

## Optometry in times of pandemic: Spanish flu (1919) versus COVID-19 (2020)

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In Australia, the first known case of Spanish flu – also referred to as ‘pneumonic influenza’ in this country – was reported on 10 January 1919.<sup>1</sup> Fifty days later, on 1 March 1919, the very first issue of *Clinical and Experimental Optometry* – then called *The Commonwealth Optometrist* – was published.<sup>2</sup> Notwithstanding the significant morbidity, mortality, social upheaval and economic disruption associated with such a pandemic, this timing was fortuitous from the perspective of ophthalmic history, as it helps us understand the impact of the Spanish flu upon optometry at that time.

In this editorial, we shall examine how optometry is being impacted in 2020 by the novel coronavirus disease 2019 (COVID-19) pandemic, primarily within Australia, but also drawing on evidence from overseas. We will contrast this with the way the profession was impacted in Australia during the Spanish flu pandemic in 1919.

We ascertained information about what was happening to Australian optometry during the Spanish flu by reading through the entire Volume 1 of *The Commonwealth Optometrist*. This comprised monthly issues, from Issue 1 (March 1919, which reported matters that occurred during the previous month; that is, essentially since the beginning of the pandemic) to Issue 12 (February 1920, at which time the pandemic was well and truly over). We also searched the Trove database of the National Library of Australia for published material linking the terms ‘optician’, ‘optometrist’ or ‘optometry’ with ‘Spanish flu’, ‘pneumonic influenza’ or ‘influenza’, published during 1919. Although the Spanish flu was clearly a world-wide pandemic, it was

frequently referred to as an epidemic in both the lay and professional press.

### **Comparing the two pandemics**

#### **COVID-19 (2020)**

COVID-19 is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease was initially identified in December 2019 in Wuhan, the capital of Hubei province in China, and has since spread globally. It is a sad irony in the context of this editorial that world attention was first drawn to COVID-19 disease by an eye-care practitioner – ophthalmologist Li Wenliang – working in Wuhan, who subsequently died from the disease.<sup>3</sup> The World Health Organization declared COVID-19 a ‘Public Health Emergency of International Concern’ on 30 January 2020 and a pandemic on 11 March 2020.

Common symptoms of COVID-19 include fever, dry cough, fatigue, sputum production, loss of smell, and shortness of breath. While the majority of cases result in mild symptoms, some progress to viral pneumonia and multi-organ failure. Emergency symptoms include difficulty breathing, persistent chest pain or pressure, confusion, difficulty walking, and bluish face or lips. From an optometric perspective, it is interesting that conjunctivitis can be the only presenting sign and symptom of COVID-19.<sup>4</sup> The time from exposure to onset of symptoms is typically around five days but may range from two to 14 days.<sup>5</sup>

At the time of writing (1 June 2020) more than 6.2 million confirmed cases have been reported across 185 countries and territories world-wide, resulting in more than 373,000 deaths.<sup>6</sup> In Australia, the first confirmed case of COVID-19 was detected on 25 January 2020,<sup>6</sup> which means that at the time of writing, we are four months and one week into the pandemic. So far, there have been 7,220 confirmed cases and 102 deaths in Australia.<sup>6</sup> It has become apparent that

those most vulnerable to contracting COVID-19 are the elderly or people with weakened immune systems.

The very strict containment measures which were imposed early in this pandemic by the Australian government<sup>7</sup> (discussed below) appear to have largely curtailed the outbreak, with less than 30 new cases per day and 11 deaths reported over the past month.<sup>6</sup> However, given that the Spanish flu manifested in three waves of increasing severity over a nine-month period (discussed below), it is by no means certain that the current pandemic is drawing to a close.

