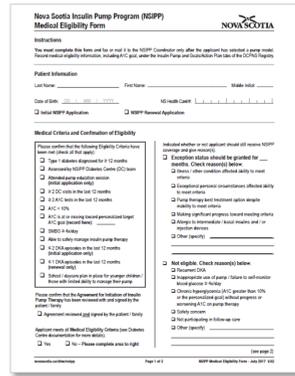


NOVA SCOTIA INSULIN PUMP PROGRAM (NSIPP)

NSIPP is a provincial program designed to help Nova Scotia youth and young adults with the cost of insulin pumps and pump supplies.

- Announced April 2013 | Launched September 2013
- Covers pumps and pump supplies (i.e., insertion sets, cartridges/ reservoirs, tape, and skin prep)
 - The NS Family Pharmacare Program helps with the cost of insulin, oral medication, glucose test strips and lancets, and urine ketone test strips as well as other medications
- For children and youth (≤ 25yrs) with type 1 diabetes
- Needs-based – considers family size and income
 - Most benefit to those who can least afford a pump/supplies
 - 100% coverage for those with after-tax household income below \$30,000
- Enrolees must meet all applicable Medical Eligibility or be given exception status by their Diabetes Care Team



PURPOSE

- Evaluate the first 3 years of the needs-based, provincially-funded, insulin pump program.

METHODS

- Timeframe: September 2013 – March 2016
- Required individual-level linkage of health records from NSIPP Administrative Database, the Diabetes Care Program of Nova Scotia (DCPNS) Registry, hospital discharge abstracts, and physician billing claims
- Goals of evaluation – describing the following
 - NSIPP POPULATION
 - NUMBER OF NSIPP ENROLEES MEETING AND MAINTAINING ELIGIBILITY CRITERIA
 - A1C VALUES AT ENROLMENT AND CHANGES OVER TIME
 - USE OF HEALTHCARE SERVICES
- Analytic approach
 - Describe population characteristics using counts and proportions
 - Present clinical outcomes as counts and proportions | means, medians, and ranges as appropriate

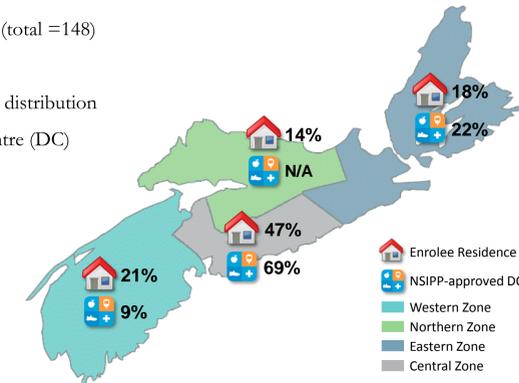
RESULTS

NSIPP POPULATION

- Stable enrolment between September 2013 and March 2016 at 58 enrolees per year (total =148)
 - Equal number of males and females
 - Geographic distribution of enrolees was consistent with overall population distribution
 - Some enrolees could not access an NSIPP-approved Diabetes Centre (DC) close to their home or place of work

At first enrolment		Total (N=148)
Coverage	New pump (+/- supplies)	63 (43%)
Type	Replacement pump (+/- supplies)	41 (28%)
	Supplies only	44 (30%)
Age Group	under 5yrs	10 (7%)
	6-12yrs	45 (30%)
	13-18yrs	51 (34%)
	19-25yrs	42 (28%)

72% were ≤18yr



NSIPP ENROLEES MEETING AND MAINTAINING ELIGIBILITY CRITERIA

Most enrolees met the appropriate Medical Eligibility criteria at and post-enrolment

- 100% had type 1 diabetes,
- 92% had diabetes for 12m or longer at enrolment
- 100% assessed by DC team (Medical Eligibility requirement)
- ≥ 86%* had 2 or more DC visits in the 12m prior to enrolment
 - This percentage remained high post-enrolment for those who renewed coverage, but decreased for those who discontinued coverage
- ≥ 64%* had 2 or more A1C tests in the 12m prior to enrolment
 - This percentage decreased post-enrolment for those who renewed or discontinued coverage
- 84%* were self-monitoring blood glucose at least 4 times per day in the 12m prior to enrolment
 - This percentage increased post-enrolment for those who renewed coverage, but decreased for those who discontinued coverage
- 99% of enrolees had 2 or fewer DKAs in year before enrolment
 - 100% had no more than 1 DKA per year in the first and second years post-enrolment

The major exception was the percentage of enrolees at or moving toward their personalized A1C goal

