thing where many governments feel they went a step too far."

Physician groups and some economists say that the way to address declining workloads is to train more physicians. Sweetman suggests increasing trainees by about 1% every five or six years to replace the hours lost.

According to Giuffre, increasing the number of family physicians could "dramatically" improve patient satisfaction and reduce unnecessary utilization, as patients with family doctors use 30% fewer services, on average.

However, Steve Buick, director of pol-

icy and communications for the Institute of Health Economics in Edmonton, Alberta, said in an email that a "perceived shortage" is why physician compensation "went out of control in the first place."

"We're so anxious to keep all the docs we train and avoid stories about new grads being 'turned away' from the system, that we're distorting it to keep them. We have a lot of surgeons in Alberta who'd love to do more surgery, but we can't afford the OR [operating room] time; we can't cut their pay rates, so we just keep splitting the ORs among more and more guys." An alternative may be to stretch the current supply further through more team-based care, telemedicine and group visits — initiatives that Cunningham says have helped contain per capita physician spending in BC.

As physicians cost more per service provided, Di Matteo predicts "there will be a greater incentive to find lowercost substitutes, whether that means more online medicine or nurse practitioners and pharmacists doing more." — Lauren Vogel, *CMAJ*

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Mount Pleasant Village: planned for public health

hen residents finished moving into the Mount Pleasant Village development in Brampton, Ontario, they joined their new neighbours in one of the first urban communities in Canada designed to improve public health by reducing diabetes and obesity through healthy living.

Physicians continually advise their patients to be more active and manage their weight to prevent the growing problem of chronic obesity-linked conditions, including type 2 diabetes and cardiovascular disease. For many patients, however, being active is difficult because of the way the environments in which they live are built, as Dr. Richard Jackson, a professor at the UCLA's Fielding School of Public Health points out.

"We're giving them advice they can't act on," he says.

In Brampton, a sprawling city west of Toronto that is home to more than 500 000 people, public health officials and city planners recognized that neighbourhoods built more for cars than for people work against public health goals. They were also conscious of their area's specific health challenges.

"Generally, suburban areas have a problem, but we have an even bigger problem here in Brampton because of our tremendous rates of diabetes," says Alex Taranu, Brampton's manager of architectural design services.

In Ontario's Peel Region, where Brampton is situated, 1 in 10 adults has diabetes, and 47% of residents were



The typical suburb is built for cars. It discourages active forms of transportation, like walking, by making the path meandering and monotonous.

overweight or obese as of 2005. This is a higher prevalence of diabetes than the national estimate by Statistics Canada, which found that 6.5% of Canadians over age 12 had diabetes and 52.5% of Canadians were overweight or obese in 2012. Many of Brampton's residents commute by car or train to Toronto, and the city is not particularly pedestrianor cyclist-friendly.

In 2009, Peel Public Health commissioned guidelines for building healthy neighbourhoods from Toronto's St. Michael's Hospital. The hospital produced a report called the *Peel Healthy Development Index*. The index provides specific recommendations to lay foundations for communities that give people a better chance to live actively.

Planners designed Mount Pleasant

Village specifically around the *Healthy Development Index*'s recommendations. Taranu describes the community as an "urban transit village," because at the core of the community is a public transit hub where Peel Region bus lines and a commuter train intersect. Residences, schools, services and transit are all within a five-minute walk of each other.

The *Healthy Development Index* emphasizes walkability and proximity to services and employment. The index also urges planners to build on a human, not automotive, scale.

Often, developers build serpentine suburbs and big box stores with cars in mind. This can make incorporating active forms of transportation like walking, cycling, or even using public transit, difficult. Many suburbs are impermeable, with little connectivity between streets. This makes locations that may be close to each other in a Euclidean sense too far to walk because of the meandering path the network of roads demands.

This problem mainly affects newer cities, says John Spence, a professor who researches determinants of physical activity at the University of Alberta in Edmonton.

"These cities were built after the automobile was invented," he says. "They're really pancaked; there's no density to them."

Designing dense, interconnected neighbourhoods with frequent intersections is one ingredient in improving an area's walkability. Another important aspect is creating pleasant walking experiences. For example, the index recommends transparent glass in shop windows, street trees and street walls so that pedestrians feel safe and have an attractive environment.

The *Healthy Development Index* recommends that 70% or more of buildings be flush with the sidewalk, rather than fronted by a parking lot, making them more accessible to pedestrians while making parking more challenging. In Mount Pleasant Village, parking spaces are tucked behind homes, and not every home is allotted a space.

One of the challenges Taranu and other planners encountered when designing Mount Pleasant Village was that the index's recommendations — designed with public health in mind — do not mesh with the bylaws in Brampton.

For example, Brampton has a minimum parking requirement and a minimum distance a building must be located from a sidewalk that is much higher than the *Healthy Development Index* recommend. The index also promotes mixeduse buildings, but the rezoning process to create such a building is onerous.

In places where buildings, roads, shops and schools exist, but don't follow the best urban form for public health, things get tricky. Projects in these areas are intensification or infill projects, filling in or reconstructing parts of the city that have already been built up.

"This notion of urbanizing or retrofitting suburbia is one of the most challenging parts of planning," Taranu says, "particularly in the large subdivisions done in the 1960s and 70s when basically everything was by car. The streets were not designed other than for fast driving." — Catherine Cross, *CMAJ*

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