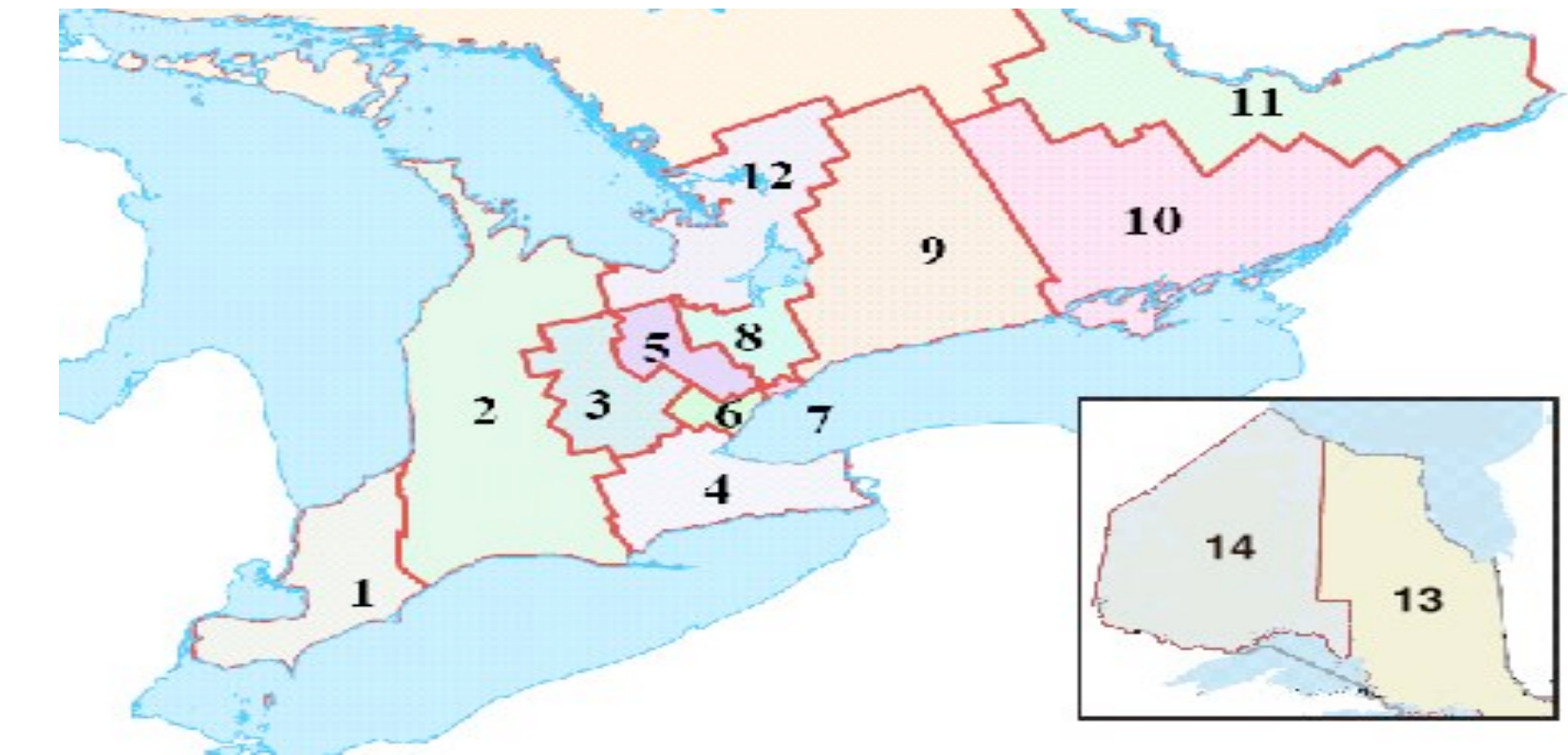


ABSTRACT

METHODS

RESULTS

Figure 1. Map Of Geographic Distribution Of Local Health Integration Networks (LHINs) In Ontario.