The virus is primarily spread between people during close contact, often via small droplets produced by coughing, sneezing, or talking. The droplets quickly fall onto objects or surfaces and people may also become infected by touching a contaminated surface and then touching their eyes, nose or mouth. Infection can also occur following certain medical procedures that induce aerosolisation, causing the virus to be suspended in the air for long periods; two examples of this in optometry would be air-puff tonometry and nasolacrimal lavage. The virus is most contagious during the first three days after the onset of symptoms, although spread may be possible before symptoms appear and in later stages of the disease.<sup>5</sup>

In early March 2020, the Australian government offered clear advice and introduced strict measures in an attempt to curb the spread of COVID-19. These include frequent hand washing, maintaining physical (social) distance from others (especially from those with symptoms), covering coughs and sneezes with a tissue or inner elbow, keeping unwashed hands away from the face, and self-isolation at home whenever possible. The use of a face covering is recommended for those who suspect they have the virus and their caregivers; however, the Australian government does not recommend the use of face covering by the general public.<sup>7</sup>

Other measures have included: closure of some state borders and all international borders; mandatory two-week quarantine of all international arrivals; curtailing public gatherings; cancelling of sporting events; closure of facilities in which large groups of people would come together, such as theatres, gymnasiums and live entertainment venues/events; and urging the public to upload a contact tracing app onto their mobile phones. Further restrictions introduced include the closure of all bars, restaurants and businesses that involve close personal contact, and the suspension of elective surgery – the rationale for the latter being to guard against transmission, conserve personal protective equipment and avoid health services from becoming overwhelmed.<sup>7</sup> Many of these restrictions are being eased at the time of writing.

Currently, there is no vaccine or specific antiviral treatment for COVID-19. Management involves the treatment of symptoms, supportive care and isolation. Oxygenation and mechanical ventilation are often required in severe disease.<sup>5</sup>

### Spanish flu (1919)

The pandemic started in 1918, the last year of the First World War, and passed through soldiers in Western Europe in successively more virulent waves. It was referred to as the ‘Spanish flu’ – not because it originated in Spain, but due to it first being widely reported there. Unusually, the Spanish flu affected healthy young adults much more than the usual targets of a flu: children, the elderly or those with weakened immune systems.<sup>1</sup>

The virus spread rapidly around the world as soldiers returned from active service at the end of the War. During the Spanish flu, all arrivals into Australia were by sea, as international aviation had yet to be established. The Australian Quarantine Service monitored the spread of the pandemic and implemented maritime quarantine on 17 October 1918, after learning of outbreaks in New Zealand and South Africa. Because of the remoteness of Australia and protracted travel times from the theatres of war, there was an inevitable delay in the virus reaching our shores. However, quarantine was eventually breached, and the virus arrived in Australia in January 1919.<sup>1</sup> New South Wales was the first state to officially proclaim an outbreak of pneumonic influenza on 27 January 1919, with Victoria following suit the next day.<sup>1</sup>

In New South Wales,<sup>8</sup> the pandemic manifested throughout 1919 in three ‘waves’:

Wave 1: Outbreak wave – 27 January to 18 March. Those who contracted the Spanish flu during this wave experienced typical flu symptoms of chills, fever and fatigue, and usually recovered after several days.

Wave 2: High mortality wave: 19 March to 27 May. The disease was more severe, requiring longer periods of bed rest and leading to an increased number of fatalities.

Wave 3: Highest mortality wave: 28 May to 30 September. Victims died within hours or days of developing symptoms, their skin turning blue and their lungs filling with fluid that caused them to suffocate.

By the end of September 1919, the pandemic was over, which means that the duration of the Spanish flu in Australia was a little less than nine months. It is estimated that 500 million people world-wide were infected with Spanish flu, with a death toll of 50 to 100 million. In Australia, around two million individuals (40 per cent of the population) were infected and the death toll was 15,000.<sup>1</sup>

### Impact on Australian optometry

#### Optometry practice

During the current COVID-19 pandemic, physical distancing and public gathering restrictions<sup>7</sup> have made the routine practice of optometry difficult, as these requirements largely preclude the conduct of a close eye examination.

Optometry Australia<sup>9</sup> offers the following general advice to optometrists.

