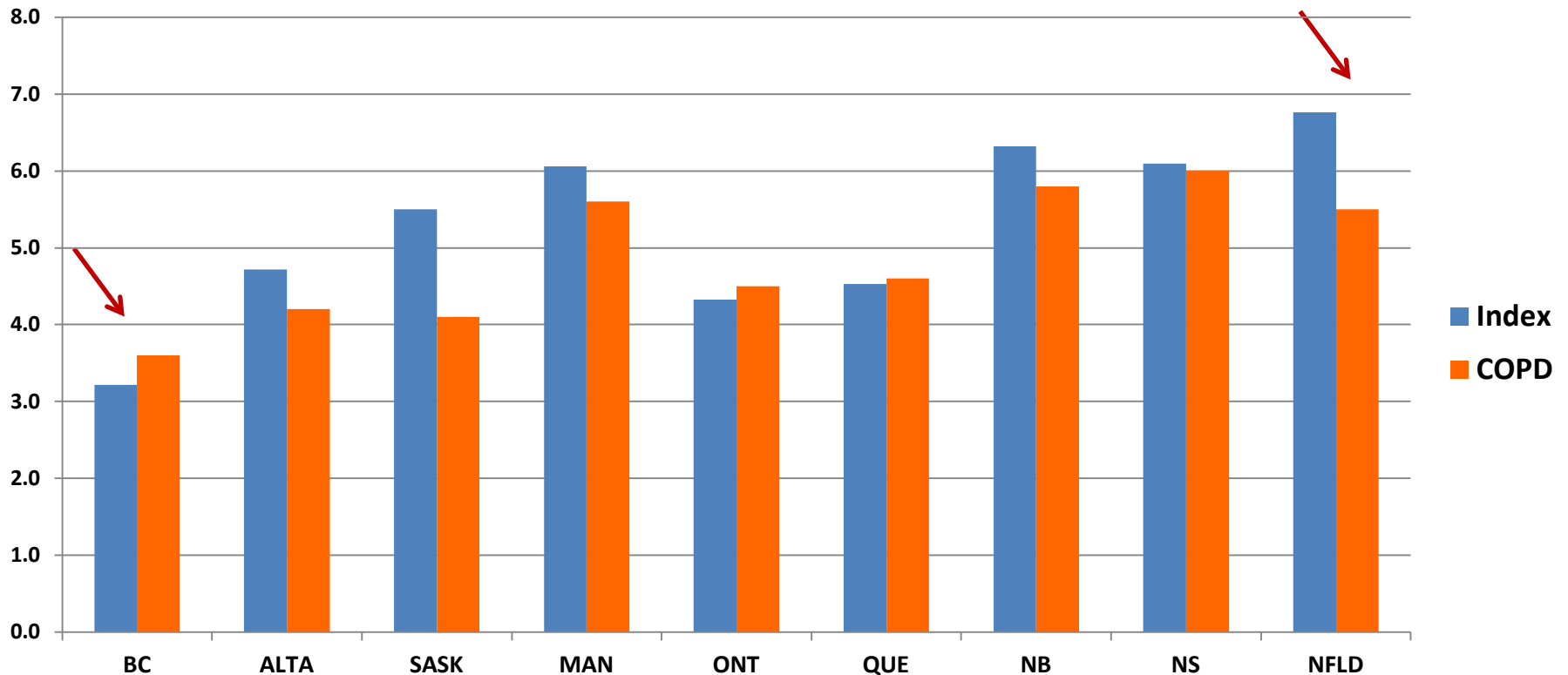
Lifestyle Index vs Arthritis



Index values have been adjusted to average Canadian arthritis prevalence %

Lifestyle Index -> COPD?