- Only 20% met their goal in the 12m prior to enrolment
 - This percentage remained low post-enrolment (15% in 1st and 18% in 2nd years post-enrolment)
 - 53% were within 1.0% of their goal in the 12m prior to enrolment, decreasing to 48% and 29% in the 1st and 2nd years post-enrolment
- Few enrolees met their personalized A1C goal, in part, because it was often set at the age-specific target rather than a more realistic and attainable value

Medical Eligibility Criteria	Renewal Status	Time Relative to Enrolment		
		12m Pre	Year 1 Post	Year 2 post
≥ 2 DC visits	Renewed	86%*	87%*	83%*
	Discontinued	86%*	80%*	60%*
≥ 2 A1C tests	Renewed	64%*	62%*	56%*
	Discontinued	64%*	60%*	55%*
SMBG ≥ 4x per day	Renewed	84%*	87%*	92%*
	Discontinued	84%*	77%*	80%*
≤ 2 DKAs 12m pre-enrolment ≤ 1 DKA post enrolment	Renewed	95%	100%	100%
	Discontinued	95%	100%	100%

* Data capture is incomplete: one NSIPP DC did not contribute data for all years and some enrolees living out-of-province were permitted to have one DC visit and one A1C test outside NS

RESULTS

A1C VALUES AT ENROLMENT AND CHANGES OVER TIME

- A1C did not change in the first year post-enrolment
 - Although numbers were small, initial observations suggest this finding held for new or existing pumpers as well as for children and young adults
- In the first year post-enrolment, A1C was lower for those who renewed (8.5%) versus discontinued (8.9%) coverage
 - By the second year, it was similar for both groups
- Few enrolees (14%) met age-specific A1C targets in the 12m prior to enrolment
 - This percentage decreased post-enrolment (10% in 1st and 7% in 2nd years post-enrolment)

A1C PRE- AND 1 YEAR POST-ENROLMENT

Renewal Status	Frequency	Average A1C	
		12m pre	Year 1 post
Renewed	49	8.4%	8.5%
Discontinued	15	9.0%	8.9%
Total	64	8.6%	8.6%

A1C PRE- AND 2 YEARS POST-ENROLMENT

Renewal Status	Frequency	Average A1C	
		12m pre	Year 2 post
Renewed	13	8.3%	8.8%
Discontinued	12	8.6%	8.8%
Total	25	8.4%	8.8%

USE OF HEALTHCARE SERVICES

- All enrolees saw a primary care provider (82%) and/or a specialist physician (100%) at least once in the 12m prior to enrolment
 - This percentage remained high post-enrolment for those who renewed coverage, but decreased for those who discontinued coverage – especially by the second year
- Few enrolees (11%) were admitted to hospital in the 12m prior to enrolment
 - This percentage decreased post-enrolment

Healthcare Service	Renewal Status	Time Relative to Enrolment		
		12m Pre	Year 1 Post	Year 2 post
≥ 1 Primary care provider office visit	Renewed	82%	79%	78%
	Discontinued	82%	80%	45%
≥ 1 Specialist physician office visit	Renewed	100%	100%	100%
	Discontinued	100%	80%*	75%*
≥ 1 Hospitalization	All	11%	6%	5%

* Some office visits for physicians on alternative payment structures were not reflected in the physician billing data and, by extension, the table above for those who discontinued coverage

CONCLUSIONS

- Medical eligibility criteria were set up to help guarantee safety of program enrolees
 - There was good adherence to these criteria
- The low rate of attaining age-specific A1C targets speaks to the difficulty of achieving these targets
 - Highlights the importance of working with a specialized diabetes care team to set realistic, mutually agreed upon, personalized goals focussing on improved glycemic management
- Evaluation highlighted areas to target for improvement
 - Better targeting of communication to young adults given their lower participation in the program
 - Work on setting and documenting appropriate A1C goals
 - Improve access to local specialized diabetes care for pump users
 - Better understand why some enrolees did not continue in the program to ensure we are serving the needs equitably

DIABETES CARE PROGRAM OF NOVA SCOTIA

Website: diabetescare.nshealth.ca

The Diabetes Care Program of Nova Scotia (DCPNS) was originally one of the Provincial Programs funded by the Nova Scotia (NS) Department of Health & Wellness. In April 2016, the DCPNS transferred to the Nova Scotia Health Authority (NSHA). Implemented in 1991, the DCPNS has a mandate to standardize and improve the quality of care provided through Nova Scotia's 38 Diabetes Centres.

- The DCPNS:
- Advises on service delivery models
 - Provides support, services, and resources to diabetes healthcare providers
 - Establishes and monitors adherence to diabetes guidelines
 - Collects, analyzes, and distributes diabetes data for NS

DCPNS mission: *To improve, through leadership and partnerships, the health of Nova Scotians living with, affected by, or at risk of developing diabetes*