- Ensure that all clinical and non-clinical staff know the signs of the coronavirus and are being vigilant.
- Carefully screen patients for symptoms of COVID-19 before they attend the clinic.
- Use preventative measures to limit the spread of virus.
- Exercise discretion and limit appointments to urgent cases.
- Triage using remote telehealth strategies if possible.

Unlike the situation in 1919, Optometry Australia has been able to rapidly disseminate important information to members via electronic means.

As a result of the above advice, most optometry practices around Australia have ceased routine care, with limited care remaining available, by special arrangement, for the management of urgent conditions. General advice offered to patients includes thorough washing of hands before and after

handling spectacles or contact lenses, and careful attention to hygiene practices when using all contact lens types (including daily disposable lenses) as well as the use of care systems for reusable contact lenses (such attention to hygienic contact lens practices should of course be encouraged at all times, not just during pandemics).<sup>10</sup>

We unearthed a few advertisements advising of suspension or curtailment of optometric services for brief periods during the Spanish flu. Optometry was also impacted by a reduced flow-through of patients during the peak of the pandemic, as evidenced from this note of July 1919 in *The Commonwealth Optometrist*: ‘Again in Victoria we are experiencing trouble, which is adversely affecting business. The second “Flue” (*sic*) wave temporarily skinned the Optical trade, but on all hands it is reported that, with the decline in severity of the plague, came a decidedly busy period for the Optometrist. Now we have industrial troubles, with severe unemployment, and restrictions in the use of gas and electrical current. Fortunately, the Optician has been among the favoured of the “powers that be”, in being exempted from the restrictions of power for industrial purposes.’<sup>11</sup>

According to Melbourne optometrist Mr E Wood, proper wearing of glasses can lessen the impact of influenza. He offered the following advice: ‘Readers are especially warned, during the influenza epidemic, to assure themselves that they are not injuring their constitution by endeavouring to carry on their work without the aid of glasses, if necessary.’<sup>12</sup>

#### Optometry-pharmacy practice

Optometry was often practised in conjunction with pharmacy, watchmaking and retail jewellery for a good part of the 20th century.<sup>13</sup> In a published profile of Victorian optometrists registered in 1937, some 18 years after the Spanish flu, 20 practitioners declared that they were in conjoint optometry-pharmacy practice.<sup>13</sup> During the Spanish flu, this conjoint arrangement was capitalised upon by a ‘chemist and optician’ in the town of Wellington, New South Wales, named AW Spence. This enterprising practitioner ran an advertisement in the *Wellington Times* (Figure 1) early in the pandemic (February 1919), in which he described various ‘types’ of influenza, and advocated treatment using his own concoction, ‘Spence’s Cold and Influenza Cure’.<sup>14</sup> Chemist-optician P Truscott urged readers of *The*

*Muswellbrook Chronicle* to '... try our Bronchial Lozenges for that hoarseness and tickling cough'.<sup>15</sup>

### Hygiene practices and personal protective equipment

Optometry Australia<sup>9</sup> offers the following specific advice to optometrists regarding infection control and hygiene.

- Have a good understanding of infection control principles.
- Place information posters in your clinic or workplace.
- In suspected cases, provide a surgical mask to the patient (if a mask is available), and ask them to present to their general practitioner or an emergency hospital department immediately (after telephoning ahead to warn them that they are coming).

A recent survey by Pult,<sup>16</sup> conducted in Germany, Austria and Switzerland concerning optometric practices during the COVID-19 pandemic, found that 75 per cent of optometrists planned on wearing face masks during refractions and 69 per cent when fitting contact lenses. As well, 62 per cent of optometrists expected their patients to wear masks. Around 90 per cent of optometrists would, in addition to hand washing, disinfect their hands, and around 80 per cent expected their patients to do so

too. Less than one-third of optometrists favoured wearing safety spectacles, gloves and/or protective facial shields and 73 per cent planned on disinfecting worn frames after selection.<sup>16</sup>

