

CODING AND POPULATION ESTIMATES FOR THE NOVA SCOTIA HEALTH ATLAS GEOGRAPHIES

A PRIMER ON POPULATION DATA AND HOW TO USE POPULATION WEIGHTING FOR SPLIT DAs

Prepared by Beau Ahrens | March 2017

The Nova Scotia Health Atlas contains four main levels of geography, where each geography is nested in the next higher-level. The smallest is the Census Dissemination Areas (DAs), which serve as the building block for the subsequent, higher-level geographies: Community Clusters, Community Health Networks, and Management Zones (Figure 1). The three new geographic areas were developed for health service planning purposes through a series of consultation process with local health service providers by a team of researchers and officials from the Department of Health and Wellness (DHW), the Nova Scotia Health Authority (NSHA), and the Maritime SPOR SUPPORT Unit (MSSU). This technical primer describes the background of weighting some DAs, and how to read the population table accompanying this report, which shows the population of each level of geography based on the 2016 Census.

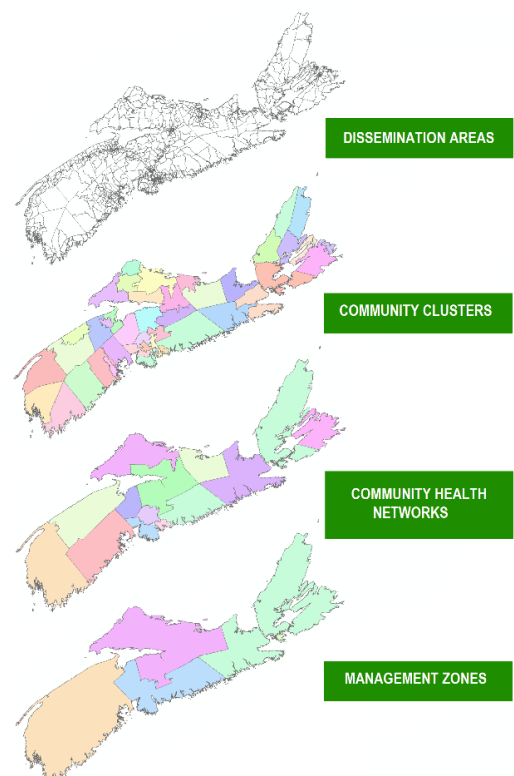
BACKGROUND

While these three geographies generally honour the original DA boundaries, 13 DAs of 1,658 total DAs in Nova Scotia needed to be split, as the boundaries of the DAs did not align well with the 'natural' communities. Once the 13 DAs were divided geographically to better represent the communities, weighing values were assigned based on the estimates of the population falling into the divided areas.

Creating Population Weight values for the 13 DAs

To estimate the populations (weights) of the 13 DAs, the Nova Scotia Civic Address File (NSCAF) was used. NSCAF is a dataset maintained by the Nova Scotia government containing point locations of all buildings in the Province. To approximate the proportion of people that fall into each of the split DA areas, the ratio of the counts of all buildings in each split area was calculated. It was not possible to distinguish types of buildings from the NSCAF dataset, therefore, the ratios assigned cannot be verified as to how close they are to the actual ratios of the number of residents per building. However, given the lack of data showing the population counts in more granular-level

Figure 1 - Hierarchy of geographic areas



geographical areas, this is the best available means to approximate the proportion of DAs population. The participating officials knowledgeable about the communities containing these DAs verified that the approximation of the weights unlikely bias the weighting.