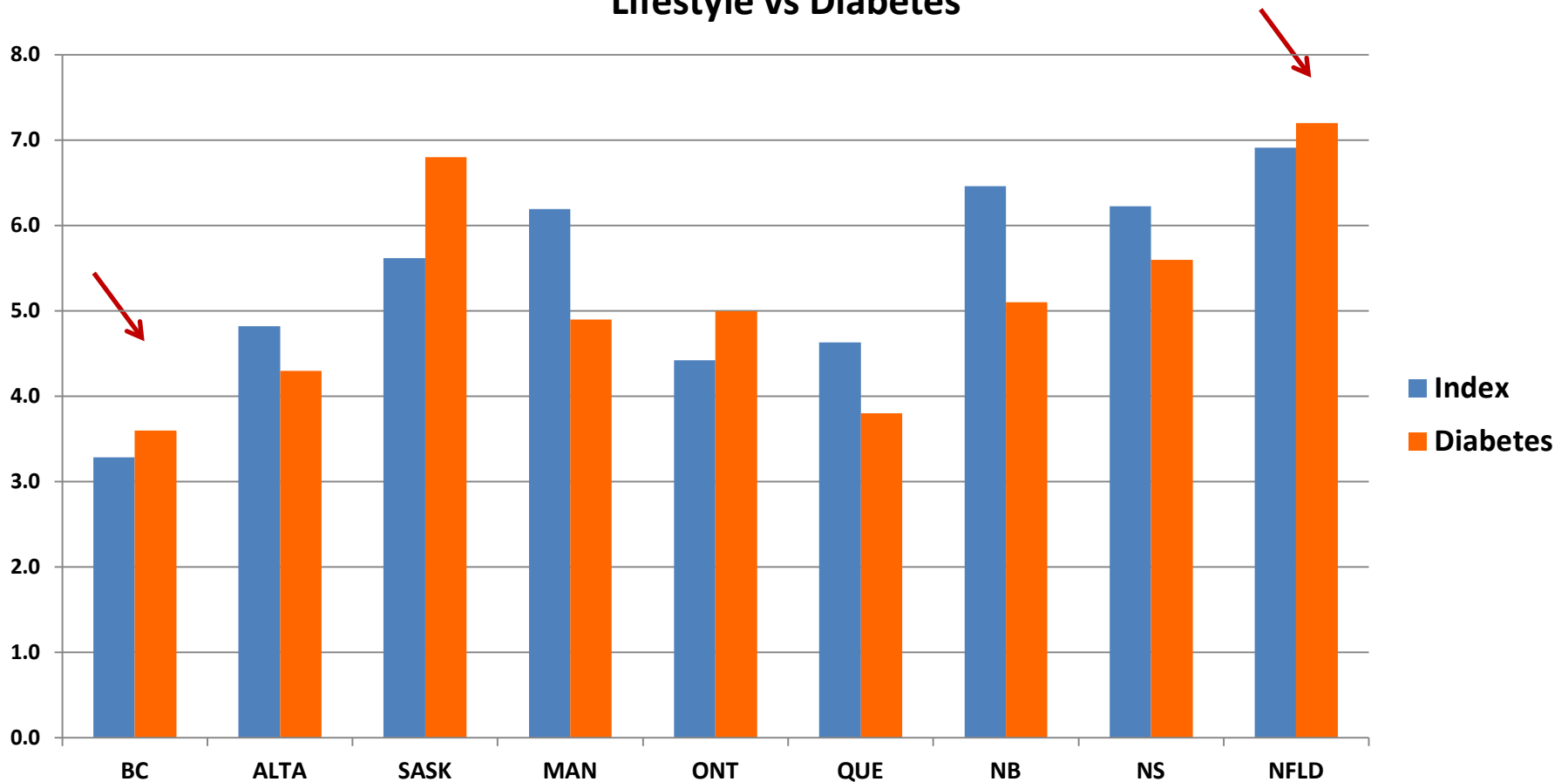
Lifestyle Index vs COPD



Index values have been adjusted to average Canadian COPD prevalence %
COPD - Chronic obstructive pulmonary disease

Lifestyle Index -> Diabetes?

