

Virtual Clinic Models for Managing Remote Care

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Area: 661 848 km²

**Population: 4,252,900
(Statistics Canada, 2016)**



The establishment of the virtual clinic in 1998 united the separate rural components of the program by providing centralized expertise to sparsely populated areas, especially important as case load falls, and enabling 'management-in-place' of on-reserve First Nations.

The “Virtual Clinic” is a colloquialism in the TB program in Alberta; it refers to a clinic that does not actually see patients face-to-face. Rather it receives from community health nurses in reserve communities or public health nurses in Rural Health Zones, referrals in the form of a medical record and chest radiograph(s) sent either electronically or by courier.

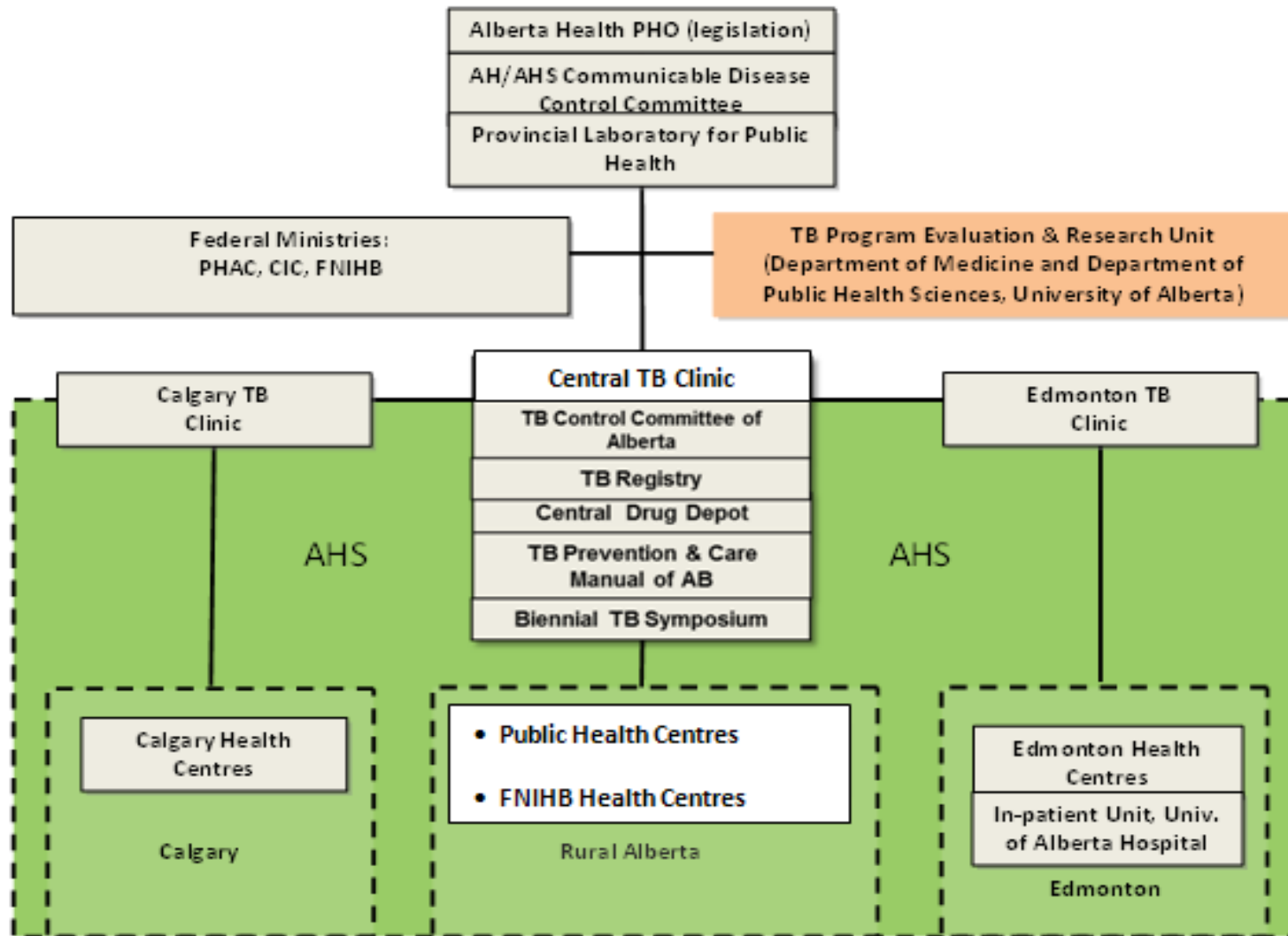
Public health nurses and a small group of community-based pulmonary and infectious disease physicians staff all three clinics.