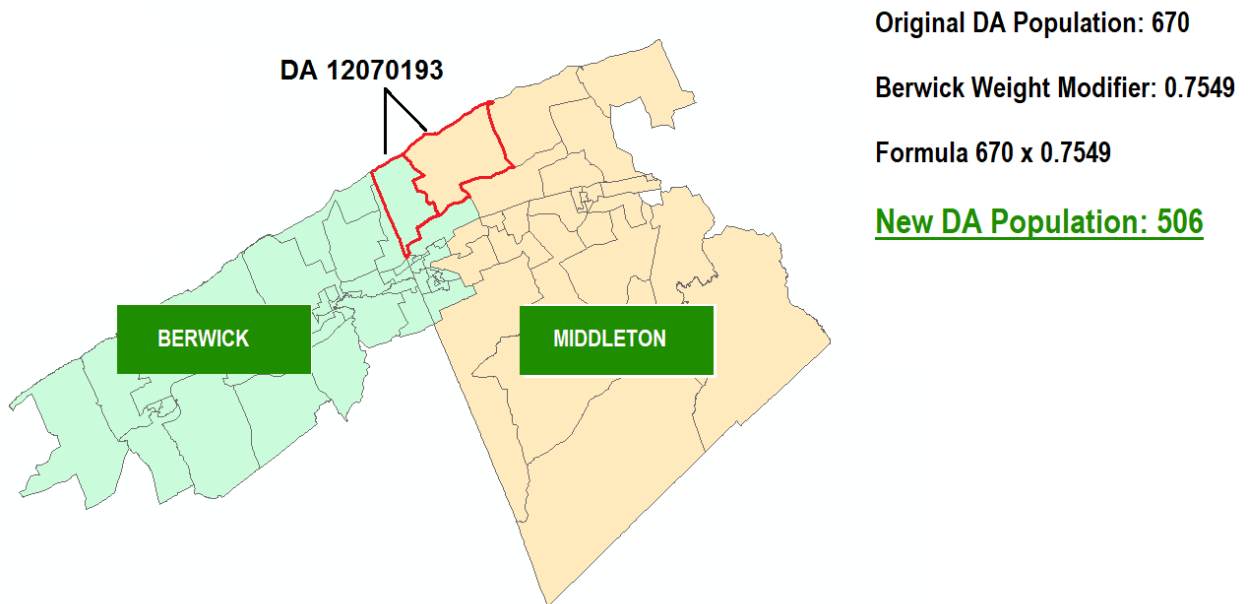
POPULATION SPREADSHEET

The Excel sheet showing the population of each geography based on 2016 Census is available on the [NS Health Atlas website](#).

USING THE POPULATION WEIGHTS

When performing population based analysis on these split DAs, the population weight should be applied to the numbers for each split DA portion. Figure 2 below shows the Berwick and Middleton clusters, and DA 12070193 that is split between the two clusters. The details of the splitting process are also shown in the figure, where DA12070193 (shown in red) was split between the two clusters. The figure also shows how a population weighting modifier is applied to population numbers. The result of the weighting process allocated 75.5% of the population to the Berwick DA, and 24.5% allocated to the Middleton DA.

Figure 2. Splitting and Weighting to Determine the population of the Berwick Portion of DA 12070193



A detailed list of split DAs and the weight modifier that should be used is shown in Table 1.

Table 1. Population Weighting by DA.

DISSEMINATION AREA	Community Cluster	Population Weight Modifier	Weighted 2016 Population
12070193	Berwick	0.7549	506
12070193	Middleton	0.2451	164
12080056	Hants North	0.8915	748
12080056	South Colchester	0.1085	91
12100161	Truro and Area	0.1078	63
12100161	South Colchester	0.8922	523
12100152	Truro and Area	0.4164	309
12100152	South Colchester	0.5836	434
12100153	Truro and Area	0.1038	73
12100153	South Colchester	0.8962	630
12110089	Springhill	0.5468	277
12110089	South Cumberland	0.4532	217
12110118	Springhill	0.9009	313
12110118	South Cumberland	0.0991	36
12180026	Baddeck / Whycomomagh	0.3455	246
12180026	Florence / Sydney Mines / North Sydney	0.6545	466
12180027	Baddeck / Whycomomagh	0.2847	160
12180027	Florence / Sydney Mines / North Sydney	0.7153	402
12090793	Fall River and Area	0.6383	715
12090793	Cole Harbour/Eastern Passage	0.3617	405
12090357	Halifax Needham	0.4746	391
12090357	Halifax Citadel	0.5254	433
12090715	Sackville North and Area	0.7268	660
12090715	Fall River and Area	0.2732	248
12090598	East Hants Corridor	1.0000	524
12090598	Eastern Shore	0.0000	0

CLUSTER IDs

To easily identify areas of interest, each cluster has been assigned a unique identifier value in the form of a ClusterID, comprised of a six-digit number. The makeup of the ClusterID is based on three sets of two-digit ID numbers. These two-digit numbers correspond to the Zone, Network, and Cluster respectively. An example cluster ID is shown in Figure 3 below, which corresponds to the East Hants Corridor cluster (Cluster ID 020412). As the figure also shows there is a value of 02 for the Management Zone (Northern Zone), and a value of 04 for the Community Health Network Colchester/East Hants), and a value of 12 for the Cluster. Zones are assigned values from 01 to 04, networks from 01 to 14, and clusters from 01 to 54.

Figure 3- An Example Cluster ID for East Hants Corridor Cluster



QUICK LOOKUP TABLES

The following three tables [Tables 2-4] present the list of every unique Cluster ID [Table 2], every unique Network ID [Table 3], and every two-digit ID value for each segment of the Cluster ID (Zone, Community Health Network, and Cluster) [Table 4] for easy reference.

