

**Response to Gooch et al.**

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For Peer Review

Gooch et al. present a useful summary of the burden of neurological diseases in the USA.<sup>1</sup> Their presentation omits some important recent findings and fails to draw a critical implication about mitigating the burden of neurologic diseases. Gooch et al. correctly show that dementias are the most costly neurological disorders but they probably overstate the burden of dementias. Prevalence estimates from other sources, including those used by the World Health Organization, suggest significantly lower prevalence of dementias in the USA.<sup>2</sup> Credible recent data indicates that the age-related incidence and prevalence of dementias is falling in the USA and other industrialized nations.<sup>3,4</sup> In the British Cognitive Function and Aging Studies I & II, there was a 20%-25% decline in age-specific dementia prevalence over the last generation.<sup>4</sup> What accounts for these large effects? **Mixed dementia, often with a significant vascular component, is recognized as a major cause of dementia.**<sup>5</sup> The declining age-specific prevalence of dementia is likely a partial consequence of the dramatic fall in cerebrovascular disease described nicely by Gooch et al. Another contributing factor may be a better educated population. Education has a significant protective effect on dementia incidence, possibly by improving cognitive reserve.<sup>6</sup> The key implication is that there are existing and highly cost-effective interventions that diminish the burden of a major neurological disorder. It's unlikely that we've exhausted the benefits of improving control of vascular risk factors and education. Enhancing primary care and public education are likely to yield considerable dividends in terms of mitigating the burden of dementing disorders.

The implication that we have effective methods to reduce disease burden through existing prevention strategies applies to some of the other disorders described by Gooch et al. The USA does relatively poorly, for example, in preventing serious motor vehicle accidents, with obvious consequences for the incidence of traumatic brain and spinal cord injury.<sup>7</sup>

Gooch et al. appropriately favor increased advocacy to boost research on and improve clinical care of neurological diseases. Advocacy should extend to promoting public health, primary care, and social interventions that prevent neurological disease.

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