



Population based funding

Data availability and example

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OMA Economics, Policy and Research

What we need to know

What is the catchment area (geographic boundary)?

Data Resources available

Costing:

- Age/Sex adjusted total health care cost (CIHI)
- Age/Sex/Risk Adjusted total health care cost
- Existing LHIN expenditures (Hospitals, CCAC, etc.)
- Health Care Institution Funding (via Public Accounts)
- Physician Costs (OHIP Claims)
- Community Lab Costs (Lab Claims)
- Publicly funded drug costs (ODB)

Data Resources available

Physician Supply:

- Current Number of GPs (by model)
- Current Number of Specialists (by specialty)
- Historic number of GPs and Specialists

Patient Experience:

- Overall satisfaction with health care in the community
- Attachment to Primary Care
- Access to Primary Care
- Access to Specialty Care
- Patient Integration Experience
- Walk-in / ED Use

Data Resources available

Demographics (examples):

- Total Population by Age and Sex
- Household Income Demographics
- Household Population by Mother Tongue
- Household Population by Religion
- Household Population by Visible Minority Status
- Household Population by Aboriginal Identity

Projected Demographics (depending on geographic area):

- Total Population by Age (2018 – 2041)
- Household Income (2018 – 2038)

Data Resources available

Examples of demographic questions we can answer:

- Where can I find the highest concentration of families with young children in my area?
- What is the visible minority presence in my area? How is that expected to change in five years?
- How are the household incomes in my areas projected to change in the next 10 years?
- How many households in my area commute to work by car? By public transit?

Question

How much funding is required to provide health care to an entire defined population?

For example - Guelph



Population of Guelph

In 2016 the population of Guelph was estimated to be 131,790.

AGE	Male Pop	Female Pop
0-4	3,875	3,630
5-9	3,930	3,780
10-14	3,830	3,625
15-19	4,060	3,995
20-24	5,045	5,030
25-29	4,925	4,920
30-34	4,635	4,815
35-39	4,340	4,460
40-44	4,285	4,615
45-49	4,435	4,605
50-54	4,830	4,835
55-59	4,255	4,565
60-64	3,430	3,825
65-69	2,805	3,265
70-74	1,950	2,410
75-79	1,350	1,845
80-84	1,080	1,455
85-89	760	1,190
90+	290	825
TOTAL	64,100	67,690
	131,790	

Population of Guelph

In 2016 the population of Guelph was estimated to be 131,790.

AGE	Male Pop	Female Pop	Per Capita Cost - Male	Per Capita Cost - Female
0-4	3,875	3,630	\$3,737	\$3,351
5-9	3,930	3,780	\$1,314	\$1,220
10-14	3,830	3,625	\$1,336	\$1,380
15-19	4,060	3,995	\$1,485	\$1,756
20-24	5,045	5,030	\$1,409	\$1,794
25-29	4,925	4,920	\$1,550	\$2,458
30-34	4,635	4,815	\$1,703	\$3,022
35-39	4,340	4,460	\$1,860	\$2,754
40-44	4,285	4,615	\$2,120	\$2,493
45-49	4,435	4,605	\$2,542	\$2,656
50-54	4,830	4,835	\$3,120	\$3,056
55-59	4,255	4,565	\$3,921	\$3,518
60-64	3,430	3,825	\$5,021	\$4,209
65-69	2,805	3,265	\$6,990	\$5,860
70-74	1,950	2,410	\$9,010	\$7,419
75-79	1,350	1,845	\$11,385	\$9,739
80-84	1,080	1,455	\$14,905	\$13,689
85-89	760	1,190	\$21,074	\$22,155
90+	290	825	\$24,520	\$25,678
TOTAL	64,100	67,690		
	131,790			

Population of Guelph

In 2016 the population of Guelph was estimated to be 131,790.

