Crowded emergency rooms adding hidden costs to health care systems

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It's no secret that emergency health care in Canada is in crisis.

Staff shortages have caused some emergency departments to close

temporarily as already stretched resources are pushed to the breaking point by the COVID-19 pandemic.

But the crisis has been brewing across the developed world for decades, says U of A business professor Mohamad Soltani, as the demand rises and the supply of services decreases.

"It's happening everywhere," says Soltani, who specializes in the latent interactions between health care policy makers, service providers and patients.

Over the past two decades in the United States, for example, the number of ED visits has increased by 50%, while the number of EDs decreased by 10%.

Compounding the problem is the hidden burden passed on from emergency departments to other parts of the health care system—a toll that has not been revealed until now.

In a study published last spring in the flagship journal *Manufacturing & Service Operations Management*, Soltani argues that previous studies estimating the toll of ED crowding do not account for extra post-ED care. He found there was a 5% increase in post-ED health care resources used when the workload on emergency medicine physicians was higher.

Soltani's team followed post-ED care within 30 days for patients discharged from the ED or inpatient unit in a hospital in the U.S. Midwest and concluded that the ED environment is a driver of health care use elsewhere in the system.

Overburdened emergency physicians tend to order more tests for less-severe patients followed by recommending more followup care to these patients. This eventually puts more pressure on family physicians,

specialists, imaging service facilities and inpatient clinics.

"Because of all the health and legal liabilities, ED physicians stay on the safe side and recommend patients see a family doctor. This may be just the beginning of a series of followup visits in various channels of care," says Soltani.

"If you have hypertension or high cholesterol, it might not be killing you, but the physician leans towards caution."

Meanwhile, patients are following up on these recommendations more than before.

"The combined effect of the behavior both by the physician and the patient has led to this extra post-ED care we are observing."

At the same time, crowding in emergency departments is a bellwether of shortages elsewhere in the health care system, says Soltani.

"If family physicians don't have appointment time available or they need to get a test done fast, they will send their patients to the ED," he says, adding that services provided in the ED are unique and often difficult for physicians to provide in their own clinics. The result is a kind of vicious cycle driving up health care costs.

Soltani's findings provide crucial evidence for developing policy that accurately accounts for the cost of overcrowding in emergency departments, as part of the larger health care system. But they come as no surprise to many ED physicians.

"The first time I presented these results to clinicians, the ED physicians told their colleagues, "These are the things we've been telling you forever and you didn't believe us,'" he says.

"When clinicians see the evidence, there is this kind of conversation between them. What you hope is it will eventually have some impact on their practice and the way the health care system is governed."

More information: Mohamad Soltani et al, Does What Happens in the ED Stay in the ED? The Effects of Emergency Department Physician Workload on Post-ED Care Use, *Manufacturing & Service Operations Management* (2022). DOI: 10.1287/msom.2022.1110

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