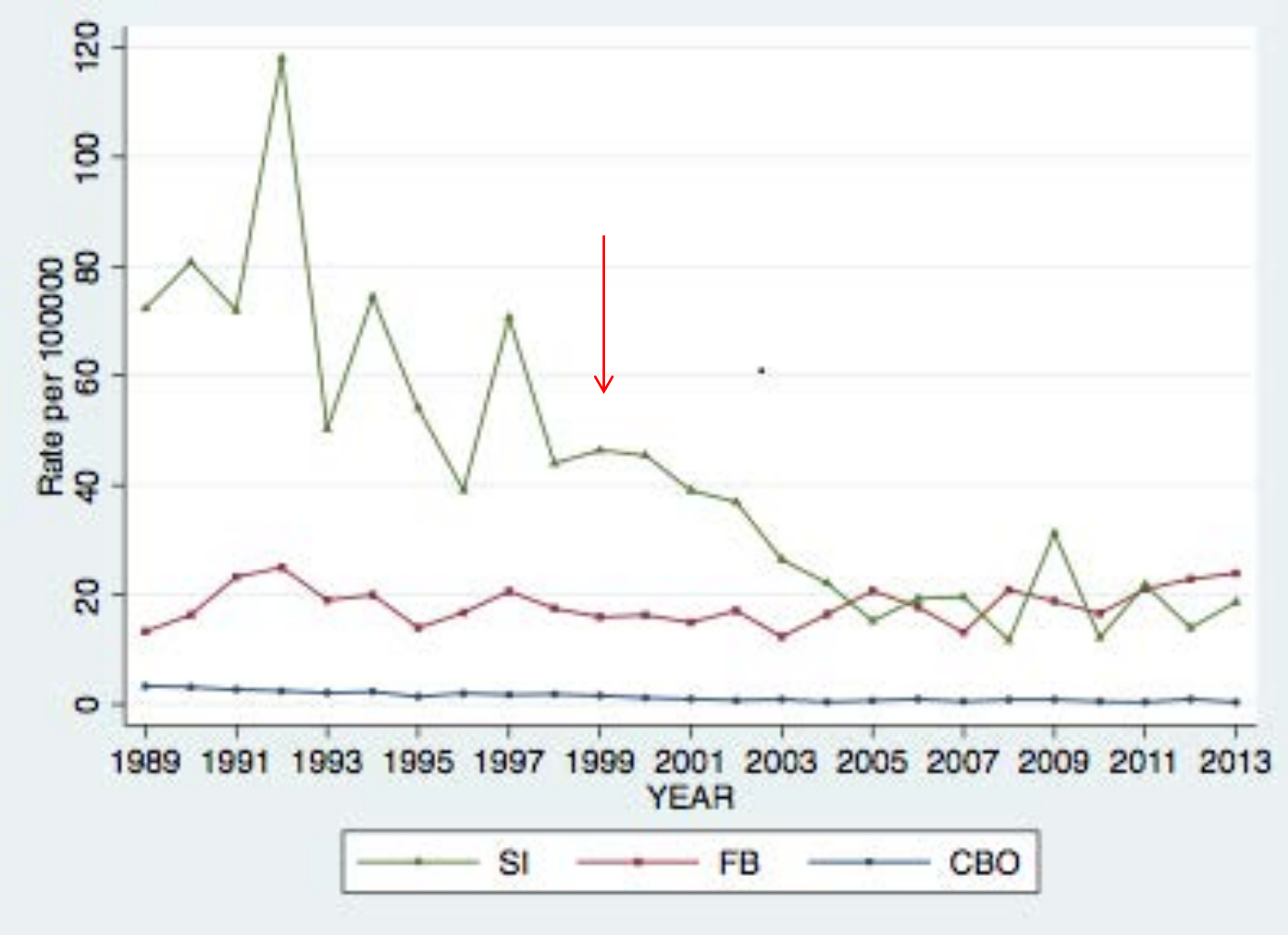
In addition to recognizing the negative history attached to the removal of First Nations to distant sanatoria, it resembles the neighbourhood clinics described by Curry, serving patients who are often at a lower socioeconomic level, less well educated and living in overcrowded substandard housing.