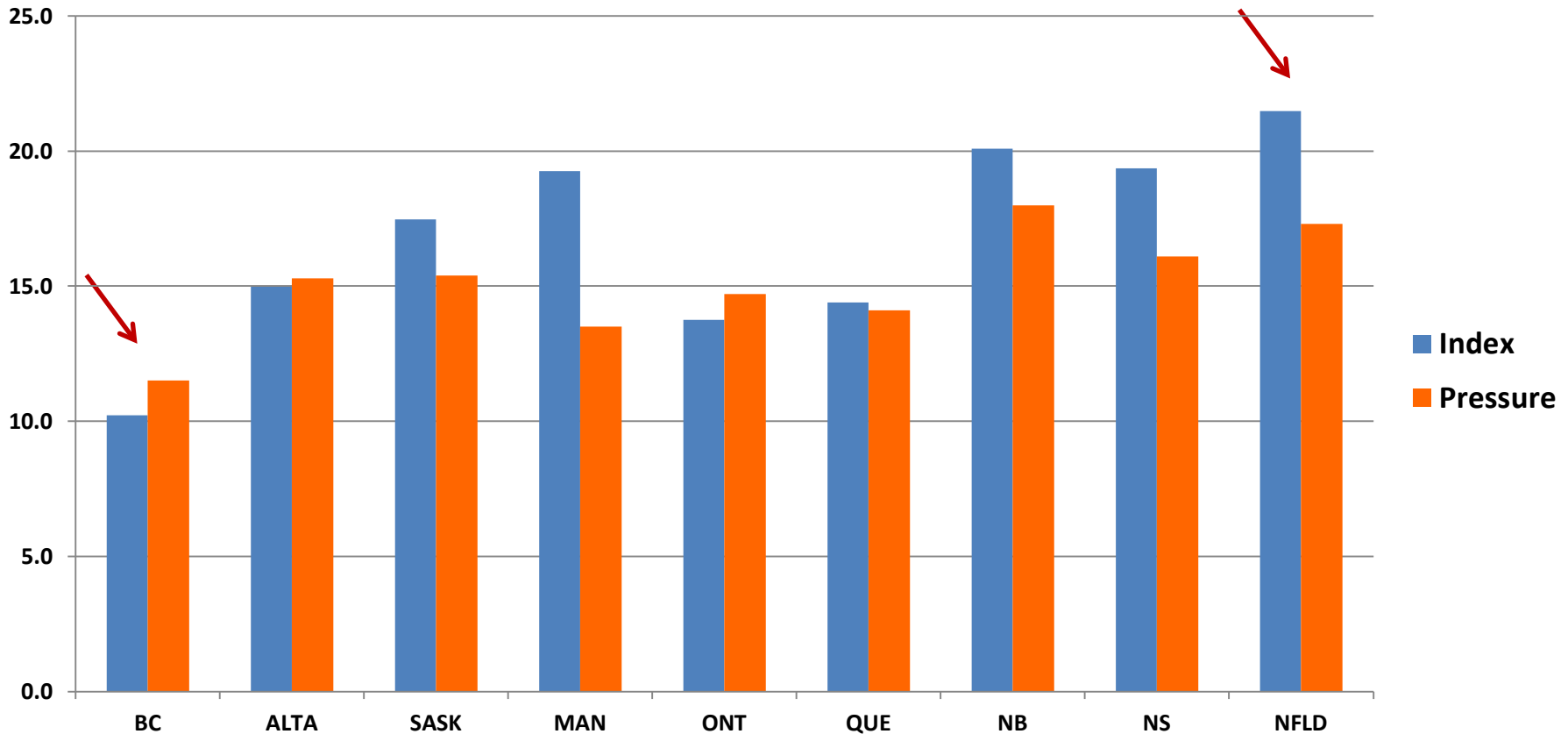
Lifestyle vs Diabetes



Index values have been adjusted to average Canadian diabetes prevalence %

Lifestyle Index -> High Blood Pressure?