DISCUSSION

- A minority (1-2%) of physicians in Ontario ever purchased or downloaded the NDDS
- Even with the assumptions of group sharing and all HCPs representing physicians, only 16.5% of physicians are estimated to have accessed the NDDS
- Low frequency of downloading the NDDS was seen across Ontario, and was significantly lower in Eastern Ontario
- The program allowing free downloads led to a 2-3 fold increase in the number of physicians with access to the NDDS

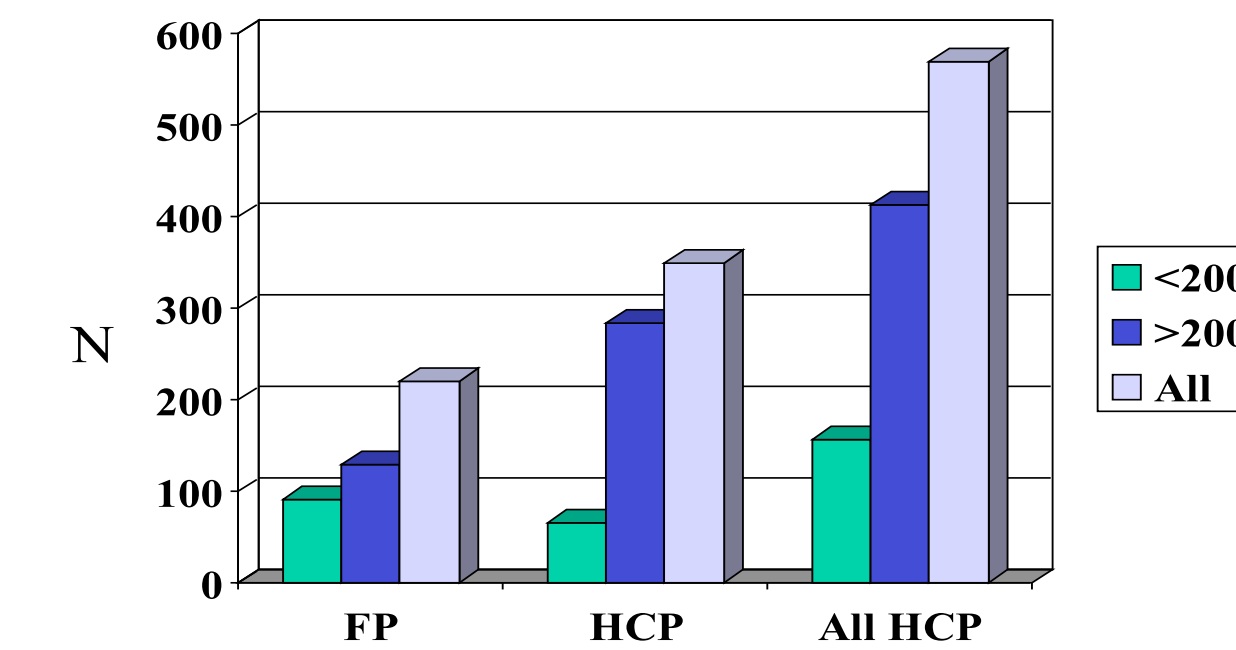
CONCLUSION

- The overall frequency of use of the NDDS by physicians is extremely low
- It appears that making the measure free and accessible may be somewhat effective at increasing the use of standardized developmental measures
- Future research should examine the actual practices, and the factors associated with low rates of use of developmental screening measures in family medicine settings in Canada
- There is a need for enhanced dissemination of guidelines so that interventions to improve developmental screening can be developed and implemented.
- Further investigations into the reasons for low rates of use of developmental screening measures in family practice.

Objective: Recent recommendations emphasize the importance of screening for developmental disabilities (DD) using simple measures such as the Nipissing District Developmental Screen (NDDS). However, many physicians do not perform routine screening with the assistance of objective measures. Several barriers to screening exist, including insufficient time or reimbursement, and a lack of access to inexpensive measures. The objectives of this study are to: (1) determine if providing the NDDS free of charge is associated with increased use of this measure; (2) investigate regional variations in the use of the NDDS in Ontario. **Setting:** Database of Ontario users of the NDDS. **Intervention:** Provision of free on-line access to the NDDS. **Main Outcome Measures:** Patterns of purchasing and downloading of the NDDS by physicians (FPs) and health care professionals (HCPs) before and after the implementation of the program. **Results:** Prior to the program, 91 FPs (0.9%) purchased the NDDS, and an additional 129 FPs (1.3%) downloaded the NDDS in the year after the start of the program. Including all other HCPs increased the estimate to 504 (5%). Adjusting for group practice increased the estimate to 16.5% of all HCPs who had access to the NDDS. There were no significant differences in NDDS usage by FPs between Central, Southwestern, and Northern Ontario ($p > 0.05$). Significantly fewer FPs in Eastern Ontario accessed the NDDS than in other areas of the province ($p < 0.0001$). **Conclusions:** In summary, despite measures to increase usage, a minority of FPs access the NDDS in Ontario. However, provision of free access to the NDDS may be effective at removing barriers to screening, as indicated by a three-fold increase in use of the NDDS. Further research is required to investigate the reasons for these trends, so that effective methods to increase the use of developmental screening measures in clinical practice can be implemented. **Key words:** developmental disability, screening measures, family medicine, practice patterns