The use of commercially available slitlamp barriers or breath shields (Figure 2) is encouraged, as they may provide a measure of added protection against the coronavirus. However, these barriers do not prevent contamination of equipment and surfaces on the patient side of the barrier, which may then be touched by staff and other patients and lead to transmission.<sup>17</sup> The slitlamp shield featured in Figure 2 was developed by Australian ophthalmologist Dr Neil Sharma, who contracted swine flu in 2009 while working as a registrar in Liverpool Hospital, New South Wales, which he attributed to a slitlamp examination of a patient who was unwell and coughing. This was despite both Dr Sharma and the patient wearing face masks at the time (Sharma N, 2020, personal communication).

During the Spanish flu pandemic, there was an awareness of the importance of hygiene practices by the public generally, and in optometric practice, as noted by the editor of *The Commonwealth Optometrist* in December 1919: The devastating pandemic which visited the Commonwealth early in the year forced the question of Hygienic and

prophylactic measures very prominently before the community and rendered the practice of something more intense than hygiene imperative in our consulting rooms.<sup>18</sup>

A number of optometrists put the theory of hygiene and prophylaxis into practice. Mr E Wood advised that he '... adopts the most improved methods of disinfecting all lenses and frames, thereby minimising all risk of infections'.<sup>12</sup> Mr Fist advised that everything used in his optometric consulting room '... is first sterilised in formaldehyde carbolic and steam'.<sup>19</sup> Travelling Newcastle optometrist D Price sought to assure those who might seek his services that he had not visited any areas infected by pneumonic influenza for over one month, and that he was unlikely to visit such areas while the pandemic continues (Figure 3).<sup>20</sup>

Although face masks appear to have been used extensively by nurses and the general public during the Spanish flu pandemic,<sup>1</sup> we found no mention of the use of personal protective equipment by Australian optometrists. It should be noted that optometric practice was very different in the early 20th century and many of the diagnostic procedures we take for granted today were not yet part of routine practice. Although contact lenses were invented in 1888 and subsequently used sparingly throughout Europe and the USA after that time, they were not fitted in Australia until 1929;<sup>2</sup> thus, there was no fitting of contact lenses during the 1919 pandemic. Cole<sup>2</sup> noted there is little evidence of optometrists using the slitlamp biomicroscope prior to 1920. Many optometrists used direct ophthalmoscopy, but tonometry was not performed as it required the use of an anaesthetic, which optometrists were precluded from using at the time.<sup>2</sup>

A related anecdote is an advertisement that appeared in *The Herald* newspaper in February 1919, offering a solution to the problem of glasses becoming 'steamed or misty' when using face masks during the pneumonic influenza. It was advised that this problem could be avoided '... by devoting just half a minute daily to rubbing on and then cleaning off a little "clearlens", a high-grade preparation specially manufactured for the purpose.' Readers were further advised that 'Clearlens may be purchased at one shilling of (*sic*) all chemists and opticians'.<sup>21</sup> The problem of glasses steaming up while wearing face masks remains an annoyance today.

**INFLUENZA**

Generally commences with a chill and feverishness, accompanied by a feeling of marked prostration, together with catarrhal symptoms.

There are several types of the disease.

**RESPIRATORY TYPE**—Discharge from the nose, sore throat, hoarseness, cough, bronchitis, etc.

**NERVOUS TYPE**—Pains in various nerves, tenderness of the skin, joint pains, etc.

**GASTRO-INTESTINAL**—Vomiting tenderness of abdomen, etc.

**TREATMENT**—Confinement to bed even in mild cases. Diet should be light and easily digestible, and one tablet of "Spence's Cold and Influenza Cure" should be taken every four hours.

