IMPACT OF QUEBEC PRIMARY HEALTHCARE (PHC) REFORM ON POPULATION HEALTH

EFFECTS ON CONTINUITY OF CARE

ANALYSIS OF ADMINISTRATIVE DATABASES

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Plan

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PROBLEMS WITH PRIMARY HEALTHCARE

- Services fragmentation
- Access to care
- Continuity of care
- Sharing of clinical information
- Lack of multidisciplinarity

Importance of primary health care reform

- Reform started in 2003 and is still ongoing
- Implementation of « groupes de médecine de famille (GMF) »
- Implementation of « cliniques-réseau (CR) »
- Registration of patients as vulnerable with a general practitioner
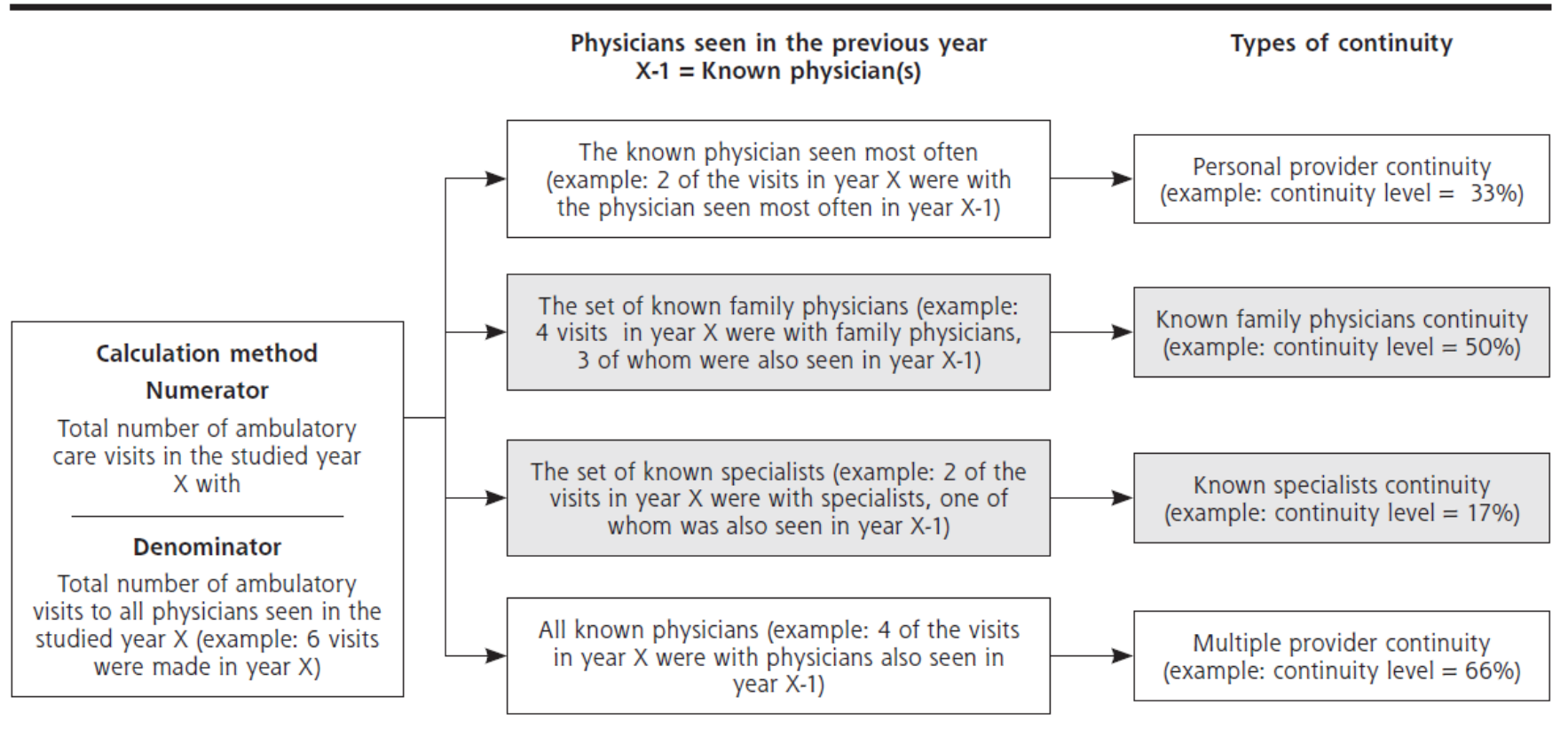- Registration with a physician practicing in a GMF

PURPOSE OF REFORM

- Improve integration of PHC services
- Improve access
- **Improve continuity**
- Improve quality of care
- Reduce unmet needs

KNOWN MEASURE OF CONTINUITY

- Usual provider continuity (proportion of visits to the physician seen most often)
- Relatively simple to measure and interpret
- Sensitive to utilisation levels
- Captures continuity by multiple physicians at practice site only
- Rarely validated against survey measures
- New measures needed for continuity across organisational and disciplinary boundaries

Figure 1. Definition of known provider continuity (KPC).