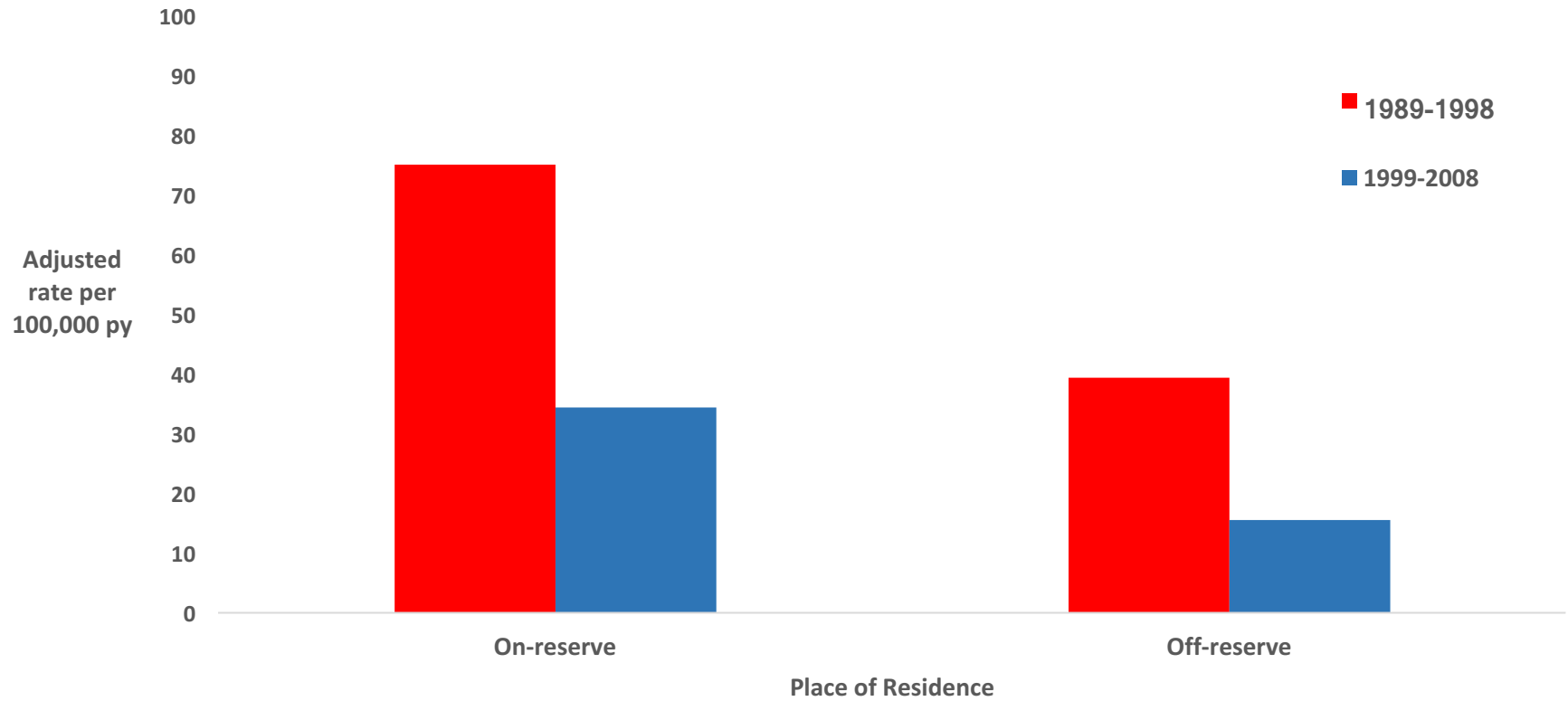
TB Prevention and Care Program of Alberta



AGE AND SEX ADJUSTED INCIDENCE OF TUBERCULOSIS IN ALBERTA, 1989-2013



AGE AND SEX ADJUSTED TUBERCULOSIS CASE RATES IN REGISTERED FIRST NATIONS BY PLACE OF RESIDENCE AND TIME PERIOD



Results

Individually and together both types of clinics met most performance targets. Compared to outpatient clinics, virtual clinic performance was comparable, superior and inferior in 22, 3, and 3 indicators, respectively.

There was no difference in the performance of the “virtual clinic” in cases reported to be “on” versus “off” reserve at the time of diagnosis.

Conclusion

Outpatient and virtual public health TB clinics perform equally well. In low-incidence settings a combination of the two clinic types has the potential to address issues around equitable service delivery and declining expertise.

Extra Slides

The TB Clinic

The concept of a “tuberculosis dispensary” was originally developed by Sir Robert Philip in Edinburgh in 1897 in response to the limitations of mainstream medical management.*

In 1964, Canadians called for urgent improvement and extension of chest clinic services, as well as a sharply increased awareness of the many pitfalls of prolonged self medication.†