AGE	Male Pop	Female Pop	Per Capita Cost - Male	Per Capita Cost - Female	Estimated Expenditure - Male	Estimated Expenditure - Female
0-4	3,875	3,630	\$3,737	\$3,351	\$14,482,434	\$12,165,600
5-9	3,930	3,780	\$1,314	\$1,220	\$5,164,604	\$4,611,702
10-14	3,830	3,625	\$1,336	\$1,380	\$5,116,113	\$5,000,866
15-19	4,060	3,995	\$1,485	\$1,756	\$6,027,951	\$7,015,519
20-24	5,045	5,030	\$1,409	\$1,794	\$7,109,851	\$9,025,093
25-29	4,925	4,920	\$1,550	\$2,458	\$7,633,247	\$12,095,173
30-34	4,635	4,815	\$1,703	\$3,022	\$7,892,189	\$14,551,641
35-39	4,340	4,460	\$1,860	\$2,754	\$8,071,527	\$12,283,071
40-44	4,285	4,615	\$2,120	\$2,493	\$9,083,599	\$11,506,054
45-49	4,435	4,605	\$2,542	\$2,656	\$11,273,951	\$12,230,839
50-54	4,830	4,835	\$3,120	\$3,056	\$15,067,596	\$14,775,940
55-59	4,255	4,565	\$3,921	\$3,518	\$16,684,240	\$16,061,923
60-64	3,430	3,825	\$5,021	\$4,209	\$17,220,406	\$16,097,723
65-69	2,805	3,265	\$6,990	\$5,860	\$19,606,318	\$19,133,974
70-74	1,950	2,410	\$9,010	\$7,419	\$17,569,492	\$17,879,038
75-79	1,350	1,845	\$11,385	\$9,739	\$15,369,573	\$17,967,609
80-84	1,080	1,455	\$14,905	\$13,689	\$16,096,942	\$19,917,090
85-89	760	1,190	\$21,074	\$22,155	\$16,016,145	\$26,364,206
90+	290	825	\$24,520	\$25,678	\$7,110,795	\$21,184,093
TOTAL	64,100	67,690			\$222,596,970	\$269,867,153
	131,790				\$492,464,123	

Population of Guelph – Risk Adjusted

Risk adjustment can be applied based on prospective risks for 2016 estimated by the CIHI Grouper.

AGE	Male Risk Adjustment	Female Risk Adjustment	Estimated Expenditure - Male	Estimated Expenditure - Female	Risk Adjusted Expenditure - Male	Risk Adjusted Expenditure - Female
0-4	99.6%	96.2%	\$14,482,434	\$12,165,600	\$14,421,557	\$11,698,227
5-9	92.6%	94.3%	\$5,164,604	\$4,611,702	\$4,780,368	\$4,348,331
10-14	90.4%	96.7%	\$5,116,113	\$5,000,866	\$4,626,134	\$4,837,334
15-19	97.5%	98.1%	\$6,027,951	\$7,015,519	\$5,878,312	\$6,884,306
20-24	94.6%	93.3%	\$7,109,851	\$9,025,093	\$6,723,311	\$8,420,799
25-29	94.2%	94.0%	\$7,633,247	\$12,095,173	\$7,187,329	\$11,371,727
30-34	90.4%	92.3%	\$7,892,189	\$14,551,641	\$7,134,050	\$13,430,238
35-39	94.2%	91.4%	\$8,071,527	\$12,283,071	\$7,600,412	\$11,230,179
40-44	93.6%	92.1%	\$9,083,599	\$11,506,054	\$8,505,444	\$10,596,560
45-49	90.4%	87.1%	\$11,273,951	\$12,230,839	\$10,191,709	\$10,649,198
50-54	93.4%	85.1%	\$15,067,596	\$14,775,940	\$14,075,314	\$12,579,274
55-59	86.9%	91.1%	\$16,684,240	\$16,061,923	\$14,490,902	\$14,633,231
60-64	93.3%	86.2%	\$17,220,406	\$16,097,723	\$16,060,952	\$13,884,344
65-69	89.8%	88.2%	\$19,606,318	\$19,133,974	\$17,614,523	\$16,871,654
70-74	96.7%	89.5%	\$17,569,492	\$17,879,038	\$16,987,702	\$16,009,152
75-79	93.8%	88.4%	\$15,369,573	\$17,967,609	\$14,414,299	\$15,876,525
80-84	99.5%	90.1%	\$16,096,942	\$19,917,090	\$16,018,047	\$17,940,625
85-89	96.9%	97.2%	\$16,016,145	\$26,364,206	\$15,513,272	\$25,617,238
90+	101.6%	92.7%	\$7,110,795	\$21,184,093	\$7,221,805	\$19,640,710
TOTAL			\$222,596,970	\$269,867,153	\$209,445,443.67	\$246,519,651.34
			\$492,464,123		\$455,965,095	

Total Guelph Health Expenditure

Based on CIHI's National Health Expenditure Trends in 2016 using Ontario data, and using the 2016 Census profile for Guelph, we are able to estimate the Age/Sex adjusted total health expenditure for the **entire Guelph population to be \$492,500,000** in 2016.

This is an estimate based on average Ontario population health expenditure.

After risk adjustment the prospective health expenditure is estimated at \$455,965,095.

Risk adjustment scores notes:

- Grouper outcome from 2015 with 2 years lookback
- The prospective scores are for 2016.
- Records with invalid Canadian postal codes are excluded
- Individual risk scores are standardized to population average risk score
- The standardized risk scores are aggregated to age-gender group level.