Physicians seen in the previous year X-1 = Known physician(s)

Types of continuity

Calculation method

Numerator

Total number of ambulatory care visits in the studied year X with

_____

Denominator

Total number of ambulatory visits to all physicians seen in the studied year X (example: 6 visits were made in year X)

The known physician seen most often (example: 2 of the visits in year X were with the physician seen most often in year X-1) → Personal provider continuity (example: continuity level = 33%)

The set of known family physicians (example: 4 visits in year X were with family physicians, 3 of whom were also seen in year X-1) → Known family physicians continuity (example: continuity level = 50%)

The set of known specialists (example: 2 of the visits in year X were with specialists, one of whom was also seen in year X-1) → Known specialists continuity (example: continuity level = 17%)

All known physicians (example: 4 of the visits in year X were with physicians also seen in year X-1) → Multiple provider continuity (example: continuity level = 66%)

Note: Types of continuity in gray are not measured in this article, ie, among the physicians also seen in year X-1, as we did not distinguish between family physicians and specialists.

Tousignant P, Diop M, Fournier M, Roy Y, Haggerty J, Hogg W, Beaulieu M-D. Validation of two new measures of continuity of care based on year-to-year follow-up with known providers. Annals of Family Medicine 2014;12:559-567. doi: 10.1370/afm.1692.

METHODS

- We analysed administrative database (ADB) between 2001-2002 and 2009-2010 for users of services aged 20+.

- These ADB include the large majority of medical services for residents in Montreal.

- We had information for 1.10 to 1.15 millions of users every year.

- Our analyses focus on four exclusive groups based on their registration status: not registered, registered in GMF only, registered as vulnerable only registered in GMF and as vulnerable.

Evolution in the number of users according to their registration status between 2001-2002 and 2009-2010

| Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Not registered	1 154 119	1 151 094	1 037 914	989 094	951 469	926 637	872 312	819 399	765 675
Registered in GMF only			719	4 755	16 763	23 962	30 274	47 896	65 508
Registered as vulnerable only			107 072	138 703	150 213	160 388	186 911	202 371	218 081
Registered in GMF and as vulnerable			559	2 209	7 778	9 590	14 578	27 673	45 639
TOTAL	1 154 119	1 151 094	1 146 264	1 134 761	1 126 223	1 120 577	1 104 075	1 097 339	1 094 903

METHODS

- Association between registration status and continuity was assessed with multivariate logistic regression.

- Data are presented as percentage of users with high continuity (30 to 100%).

- All results are controlled for age group (age group 45-49), morbidity (level 3 of ACG-RUB) and deprivation level (level 3 of Pampalon scale).

- For analyses assessing the association between continuity level the preceding year and number of visits to emergency or the number of hospitalisations, we used multivariate general estimating equations.

- Services provided by physicians in Family medicine units or in CLSC do not all appear in ADB. This interferes with measurement of continuity and for this reason, all the patients followed by these physicians were excluded (less than 5% of users).

- Since our four cohorts are defined according to their status at the end of their period under observation (users keep the same status during the whole period), the effect of belonging to their cohort appears in a change in the slope in the graphs.