This is a safe and certain remedy. Price 2/6 per bottle. Obtainable only from

**A. W. SPENCE**  
CHEMIST AND OPTICIAN, WELLINGTON. 'PHONE 67.

Figure 1. Advertisement of AW Spence in the *Wellington Times*<sup>14</sup> (Wellington, New South Wales), 3 February 1919 (adapted from Trove, National Library of Australia)



**Figure 2. Slitlamp protective breath shield (courtesy of Dr Neil Sharma, Protective Shields, <https://slitlampshield.com>)**

### Optometric education

Because of restrictions relating to public gatherings, all universities, which include the six Australian optometry schools, have currently closed their campus facilities. Teaching and learning is now being conducted remotely, utilising web-based tools to deliver tutorials and live or recorded lectures. Education is also being provided via the use of on-line teaching material, podcasts and other web-based teaching/learning platforms. Such practices have been adopted for some time to varying

degrees, but their use has been accelerated due to the COVID-19 pandemic.

Clinical training is one aspect of optometric education that is virtually impossible to deliver online. There appears to be no obvious solution to this, which has necessitated a temporary suspension of clinical training until the pandemic is largely over, at which time close proximity practitioner–patient interaction could resume. The closing of university campuses also severely restricts the capacity to conduct student assessments and examinations. Although open-book assignments can

be set and one-on-one web-based oral examinations are possible, closed-book examinations cannot be conducted.

There appears to have been some disruption to optometric training during the Spanish flu. The New South Wales Institute of Optometrists, which provided training in clinical optometry, noted in *The Commonwealth Optometrist*: The N.S.W. examinations as set down for the 24th and 25th February (1919), have not been held on account of the necessary restrictions, with regards to the Influenza Epidemic.<sup>22</sup> In May 1919, the Institute reported that restrictions forbidding any public meetings ‘... interfered with the holding of lecture classes, that would otherwise have been in full swing by now.’<sup>23</sup>

Aside from these two mentions, we found no other evidence of disruption to optometric education during the Spanish flu pandemic. It is likely that optometric education continued throughout 1919, with only occasional, relatively brief periods of disruption to teaching and examinations.

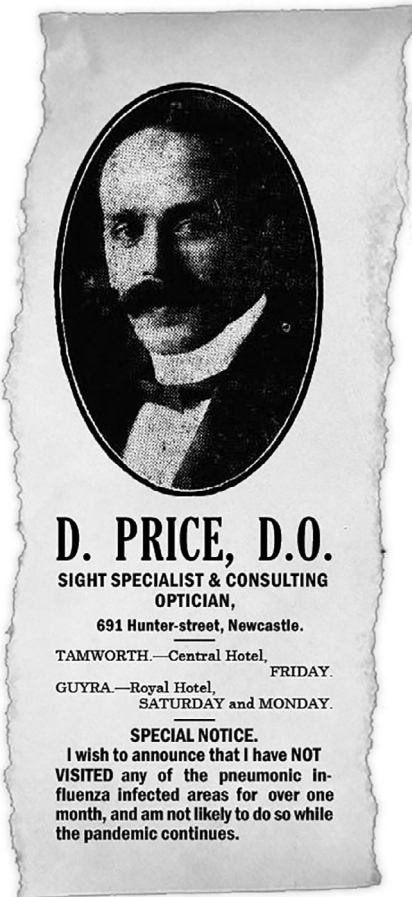
### Business meetings of optometric professional associations

There has been virtually no disruption to the conduct of optometric business meetings during the COVID-19 pandemic, as meetings that were due to be face-to-face have simply gone online. The practice of conducting online meetings in general has been evolving over the past decade, with the availability of interactive meeting software such as Skype and Zoom. For example, the Editorial Board of *Clinical and Experimental Optometry* operated as a hybrid in-person/online meeting in June 2019, with about six persons in a physical meeting room in Melbourne and another 15 participants joining online. This year the meeting will be wholly online. All other optometric associations and organisations appear to have similarly adapted.

