

# SPECIAL REPORT

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GARY YOKOYAMA, THE HAMILTON SPECTATOR

Neil Johnston, a McMaster University researcher, worked on Code Red for three years as chief data analyst. He calls the gap between Hamilton's haves and have-nots 'absolutely appalling.'

## CODE RED: Great divide between our poor and our prosperous

### Continued from WR1

From emergency room visits to hospital admission rates to cardiovascular incidents to psychiatric-related emergencies to respiratory-related problems, the worst-performing neighbourhoods in the city suffer with rates that are 10, 20, even 30 times higher than the best-performing neighbourhoods.

"The bottom line is the picture is so consistent across all these measures — in things that affect the elderly, things that affect children, in the cost of delivering care — it's an undeniable gradient," Johnston added.

But there's an even bigger part to this story.

This undeniable gradient, as Johnston describes it, is not the result of chance or random events.

There are clear reasons for the great divide between Hamilton's healthiest and unhealthiest neighbourhoods.

Health is influenced by a complex mix of many factors that have been broadly labelled the social determinants of health. (See box on WR5)

They include factors such as education and social-support networks and early-childhood development, but chief among the determinants of health is income.

Simply put, the wealthier you are, the healthier you are.

In a city like Hamilton, with worrisome levels of poverty, that's a problem.

After mapping health outcomes at the neighbourhood level, The Spectator then analyzed and mapped a dozen different social and economic variables at the neighbourhood level.

Similar patterns that exist between the

# CODE RED

WHERE YOU LIVE AFFECTS YOUR HEALTH

**DAY 1:** Mapping the health of Hamilton

**DAY 2:** The cost of disparity

**DAY 3:** The early years: starting out

**DAY 4:** The earning years: home and job

**DAY 5:** The later years: aging and health

**DAY 6:** Healthy mind, healthy body

**DAY 7:** What's next? Finding answers

**ON THE WEB:** Visit [thespec.com](http://thespec.com) for a slide show of Mayor Fred Eisenberger as he visits the Lang Street neighbourhood where he grew up.

social and economic maps and the health maps are stunning. (See WR3 and WR6)

The common denominators scream out. Those neighbourhoods with high rates of emergency room visits, no family physician, respiratory-related problems and psychiatric emergencies are the same neighbourhoods, in general, that have the lowest median incomes, lowest dwelling values, highest rates of people living below the poverty line and highest dropout rates from school.

"We have health care but really, if you look at it from overall health, it's really

illness care," said Mark Chamberlain, president and CEO of Trivaris, but also chair of the Hamilton Roundtable for Poverty Reduction.

"We're really dealing with things once they've happened to us.

"The real health care system is what we're currently calling our social system," Chamberlain said. "They're the things that are actually dealing with the social determinants of health, the preventative stuff.

"If I can help this person get a job, they'll be healthier and it will cost us less money. If I can help a person through a mental illness, they'll be healthier and they will cost us less money. If we can help a person go from homelessness to a home, they will be healthier and it will cost us less money.

"It goes on and on and on."

Terry Cooke, president and CEO of the Hamilton Community Foundation (a philanthropic organization with assets of \$126 million that provides grants to charitable organizations, programs and scholarships), said people should be "shocked and disturbed" by the numbers.

"I think the extent of the poverty and the disparities are more gaping than any of us would have known going into this," said Cooke, a former chairman of Hamilton-Wentworth region. "It would have been reminiscent of what you might anticipate in Detroit or the south side of Chicago or some Third World countries, certainly not what you expect in southern Ontario.

"When you have these disparities in emergency room visits or life expectancies, you're looking at dramatic and destructive impacts of concentrated poverty."

The findings of this project attack the

notion that universal health care in Canada is the same as equal health care, and by extension, equal health. The vast disparities in health outcomes between neighbourhoods show there's nothing equal about the health of Hamiltonians.

"I think people should be outraged about these discrepancies and that we should take them on as a community," said Dr. Chris Mackie, a Hamilton associate medical officer of health.

"Let's have that serious discussion as a community about how we can bring those people that are suffering up to the level that we would accept."



Meet Jessica Bartley, a paramedic who covers the lower-central city, from Kenilworth to Dundurn, water's edge to the foot of the Mountain.

At age 28, with six years under her belt, she still has a fresh-faced enthusiasm for her job, although she admits that she's turned a little harder, a little more cynical.

"Everyone told me when I started to work here 'You don't want to work here, Jessica, you're too nice, you'll get hard,'" she recalled. "And it's true.

"The biggest thing I've learned in this job is that you can only help those who want help," Bartley said. "That has been the most frustrating thing for me because I get so frustrated, angry, sad."