Lifestyle vs High Blood Pressure



Index values have been adjusted to average Canadian high blood pressure

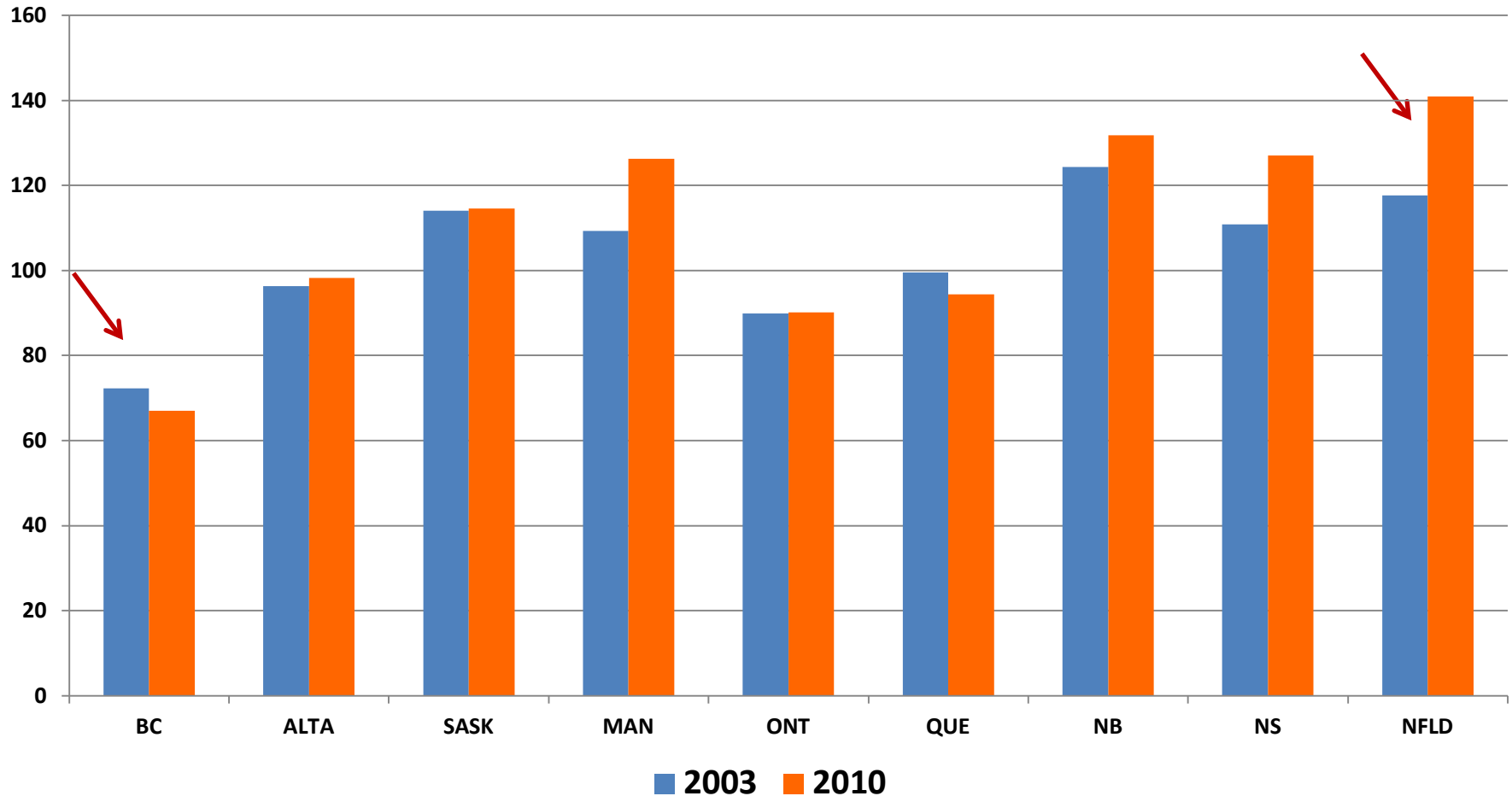
Lifestyle Index – 2003->2010

Lifestyle Index Progress?

- **Drinking** **9.5%** -> **10.9%** **Canada overall**
- **Smoking** **21.3%** -> **17.6%** **“**
- **Obesity** **14.0%** -> **15.9%** **“**

Lifestyle Index **94.1** -> **93.8** **“**

Lifestyle Index – 2003->2010



The potential is significant!!