- The NDDS is a parent or health care professional administered screening tool for children.
- The distributors of the NDDS were approached to determine the number of purchases or downloads of the test by “physicians” or “other health care professionals”.
- To account for shared access to the NDDS, the number of purchases or downloads was adjusted for the proportion of physicians in group practice.
- Regional variations were determined using the map and summary tables for the Local Health Integration Networks (LHINs) in Ontario.

Figure 2. Purchases (<2006) and Downloads (>2006) of the NDDS by Physicians (FP), Health Care Professionals (HCP) and All Health Care Professionals (FP + HCP)



	NDDS Requests	Proportion in group practice (%)	Proportion in Individual or Other Practice	Total FPs with group access	Total with individual/other access	Total number with access to NDDS (Group + Individual)	Proportion using the NDDS/Total Number of FP (%)
Purchases Prior to 2006	156	59.8	40.20	450.58	62.71	513.29	5.11
Downloads After 2006	348	57	43.00	958.08	149.64	1107.72	11.02
All HCPs	504	59.8	40.2	1455.72	202.61	1658.33	16.50
Purchase Prior to 2006	91	59.8	40.20	262.84	36.58	299.42	2.98
Downloads After 2006	129	57	43.00	352.94	55.47	408.41	4.06
All FP Access	220	59.8	40.2	635.43	88.44	723.87	7.20

FPs represents those individuals who purchased or downloaded the NDDS and identified themselves as physicians. All HCPs represents those individuals who purchased or downloaded the NDDS and identified themselves as health care professionals added to those identified as FPs. All FP access represents the sum of purchases (prior to October 2006) and downloads (after 2006) of the NDDS by FPs. *The estimated number of family physicians in Ontario used was 10,053¹⁸.

Table 2. Geographic Distribution of Physicians (FPs) and all Health Care Professionals (all HCPs) that Downloaded the Nipissing District Developmental Screen (NDDS) in Ontario after October, 2006.

Geographic Area	LHINS Number	Total Number of Family Physicians/General Practitioner	Number of NDDS Downloads	Proportion in group practice (%)	Proportion in Individual or Other Practice	Total FPs with group access*	Total FPs with individual/other access	Estimated Number with access to NDDS	Proportion accessing the NDDS/total number of FPs (%)
ALL HCPs									
Southwestern Ontario	1,2,3,4	1942.91	76	47.25	52.75	173.45	40.09	213.54	10.99
Central Ontario	5,6,7,8,9,12	5015.34	202	36	64.00	351.24	129.28	480.52	9.58
Eastern Ontario	10,11	1619.4	33	48.5	51.50	77.30	17.00	94.30	5.82
Northwestern Ontario	13,14	768.16	37	29	71.00	51.83	26.27	78.10	10.17
FPs									
Southwestern Ontario	1,2,3,4	1942.9	22	47.25	52.75	50.21	11.61	61.81	3.16
Central Ontario	5,6,7,8,9,12	5015.3	89	36	64.00	154.75	56.06	211.71	4.22
Eastern Ontario	10,11	1619.4	7	48.5	51.50	16.40	3.61	20.00	1.24
Northwestern Ontario	13,14	768.2	11	29	71.00	15.41	7.81	23.22	3.02

LHIN refers to Local Health Integration Networks in Ontario which provide estimates of the number of physicians in each geographic distribution.¹⁸ See Figure 1 for a diagram of LHIN locations and geographic distribution. *The average size of group practice was estimated at 4.83 physicians per group.¹⁹ FPs represents those individuals who purchased or downloaded the NDDS and identified themselves as physicians.

INTRODUCTION

- In Canada pediatric primary care is largely provided by family physicians.
- Most FPs assess child development, but the frequency of use of objective screening tests is unknown.
- New recommendations recommend the use of developmental measures during well-baby visits.
- The Ontario government recently purchased the rights to the NDDS, and made the test available free of charge to all residents in the province since October of 2006.
- The purpose of this study was to :
 - Estimate the frequency of use of the NDDS in Ontario
 - Determine regional variations in use of the NDDS
 - Determine if providing free access to the NDDS results in increasing use