Bartley grew up on a farm in Niagara-on-the-Lake and admits she led a sheltered life.

"Coming to Hamilton, one of the first things that shocked me was driving down the street, maybe 2 o'clock in the morning, and seeing parents and kids running across the street," she said. "What are kids doing up so late at night?"

"Or moms pushing their babies in strollers down the street that late at night. Totally shocked."

Bartley is a first responder, which means she drives her emergency-equipped SUV around the lower city — alone — ready to be first on the scene of a medical call.

It's a little scary, she admits, and she's had her share of people take a swing at her. On an average night, there are plenty of drunks to deal with, bar fight warriors, drug overdoses, street people and a lot of mental health issues to sort out, often with the help of police.

Not long ago, she showed up at a 5 a.m. call for a report of a woman crying on someone's front porch.

"Her mascara is running, she's got one shoe on, it's cold out but she has no real clothes on for winter or the weather, her purse is half strewn all over the sidewalk," Bartley recalled. "She says that she's running from somebody and she doesn't need any help.

"She was a street person, so she works on the street for money. Eventually, she said that she's addicted to cocaine and she doesn't know how she got there, so we just took her to the hospital."

Or there was the time she responded to a call for a girl bleeding in the toilet.

"There was a girl slumped over on the toilet," Bartley said. "Her boyfriend was there and they had pulled a baby out from the toilet.

"She didn't even know she was pregnant, she says, and her boyfriend is screaming in the background, wanting to have a paternity test to see if the baby was his because he didn't think it was.

"I remember the baby's on this blanket between the bathroom and the kitchen,"

Continued on WR4

### HOW WE DID IT

An application was made to the Canadian Institute for Health Information and St. Joseph's Healthcare Hamilton for access to emergency-room visit data and hospital admission records for the period April 1, 2006, to March 31, 2008, for every person listing Hamilton as a home address. The records are rendered anonymous prior to release and do not include personal information that would allow the identities of individual patients to be revealed.

Nearly 400,000 records were turned over to Neil Johnston, a health research faculty member at McMaster University, who is also associated with the Firestone Institute for Respiratory Health, St. Joseph's Healthcare. He also runs the Ontario Physician Human Resources Data Centre for the province's health ministry.

An application was also made to ServiceOntario for access to more than 12,000 death records from 2006 to 2008, which were used to calculate average age at death by neighbourhood.

Johnston agreed to collaborate with The Spectator on a pro bono basis for this project. He maintained exclusive control of the health records and the raw data throughout the project.

Each health record includes the age and gender of the patient, the date of the emergency room or hospital visit, the length of stay, the precise medical codings for every procedure performed and a geographic marker.

The anonymized health records could be grouped into larger geographic areas, called census tracts, which are used by Statistics Canada to measure a wide variety of social, economic and health variables within urban regions of Canada.

There are 135 census tracts in the amalgamated City of Hamilton, and they match up well with the city's traditional neighbourhoods. Because of data suppression, small population sizes or missing data, five census tracts could not be used for mapping purposes.

Johnston assembled the raw data into spreadsheets that examined a number of health variables by census tract. The spread-

### CODE RED OPEN FORUM

Join us for a Code Red Open Forum at 7:30 p.m. on Thursday, April 22 in the Hamilton Spectator auditorium at 44 Frid St. Panel members include reporter Steve Buist, researcher Neil Johnston, Hamilton Community Foundation CEO Terry Cooke and Dr. Chris Mackie, a Hamilton associate medical officer of health. This session is free, but you must register in advance. Call our Open Forum line at 905-526-3535 to register.

sheets were then turned over to Spectator investigative reporter Steve Buist.

Buist converted the health information into specific tables and rankings for each census tract. He also produced the spreadsheets and census-tract rankings for the social and economic variables pulled from Statistics Canada 2006 census data.

Selected health and socioeconomic rankings were then forwarded to Patrick DeLuca, a mapping and statistics expert in McMaster's Centre for Spatial Analysis. He also agreed to collaborate on a pro bono basis.

DeLuca created 26 main maps — 12 for health variables, 12 for socioeconomic variables, one death statistics map and one overall map, which provided a cumulative ranking for each census tract based on the 24 health and socioeconomic variables.

The maps distribute the 130 census tracts into quintiles. Each quintile represents 20 per cent of the 130 census tracts, from highest to lowest for the variable being measured.

The maps, rankings and rates were then analyzed to examine the connections that exist between health and socioeconomic variables in Hamilton's neighbourhoods.

For access to a full database of maps, rankings, neighbourhood descriptions and statistics, please visit [thespec.com](http://thespec.com).