Health Adjusted Life Expectancy

Health Adjusted Life Expectancy (HALE)

- Measures years lived in good health
- Uses Health Utility Index by persons ability to perform activities of daily living and enjoy life
- Assign values from 1.0, .80,....., .5 and 0 to each year

Health Adjusted Life Expectancy

2005/2007 Values

At Birth Values for Life Expectancy (LE) and HALE

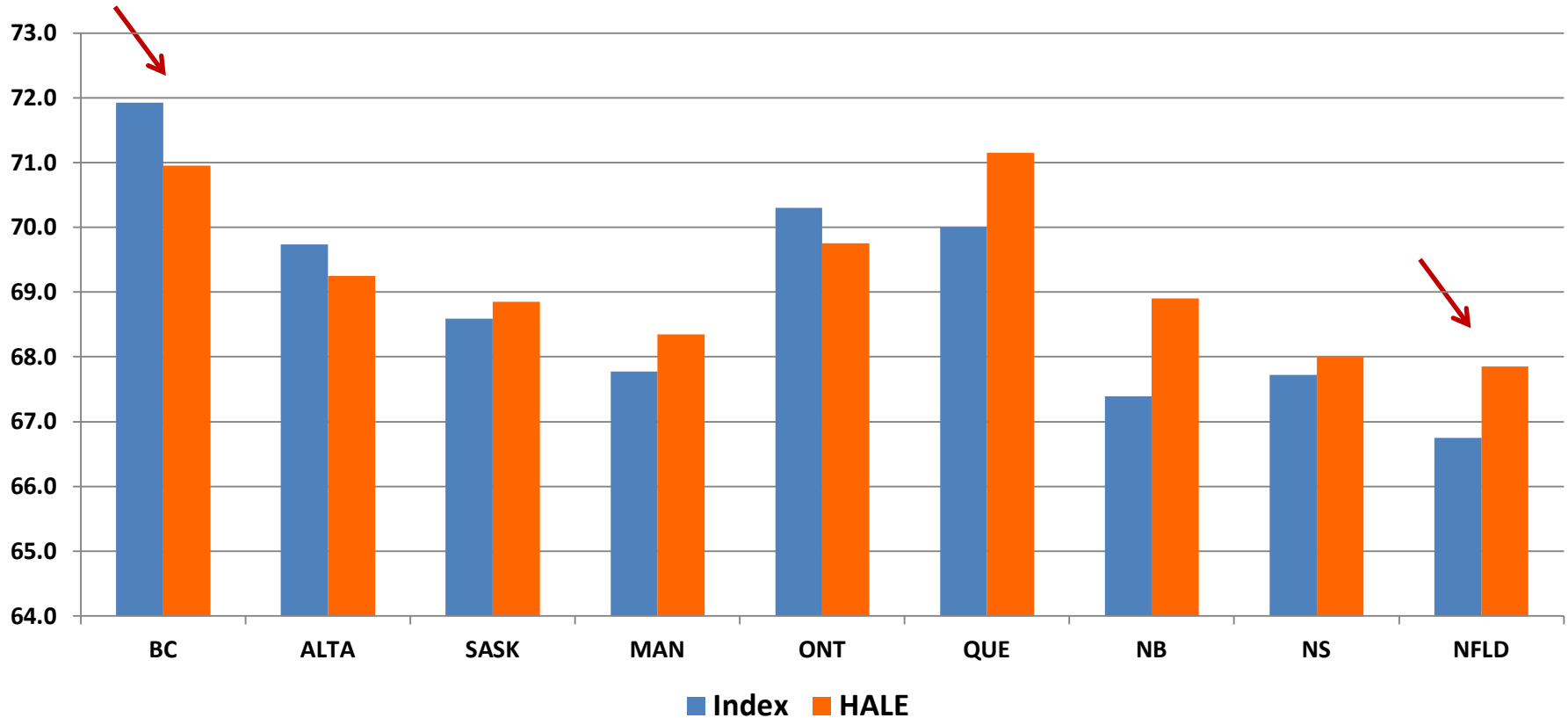
	LE	HALE
Female	83.0	71.2
Male	78.3	68.9

