

## LETTERS

### Effects of helmet use on costs of motorcycle crashes

We read with interest the recent valuable contribution to road safety and injury prevention literature by Pincus and colleagues.<sup>1</sup> There is considerable evidence that appropriate helmet use greatly alleviates the burden of motorcyclists' injuries. Previous studies have also shown that motorcyclists who do not wear helmets have more severe injuries (including traumatic brain injuries), resulting in higher health care costs and an increased likelihood of requiring care beyond the hospital.<sup>2,3</sup> Therefore, it is appropriate and more sensible that we calculate and compare the cost to our health care system of injuries received by motorcyclists using helmets against those received by motorcyclists without helmets. There is definitive evidence that helmets reduce mortality, traumatic brain injury and hospital expenditures.<sup>3</sup>

The main limitation of the study by Pincus and colleagues<sup>1</sup> is that the authors did not separate the costs associated with use of protective devices by injured motorcyclists, despite a 2012 systematic review and meta-analysis showing that motorcycle helmet use reduces morbidity and contributes to substantial health care cost savings.<sup>2</sup> According to this systematic review, the mean total hospital charge for motorcyclists involved in a crash was \$4184.26 for those who wore helmets and \$7383.31 for those who did not. If Pincus and colleagues had separated their data to compare the costs of motorcycle crashes between those who wore helmets and those who did not, it would have been a helpful contribution to the decade-long debate on the value of appropriate helmet use to traffic safety.<sup>1,2,4</sup>

Analysis of data related to trauma from motorcycle crashes has shown that motorcyclists are more than 3.5 times as likely to die or become injured when compared with other motor vehicle drivers,<sup>5</sup> and the main cause of death was a head injury, whereas lower-limb injuries account for most hospital admissions.<sup>5</sup> Use of protective devices, namely helmets, has been shown to prevent injury, disability and death by reducing serious head injuries.<sup>6,7</sup> Therefore, "all operators and riders of motorcycles are required by

Ontario provincial law to wear a helmet when on a motorcycle or motor-assisted bicycle."<sup>8</sup>

Worldwide, motorcyclists who do not wear helmets are at high risk for serious injury and death in the event of a crash, which places excessive economic burden on society through costly medical interventions and long-term disability.<sup>9</sup> A Cochrane systematic review concluded that helmets reduced the risk of head injury by about 69% and death by about 42% among motorcyclists.<sup>10</sup>

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