The Spanish flu certainly curtailed the conduct of in-person meetings, but just as with educational activity, the disruption appears to have been minimal. In the first issue of *The Commonwealth Optometrist*, the following report appeared: ‘Unfortunately, owing to the necessary restrictions with regards to the influenza epidemic, the New South Wales Institution has not been permitted to hold its annual meeting, which would have taken place on 5th February (1919) ...’<sup>19</sup> This meeting did go ahead five weeks later, on 12 March 1919.<sup>24</sup>

Two further meetings of The New South Wales Institute of Optometrists were





**D. PRICE, D.O.**  
SIGHT SPECIALIST & CONSULTING  
OPTICIAN,  
691 Hunter-street, Newcastle.

TAMWORTH.—Central Hotel, FRIDAY.  
GUYRA.—Royal Hotel,  
SATURDAY and MONDAY.

**SPECIAL NOTICE.**  
I wish to announce that I have NOT  
VISITED any of the pneumonic influenza  
infected areas for over one  
month, and am not likely to do so while  
the pandemic continues.

**Figure 3. Advertisement of D Price in the *Daily Observer*<sup>20</sup> (Tamworth, New South Wales), 26 April 1919 (adapted from Trove, National Library of Australia)**

cancelled. In May 1919, it was reported in *The Commonwealth Optometrist*: The N.S.W. Institute of Optometrists was again obliged to forgo holding their monthly meeting, owing to the restrictions, still in force, which forbid any public meeting being held ...<sup>23</sup> In June 1919, a similar report appeared: 'Owing to the recurrence of the influenza epidemic in Sydney, it was deemed advisable to dispense with the usual meeting in the Institute this month.'<sup>25</sup> It appears that, apart from the above three meetings, all monthly gatherings of The New South Wales Institute of Optometrists went ahead throughout 1919.

As far as we can ascertain, all meetings of the Victorian Optical Association went ahead as planned during 1919, in the quaintly named 'Hookers Café', in Swanson Street, Melbourne. These meetings were typically attended by about 18 men. The only disruption we could find was that the President

was unable to attend the annual general meeting, due to '... being confined to bed with an acute attack of "flu".'<sup>26</sup>

### Optometry conferences

Face-to-face physical meetings have had to be curtailed during the COVID-19 pandemic due to restrictions relating to public gatherings both in Australia and overseas.<sup>7</sup> As a result, there has been a move to conduct some meetings online. For example, a number of meetings that were due to be hosted by state divisions of Optometry Australia have already been repackaged as web-based events, such as podcasts and live webinars. Most of these offerings will facilitate the earning of Continuing Professional Development points which are required for ongoing optometric registration.<sup>27</sup>

The idea of holding optometric clinical conferences (as distinct from business meetings) was in its infancy in 1919, and it appears that – through good fortune rather than avoidance planning – no optometry conferences were scheduled in Australia for the duration of the Spanish flu pandemic. The first conference of the six Australian State Optometry Associations was held on 3–6 December 1918 in Melbourne,<sup>2</sup> just before the pandemic started. *The Commonwealth Optometrist* reported that the Second Interstate Conference of Optometrists was held in Sydney from 21 to 24 October 1919,<sup>28</sup> which was just after the last wave of Spanish flu had abated in New South Wales.<sup>8</sup> By this time, restrictions on public gatherings and interstate travel had been lifted.

At this second conference, there was a banquet and theatre night. A 'ladies night' was also arranged, presumably for the wives of the exclusively male conference delegates (somewhat of a sexist notion by present standards). There was also a lunch served on a launch on Sydney Harbour. The conference was attended by 15 delegates, with a single delegate travelling to the meeting from each of Tasmania, Victoria and Queensland.<sup>28</sup>

### Important role of the journal

The important role of the Australian optometry journal in informing and advising practitioners of professional business and clinical matters during the Spanish flu ought to be self-evident from the above discussion. Optometrists were kept informed through the pages of *The Commonwealth Optometrist* about what was discussed and decided at business meetings, and the conduct and/or cancellation of business meetings, examinations and teaching sessions. Important

guidance on proper hygiene in an optometric clinical environment was also published, albeit following the pandemic.<sup>18</sup>