Level of continuity offered by all physicians according to type of registration in users aged 20+
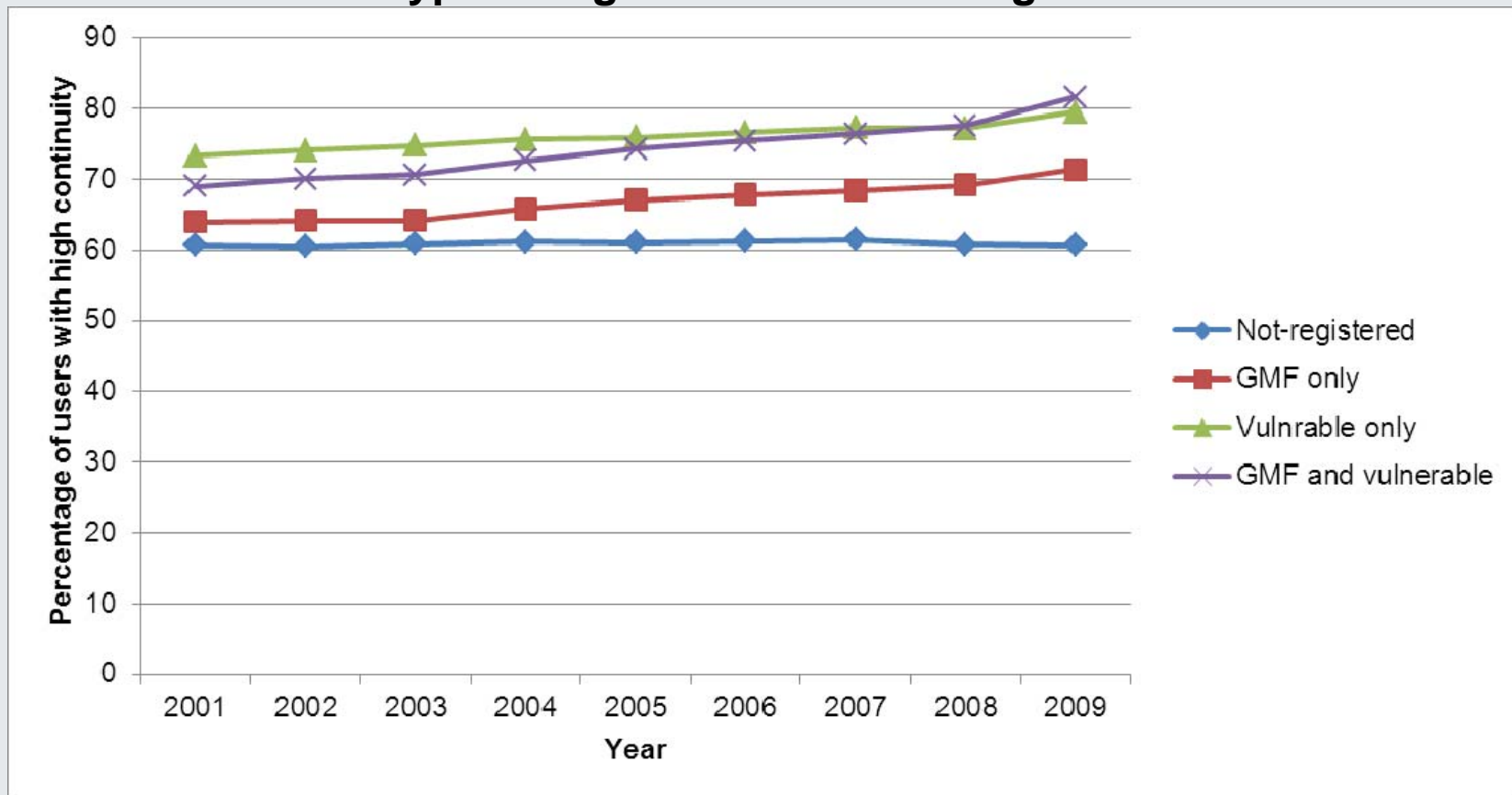
Level of continuity according to type of registration and the source of continuity in users 20+
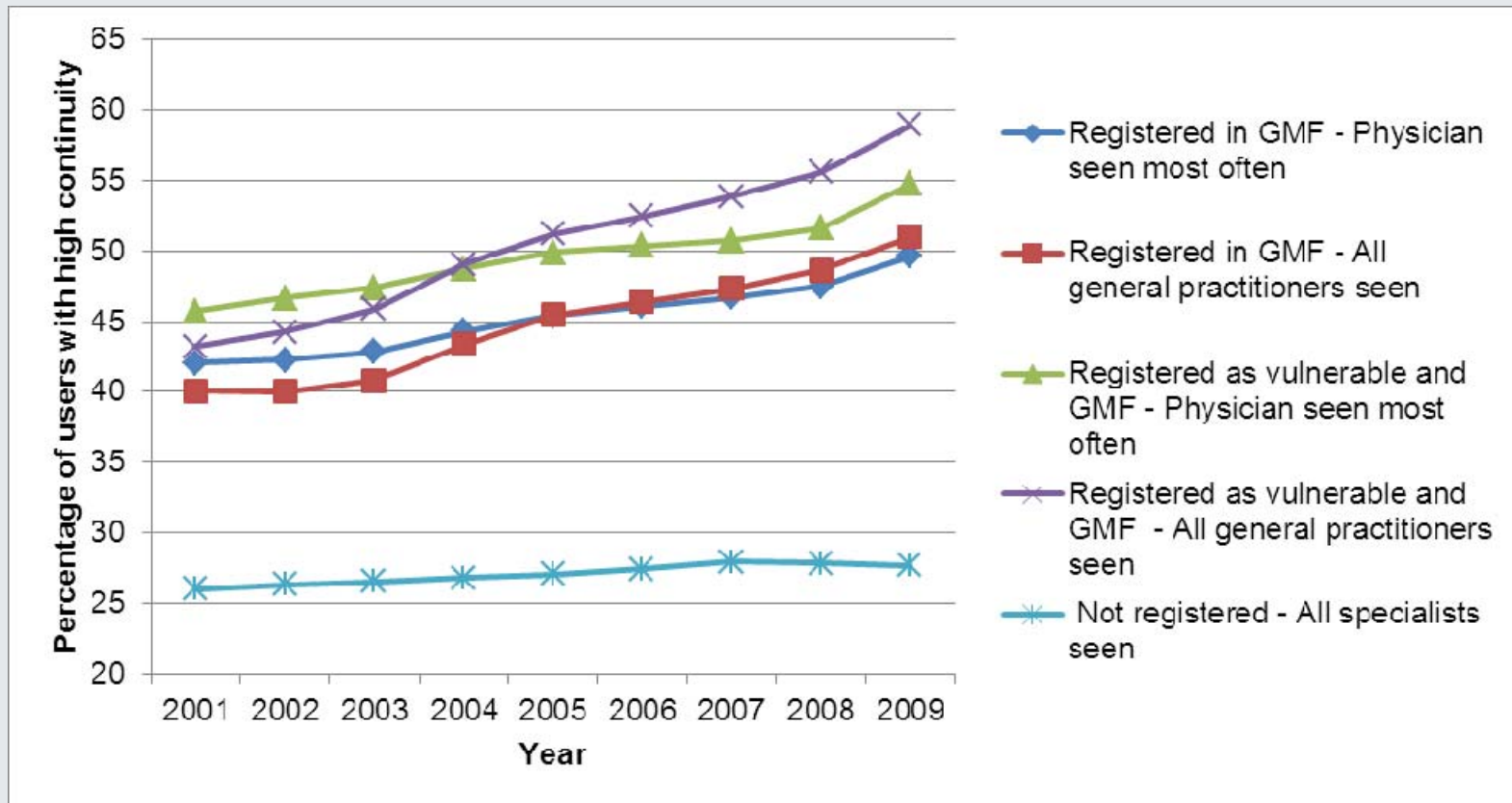
Note truncated Y axis to improve readability

