

### Ophthalmia neonatorum prophylaxis

#### Dear Editor:

We read with concern the Canadian Pediatric Society's (CPS's) position statement of March 6, 2015, "Preventing Ophthalmia Neonatorum."<sup>1</sup>

The authors argue that gonococcal conjunctivitis is rare and erythromycin is of "questionable efficacy." They note that prophylaxis is not effective against chlamydial conjunctivitis, may cause irritation, and may negatively impact mother–infant bonding. They state that there are more effective means of preventing ophthalmia neonatorum (ON) based on microbiological screening of pregnant women or the infants of unscreened women, with antimicrobial treatment of those exposed or infected. They conclude that physicians should advocate for the rescinding of mandatory ocular prophylaxis laws.

Our concerns are that this document fails to adequately review the evidence regarding the efficacy of ocular prophylaxis. It fails to consider the risks posed by cessation of prophylaxis and overstates the risks of its continuation. It fails to present evidence that the proposed alternative approach is more effective and to adequately consider the risks associated with this proposed alternative, in particular on socially disadvantaged groups.

With regard to the efficacy of prophylaxis, the statement relies on a meta-analysis by Darling and McDonald,<sup>2</sup> which is summarized as showing that the evidence "regarding the efficacy of prophylactic agents used to prevent gonococcal and chlamydial conjunctivitis was not of high quality." We are concerned that this does not adequately reflect the findings of this meta-analysis. Darling and McDonald find that the lack of evidence of an effect size for prophylaxis is due to a lack of adequate power related to low prevalence of maternal gonorrhoea. They note that adequately powered studies are difficult to conduct, and it would now be considered unethical to randomize newborns at risk for development of gonococcal ophthalmia neonatorum (GON) to receive no prophylaxis because prophylaxis is generally regarded as being highly effective. In relation to chlamydial conjunctivitis, although the CPS statement reports that "ocular prophylaxis is not effective," Darling and McDonald,<sup>2</sup> in fact, find that "overall, these data suggest that prophylactic agents lead to some reduction in the risk of chlamydial conjunctivitis" and state that "several types of evidence suggest that prophylactic agents do have some effect on reducing the risk of chlamydial ON (CON)." Darling and McDonald conclude that, although the randomised and quasi-randomised evidence in relation to ON is not of high quality, when additional evidence is also considered, it appears that prophylaxis does reduce the risks of both GON and CON.

The CPS statement<sup>1</sup> also claims that a "more effective means of prevention of ON" exists. Evidence is not

presented that this is the case. An alternative approach of screening and treatment is described, but adequate evidence is not provided of the effectiveness of this method. There are multiple sources of potential for failure in the method proposed, some of which are shared with the existing prophylaxis method and some of which are not. These include the risks posed by false-positive or false-negative results, nonengagement with prenatal care, nonengagement with follow-up, antimicrobial resistance, and medication side effects. Given the evidence that, in Canada, socially vulnerable groups show lower levels of engagement with prenatal care,<sup>3</sup> we are particularly concerned that this method, which is heavily reliant on prenatal care, will place the children of parents in vulnerable groups at disproportionate risk. Comparative studies of this regimen versus prophylaxis will be required before it can be concluded that the alternative regimen is more effective.

The CPS statement<sup>1</sup> argues that GON is rare. It points to regions in which prophylaxis has been stopped as an argument for cessation in Canada. Although GON is rare, there is also evidence that ON is under-reported and subject to cyclical fluctuations in incidence.<sup>4,5</sup> In addition, evidence from Sweden, Florida, and Denmark shows that ON incidence has increased after cessation of prophylaxis.<sup>6</sup>

The CPS statement claims that mild irritation produced by ocular prophylaxis has been perceived by some parents as "interfering with mother–infant bonding." This is presented as an argument for cessation of prophylaxis. This risk is overstated. The article to which the statement refers,<sup>7</sup> in fact, found that although eye openness was lower in those infants treated with prophylaxis, "eye openness in the new-born did not significantly alter the attention of the mother toward her baby." The authors also note that mothers "touched, talked to and smiled at their babies similarly" and that "even though silver nitrate alters eye openness, and even though these mothers noticed this, it did not alter their baby-focused attention nor did it prevent their pleasure and excitement during this initial social encounter." It is also notable that this study involved the use of silver nitrate, which is regarded as being the most irritating of the ocular prophylaxis options and is no longer available. Other than chemical conjunctivitis, prophylaxis is not associated with significant side effects for the most commonly used agents (povidone-iodine, tetracycline, and erythromycin).<sup>8,9</sup> The U.S. Preventative Services Task Force has reviewed the evidence in this area and concludes that there is convincing evidence that universal prophylaxis is not associated with serious harm.<sup>10</sup> The adverse effects associated with gentamycin use have led to cessation of its use.

In relation to cost-effectiveness, it is difficult to estimate the costs involved; however, there appear to be cost advantages to prophylaxis. Estimates of the cost of routine neonatal ocular prophylaxis are US\$7.77 per infant treated with povidone-iodine and US\$1.94 per infant treated with erythromycin.<sup>11</sup>

Estimates of the cost of chlamydial screening vary, but a cost-effectiveness analysis of screening in women aged 15 to 29 years estimates a cost of US\$13 per woman screened.<sup>12</sup>

In light of these arguments, we urge the CPS to reconsider this position statement. We urge a retraction of the recommendation to abandon mandatory prophylaxis until the safety and efficacy of alternative protocols are known and until it can be shown that such a change would not place infants of socially disadvantaged mothers at excessive risk. We urge consultation with the Canadian Association of Pediatric Ophthalmology and Strabismus in the development of a new position statement.

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*Can J Ophthalmol* 2015;50:328-329

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<http://dx.doi.org/10.1016/j.jco.2015.04.014>

## National cross-sectional study of Canadian ophthalmology residency participation in external courses

### Dear Editor:

The Canadian Ophthalmological Residents' Society (CORS), a committee of the Canadian Ophthalmological Society, is an organization with representation from each of the 15 ophthalmology training programs in Canada that are listed in [Figure 1](#). Comparisons of ophthalmology residency programs in Canada are lacking in the medical education literature. To better serve our members, we analyzed observational data comparing various aspects of residency training. The first of our studies, "National Cross-Sectional Study of Canadian Ophthalmology Residency Participation in External Courses," was presented at the 2014 Royal College of Physicians and Surgeons of Canada International Conference on Residency Education. The purpose was to compare resident participation in external courses across Canadian ophthalmology residency programs.

External courses ([Fig. 2](#)) were defined as reputable North American ophthalmology basic science or review

courses of at least 1-week duration. Inclusion criteria for external courses required funded participation from at least 1 Canadian ophthalmology residency program from 2009 to 2013. Data were gathered via interviews with key informants from each residency program. Descriptive statistics were used to determine the distribution of attendance across programs and courses as of 2013. Enabling factors were qualitatively explored.

The response rate was 100% with representation from each residency program. Every Canadian ophthalmology resident participated in at least 2 external courses during residency. In decreasing order of participation, residents participated in the following 7 courses from [Figure 3](#) (number of programs enrolled): Toronto Ophthalmology Resident Introductory Course (TORIC) (15), Lancaster Course in Ophthalmology (10), San Antonio Ophthalmology Course (7), Wills Eye Review Course (6), University of Texas Basic Science Course in Ophthalmology (3), Bay Area Ophthalmology Course (2), and Illinois Eye Review Course (1). Enabling factors displayed in [Figure 4](#) include funding, allocated study leave, attendance by previous residents, geographic proximity, and a weekly attendance option.