Hospital and Other Health Institutions in Guelph

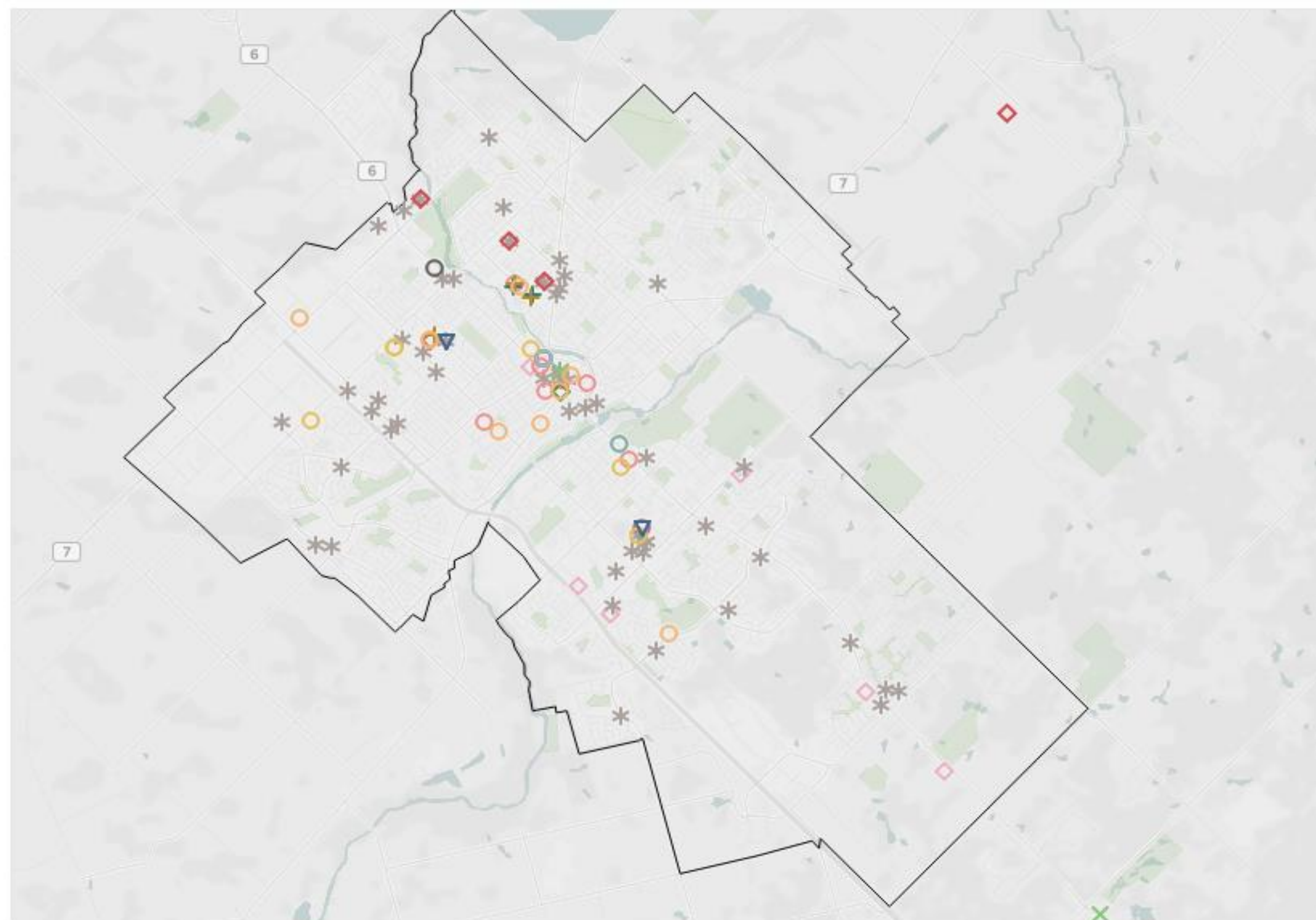
Based on information found from “Land Information Ontario” below is a list of Health Service Locations (not including physician groups).

Service Type	Number of Locations
Children's Treatment Centre	1
Community Health Centre	1
Community Support Service	9
Elderly Persons Centre	2
Family Health Team - Contract	2
Hospital - Corporation	3
Independent Health Facility	9
Laboratory - Hospital	2
Laboratory - Specimen Collection Centre	6
Long-Term Care Home	5
Mental Health and Addiction Organization	12
Midwifery Clinic	3
Public Health Unit Office	1
Retirement Home	9

Hospital and Other Health Institutions in Guelph

<https://public.tableau.com/profile/oma.era#!/vizhome/Guelphv1/Dashboard1?publish=yes>

Non-Physician Ministry of Health Service Locations in Guelph*



- Service Type / Facility**
- AIDS Bureau
 - Children's Treatment..
 - Community Health C..
 - Community Support ..
 - Elderly Persons Cent..
 - Family Health Team ..
 - Hospital - Corporation
 - Independent Health ..
 - Laboratory - Hospital
 - Laboratory - Specim..
 - Long-Term Care Home
 - Mental Health and A..
 - Midwifery Clinic
 - Pharmacy
 - Public Health Unit Of..
 - Retirement Home