Publication of the journal was apparently not smooth sailing during the Spanish flu pandemic. In the August issue of *The Commonwealth Optometrist*, it was reported: 'Owing to the editorial staff of the "Optometrist" all being down with the flu, this issue is not up to the usual size.'<sup>29</sup> We also learn: 'Business houses are having a trying time. Some have the whole staff away ill, and are obliged to run their business single handed. We trust that soon all will be well again.'<sup>29</sup>

Even the esteemed editor of the journal did not escape the scourge of the flu: 'We regret to state that Mr. W. G. Kett is ill with influenza. All share in the hope that his recovery will soon be complete.'<sup>29</sup> (Kett did indeed recover, and it is hoped that a similar fate does not befall the current editor). Throughout 1919, in the regular 'Personal' column, the journal reported numerous cases of optometrists being seriously ill with pneumonic influenza, and sadly, a number of subsequent deaths.

The role of optometry journals in providing valuable peer-reviewed information during the current pandemic is also apparent. Although COVID-19 was only declared a pandemic about 12 weeks ago, 170 peer-reviewed scientific papers relating to eye care have already appeared online, as revealed by a PubMed search using the terms 'COVID-19' and 'eye'. Nine of these papers have appeared in the June 2020 issue of the British optometry journal *Contact Lens and Anterior Eye* alone.

Interestingly, over the past three months, the number of submissions to this journal has approximately doubled. This is presumably as a result of academics being unable to conduct research in their universities and thus having more 'spare time' at home to write journal articles.

In this issue of *Clinical and Experimental Optometry*, three additional contributions of relevance to COVID-19 are published (indeed, four if you count this editorial). Willcox et al.<sup>30</sup> review the literature and evaluate evidence for the ocular surface as a route of COVID-19 infection. In a letter to the editor, Navel et al.<sup>31</sup> speculate whether there might be a link between COVID-19 and myopia pandemics, due to enforced time spent indoors (more near work/screen time and less exposure to sunlight). The capacity for a clear acrylic (plexiglass) slitlamp shield to reduce droplet exposure is explored by Murnain et al.<sup>32</sup>

## Conclusions

In Australia, the mortality and morbidity of the Spanish flu pandemic (two million cases and 15,000 deaths)<sup>1</sup> was far worse than that of the COVID-19 pandemic so far (7,220 cases and 102 deaths).<sup>6</sup> Paradoxically, the impact on society has been the reverse. The social upheaval and economic hardship visited upon the Australian population during the COVID-19 pandemic to date has been much greater than that experienced during the Spanish flu pandemic – the latter appearing to have been considered a mere annoyance, causing only brief, intermittent periods of disruption throughout 1919.

The situation in Australian society generally during the two pandemics is a reflection of what is/was happening to optometry. At present with COVID-19, optometry practices have closed; many optometrists are unemployed; optometry educational establishments have been shut down; optometry students are unable to receive face-to-face clinical training; and optometrists, like everyone else, are largely confined to their homes. This contrasts sharply with the fate of optometry during the Spanish flu pandemic: most practices remained open and professional associations continued their business with minimal interruption. Optometric education suffered some disruption, but life in general seemed to continue on, more or less as normal.

The irony is that the harsh environment in Australia at present is not so much due to the actual COVID-19 disease; rather, it can be attributed to the severe government-imposed social and economic restrictions<sup>7</sup> aimed at preventing a repeat of the significant mortality and morbidity caused by the likes of the Spanish flu pandemic a century ago.<sup>1</sup>

## A final thought

This editorial is a little longer than usual, but there is good reason for this – so that our optometry colleagues in 2121 (assuming that all ophthalmic refractive anomalies and ailments have not been obviated by genetic engineering, computer technology or the like, rendering the practice of optometry redundant) will have a comprehensive overview of what was happening to Australian optometry during the COVID-19 pandemic 101 years previously, and the Spanish flu pandemic 101 years before that!

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