Table 2 - Unique ClusterID values for each Community Cluster

Community Cluster	Cluster ID	Community Cluster	Cluster ID
Bridgewater	010101	Baddeck / Whycomomagh	030828
Chester and Area	010102	Cheticamp	030829
Liverpool	010103	Dingwall	030830
Lunenburg / Mahone Bay	010104	Inverness	030831
Digby / Clare / Weymouth	010205	New Waterford	030932
Shelburne/Lockeport	010206	Sydney and Area	030933
Yarmouth	010207	Dominion / Glace Bay	030934
Annapolis Royal	010308	Florence / Sydney Mines / North Sydney	030935
Berwick	010309	Dartmouth North	041036
Kentville	010310	Dartmouth South	041037
Middleton	010311	Dartmouth East	041038
Wolfville	010312	Cole Harbour/Eastern Passage	041039
East Hants Corridor	020413	Preston/Lawrencetown/Lake Echo	041040
Economy / Glenholme	020414	Tantallon/ Timberlea/ SMB	041141
Hants North	020415	Sambro Rural Loop	041142
South Colchester	020416	Armdale/ Spryfield/ Herring Cove	041143
Truro and Area	020417	Halifax Needham	041144
Amherst	020518	Halifax Chebucto	041145
Cumberland North/ North Shore	020519	Fairview	041146
South Cumberland	020520	Clayton Park	041147
Springhill	020521	Halifax Citadel	041148
New Glasgow / Westville / Stellarton	020622	Bedford / Hammonds Plains	041249
Pictou West	020623	Sackville South	041250
Antigonish	030724	Sackville North and Area	041251
Guysborough / Canso	030725	Fall River and Area	041252
Sherbrooke	030726	Eastern Shore/ Musquodoboit	041353
Port Hawkesbury / L'Ardoise / Isle Madame	030827	West Hants	041454

Table 3 - Unique NetworkID values for each Community Health Network

COMMUNITY HEALTH NETWORK	NETWORK ID	COMMUNITY HEALTH NETWORK	NETWORK ID
Lunenburg & Queens Community Health Network	0101	Inverness, Victoria, & Richmond Community Health Network	0308
Yarmouth, Shelburne, & Digby Community Health Network	0102	Cape Breton Community Health Network	0309
Annapolis and Kings Community Health Network	0103	Dartmouth / Southeastern Community Health Network	0410
Colchester and East Hants Community Health Network	0204	Halifax Peninsula / Chebucto Community Health Network	0411
Cumberland Community Health Network	0205	Bedford Sackville Community Health Network	0412
Pictou Community Health Network	0206	Eastern Shore Musquodoboit Community Health Network	0413
Antigonish & Guysborough Community Health Network	0307	West Hants Community Health Network	0414

Table 4 - Two Digit Place ID codes for Zones, Networks, and Clusters (used in Cluster, Network and Zone IDs)

GEOGRAPHY	NAME	PLACE ID
Management Zone	Western	01
	Northern	02
	Eastern	03
	Central	04
Community Health Network	Lunenburg & Queens Community Health Network	01
	Yarmouth, Shelburne, & Digby Community Health Network	02
	Annapolis and Kings Community Health Network	03
	Colchester East Hants Community Health Network	04
	Cumberland Community Health Network	05
	Pictou Community Health Network	06
	Antigonish & Guysborough Community Health Network	07
	Inverness, Victoria, & Richmond Community Health Network	08
	Cape Breton Community Health Network	09
	Dartmouth / Southeastern Community Health Network	10
	Halifax Peninsula / Chebucto Community Health Network	11
	Bedford Sackville Community Health Network	12
	Eastern Shore Musquodoboit Community Health Network	13
	West Hants Community Health Network	14
Cluster	Bridgewater	01
	Chester and Area	02
	Liverpool	03
	Lunenburg / Mahone Bay	04

Digby / Clare / Weymouth	05
Shelburne/Lockeport	06
Yarmouth	07
Annapolis Royal	08
Berwick	09
Kentville	10
Middleton	11
Wolfville	12
East Hants Corridor	13
Economy / Glenholme	14
Hants North	15
South Colchester	16
Truro and Area	17
Amherst	18
Cumberland North/ North Shore	19
South Cumberland	20
Springhill	21
New Glasgow / Westville / Stellarton	22
Pictou West	23
Antigonish	24
Guysborough / Canso	25
Sherbrooke	26
Port Hawkesbury / L'Ardoise / Isle Madame	27
Baddeck / Whycomomagh	28
Cheticamp	29
Dingwall	30
Inverness	31
New Waterford	32
Sydney and Area	33
Dominion / Glace Bay	34
Florence / Sydney Mines / North Sydney	35
Dartmouth North	36
Dartmouth South	37
Dartmouth East	38
Cole Harbour/Eastern Passage	39
Preston/Lawrencetown/Lake Echo	40
Tantallon/ Timberlea/ SMB	41
Sambro Rural Loop	42

Armdale/ Spryfield/ Herring Cove	43
Halifax Needham	44
Halifax Chebucto	45
Fairview	46
Clayton Park	47
Halifax Citadel	48
Bedford / Hammonds Plains	49
Sackville South	50
Sackville North and Area	51
Fall River and Area	52
Eastern Shore/ Musquodoboit	53
West Hants	54