Diabetics

- This last effect is also observed in diabetic users but to a less pronounced degree.

- Diabetics have a level of continuity offered by all physicians higher than the same continuity in users, leaving little room for marked improvement

Rate ratios describing the association between visits to emergency or hospitalizations and two types of continuity in users

	Rate ratio	
	Moderate vs low	High vs low
Visits to emergency		
1 Continuity offered by the physician seen most often	0,88 (0,87;0,89)	0,84 (0,83;0,86)
2 Continuity offered by all physicians	0,88 (0,87;0,89)	0,80 (0,79;0,81)
Hospitalisations		
1 Continuity offered by the physician seen most often	0,89 (0,87;0,92)	0,87 (0,83;0,90)
2 Continuity offered by all physicians	0,85 (0,82;0,87)	0,75 (0,73;0,77)

Ratio and (99% confidence interval)

Impact of optimal level in continuity

For 1 094 903 users in 2009, these ratios translate into a reduction of more than 50 000 visits to emergency (more than 75% of annual visits to emergency in a hospital of more than 500 beds) and of 4 475 hospitalisations (around 24% of hospitalizations in a similar hospital).

CONCLUSION

- Registration is associated with an increase in the continuity offered by all physicians in all users. In diabetics, the level of continuity is very high, leaving little room for an important increase.
- Registration in GMF is associated with a possible shift in the source of continuity from specialists to general practitioners.
- Registration in GMF is associated with a more pronounced increase in the continuity offered by the group of general practitioners
- Optimal continuity is associated with a significant decrease in visits to emergency room and in hospitalizations