At Age 65 Values for Life Expectancy (LE) and HALE

	LE	HALE
Female	21.3	15.0
Male	18.1	13.8

Lifestyle Index -> HALE

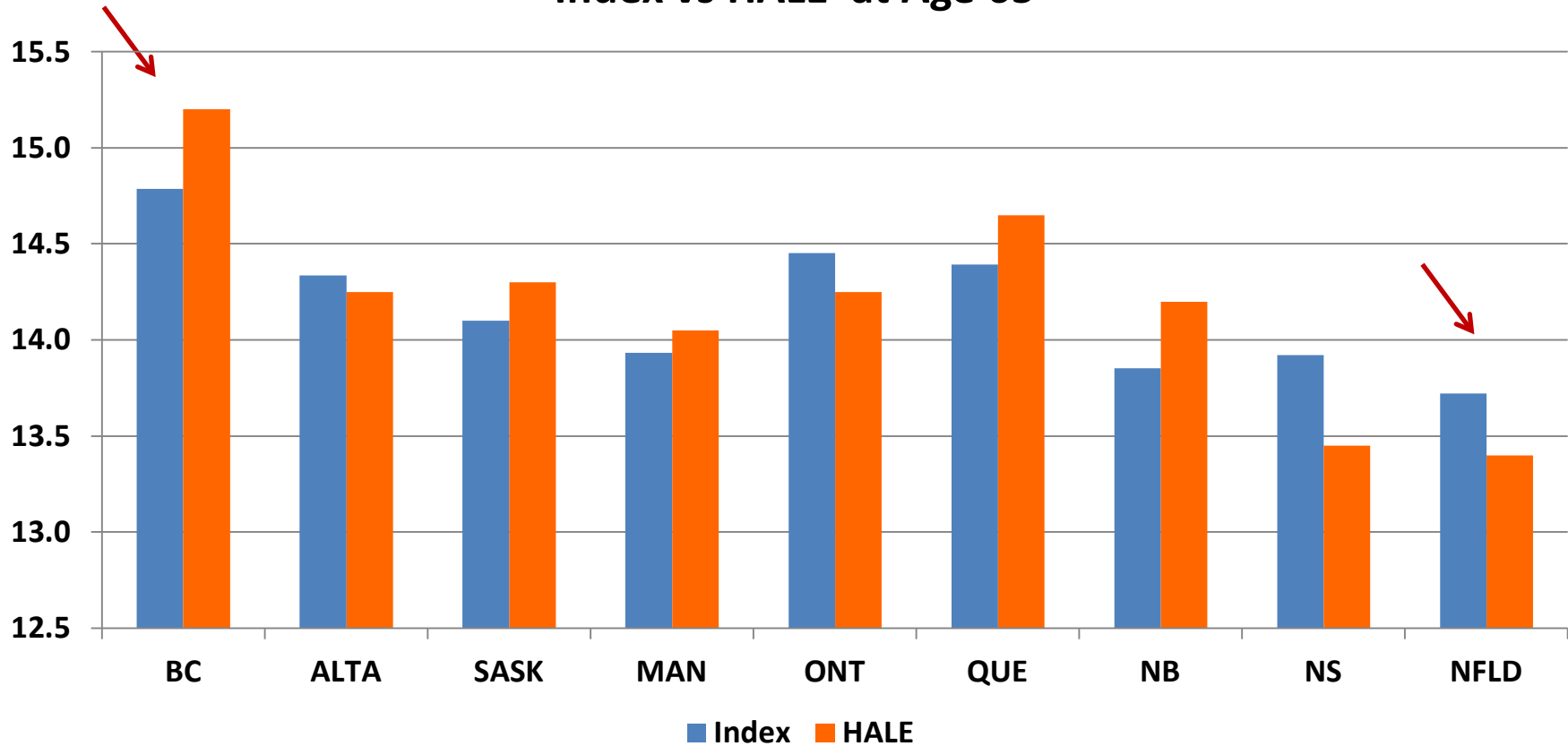
Index vs HALE at Birth



Index values have been adjusted to average Canadian HALE

Lifestyle Index -> HALE

Index vs HALE at Age 65



Index values have been adjusted to average Canadian HALE

Lifestyle Index

Index has high predictive value in Healthcare outcomes!

Potential Uses

- **Economic value of wellness**
- **Identify health/wellness areas with highest return**

Expand Index

- **Socio-economic status, income**
- **Leisure time physical activity**
- **Access to healthcare**

Contact

Data sources:

Canadian Information and Health Institute (CIHI)

Stats Canada

OECD

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Questions?