- Service Type / Facility**
- ▼ AIDS Bureau
 - Children's Treatment..
 - Community Health C..
 - Community Support ..
 - ◇ Elderly Persons Cent..
 - × Family Health Team ..
 - + Hospital - Corporati..
 - Independent Health ..
 - + Laboratory - Hospital
 - Laboratory - Specim..
 - ◇ Long-Term Care Home
 - Mental Health and A..
 - Midwifery Clinic
 - * Pharmacy
 - Public Health Unit O..
 - ◇ Retirement Home

Note:
 [1] Two service facilities are outside the City of Guelph boundary.
 [2] Some facilities overlay one another because they share a common address.

Source:
 2016 Census - Boundary files, Statistics Canada.
 Ministry of Health Service Location, Land Information Ontario, Ministry of Health and Long-Term Care, February 14, 2019.

Prepared by: OMA Economics, Policy & Research, February 2019.



Physician Supply in Guelph

Based on data from the OPHRDC the following count of MDs is available:

	Guelph	Waterloo-Wellington	Ontario
Number of Family Physicians	180	770	14,347
Number of Specialists	151	585	16,237
Number of Total Physicians	331	1,355	30,584

Health Care Spending in Guelph

Data from the Public Accounts of Ontario 2017-2018 show health institution spending:

	Guelph	Sub-Total
Homewood Health Centre	\$37,000,000	
Guelph General Hospital	\$119,000,000	
St. Joseph's Health Centre	\$36,000,000	
Hospital Total		\$192,000,000
Guelph CHC	\$10,000,000	
Guelph FHT	\$10,000,000	
Guelph Independent Living	\$3,000,000	
Eden House Nursing Home	\$3,000,000	
Lapointe Fisher Nursing Home	\$4,000,000	
Stonehenge Therapeutic Community	\$3,000,000	
Other	\$1,000,000	
Other Institution Total		\$35,000,000
TOTAL		\$227,000,000

Health Care Spending in Waterloo Region

Data from the Public Accounts of Ontario 2017-2018 show health institution spending within the Waterloo-Wellington area that has a location within Guelph:

	Waterloo Region	Sub-Total
Alzheimer Society Waterloo Wellington	\$500,000	
Canadian Mental Health Association Waterloo Wellington Branch	\$24,000,000	
Thresholds Homes And Supports Inc	\$10,000,000	
Wellington-Dufferin-Guelph Health Unit	\$15,000,000	
TOTAL		\$49,500,000

CONFIDENTIAL – CLAIMS DATA

Data from OHIP claims, ODB, data sharing and other sources:

	Guelph	Sub-Total
Total Fee For Service for Guelph Patients	\$60,000,000	
Total Alternate Payments for Guelph MDs	\$36,000,000	
Community Laboratory Claims	\$8,000,000	
Ontario Drug Benefit	\$43,000,000	
TOTAL		\$147,000,000

CONFIDENTIAL – SUMMARY

Combining all available data we get \$423M

	Guelph	Total
Hospitals	\$192M	
Other Institutions	\$35M	
Physicians	\$96M	
Community Lab Claims	\$8M	
Ontario Drug Benefit	\$43M	
LHIN Regional Based Programs	\$49M	
TOTAL		\$423M

Health Care Experience Survey - Guelph

Select results from the HCES indicating Guelph's health care system and the extent of integration in health care delivery in Guelph.

THEME	QUESTION	Guelph	Ontario
OVERALL	Satisfied with health care in your community	89.2%	87%
Attachment	Not have a regular provider	3.6%	5.3%
Access to Primary Care	Your provider returns calls on the same day	83.6%	79.5%
Access to Primary Care	Your provider offers an after-hours clinic	63.5%	39.7%
Patient Experience	How often your provider knows your medical history	87%	84.6%
Specialist	After you were advised, you waited less than 30 days to see a specialist	38.8%	36%
Specialist	90 days or more to see a specialist	33.5%	31%
Specialist	Specialist had information from your provider about the reason of visit	93.9%	92.3%
Specialist	Your provider seemed informed about care you got from the specialist	82.8%	85.2%
Integration	Test results were not available at the time of a scheduled appointment	11.3%	13.3%
Integration	Your provider was up-to-date following discharge from hospital	83.3%	77.5%
Integration	Provider reviewed prescription medicine(s) you are using, last 12 months	71.4%	71.2%
ED/Walk-in	Care you received in the ED was Fair/Poor care	26.6%	25.9%
ED/Walk-in	ED visit was for a condition that could have been treated by provider	40%	43%