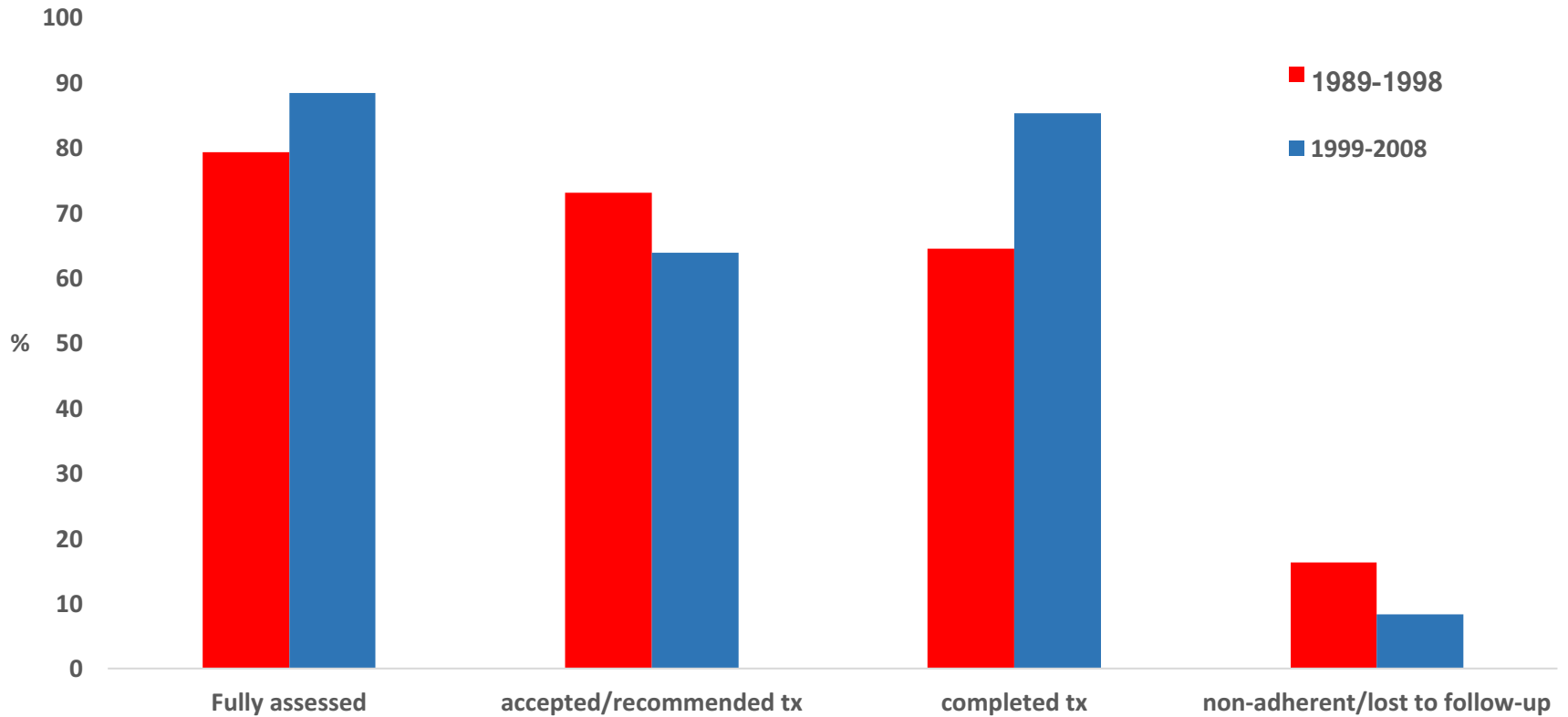
*Keers RY. Pulmonary Tuberculosis: A Journey Down the Centuries

† Can J Public Health 1964; 55; 323-33

Contemporary TB Programming in Canada faces five acknowledged challenges

1. The disease is less common but often more difficult to treat (HIV/AIDS; drug resistance).
2. The disease is concentrated in two minority groups – foreign-born and Indigenous peoples.
3. The disease, while geographically focal in its spread, can occur anywhere at any time.
4. The management of the disease is a highly collaborative enterprise involving many stakeholders.
5. The management of the disease is presupposed to be equitable.

EVALUATION OF CLOSE CONTACTS OF ADULT, CULTURE-POSITIVE ON-RESERVE PULMONARY TB CASES IN TWO TIME PERIODS



Tuberculosis case characteristics by clinic site of care, Alberta, 2008-2012

Characteristic	Clinic Site of Care			p-value
	All Clinics n (%)	Virtual Clinic n (%)	Outpatient Clinics n (%)	
No. Assessed	841	150 (18)	691 (82)	NA
Population Group				0.0001
CB Indigenous	100 (12)	70 (47)	30 (4)	
CB Other	81 (10)	19 (13)	62 (9)	
Foreign-Born	660 (78)	61 (41)	599 (87)	

CB: Canadian-Born

In 2008-2012, TB cases in Alberta were grouped according to clinic type and performance indicators were grouped according to objective category

- **TB case management (10 indicators)**
- **TB treatment outcome (6 indicators)**
- **TB contact management (12 indicators; 6 indicators in two age groups were assessed in close contacts of two different random samples of smear-positive pulmonary TB cases)**