

## Safety in dermatological uses of lasers

**L**asers used to treat skin lesions, for skin resurfacing, and for hair removal emit an invisible beam that can be an instantaneous hazard to exposed eyes and skin. Such high-power lasers are finding application not only in major clinical facilities but in beauty salons and other personal care facilities. On-site visits by BCCDC's Radiation Protection Services (RPS) to several facilities in BC found that some employees working with such lasers did not understand the magnitude of the eye hazard presented by invisible laser radiation or the significance of proper use of protective eyewear. One facility visited had several noticeable burn marks on the floor and on the laser operator's chair. At another facility the laser operators used protective eyewear with worn-out straps, allowing the eyewear to hang too low on the nose thus exposing the eyes. Some operators assumed that a laser was merely a bright light. Although some facilities asserted that they were under the supervision of a physician, at the time of our visits no doctor was actually present to ensure safe application of the laser.

The laser equipment was generally well designed, labeled, and included many safety features. The survey also found that the patient's eyes were well protected during facial treatment. Studies have shown that 70% of all laser accidents to operators result from not wearing protective eyewear or wearing inappropriate or damaged protective eyewear.

### Controls

The College of Physicians and Surgeons of British Columbia is actively surveying laser facilities of its members, including those used for cosmetic work and invasive work in non-hospital settings. However, it is presently

unclear in BC as to which practitioners can legally use this type of "harmful energy." The health professions legislation is still under development in this province.

### **Some operators assumed that a laser was merely a bright light.**

The Health Act—Personal Services Establishments Regulations<sup>1</sup> apply to a variety of facilities such as tanning salons, tattoo parlors, and hair removal facilities, to ensure that appropriate hygiene standards and public health safeguards are met. In addition, exposure of workers to laser radiation is regulated by the Workers' Compensation Board (now WorkSafeBC) through the Occupational Health and Safety Regulation (7.42).<sup>2</sup> By default, the individual user in some facilities often becomes responsible for the safe use of the laser and must assume the responsibilities for laser safety. However, in order to do this adequate training in laser safety and knowledge of WCB regulations applicable to lasers is required. It may be necessary for some operators to upgrade their knowledge of laser safety and to have access to a laser safety expert for site assessment and problem solving. Such requirements apply equally to large clinical facilities as to single-operator establishments.

### Conclusions

As a result of these visits, RPS staff have developed a guideline document to help owners and operators of laser hair removal facilities identify and address the key requirements for laser safety. A copy of the guideline document can be found at the BCCDC web site—[www.bccdc.org/download.php?item=2115](http://www.bccdc.org/download.php?item=2115).

It is hoped that the guidelines will help develop greater laser safety knowledge for operators and other employees by emphasizing correct safety procedures. Such safeguards are based on the widely recognized medical laser safety standards ANSI Z136.3—1996 and 2005.<sup>3</sup> Compliance with these standards is required under BC's Occupational Health and Safety Regulation.<sup>2</sup>

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### References

1. Health Act, Personal Service Establishments Regulation B.C. Reg. 202/83 Filed 17 June 1983, O.C. 912/83.
2. Workers' Compensation Board, Occupational Health and Safety Regulation. Standards for Use of Equipment. BC Regulation 382/2004:Pt 7;Div3;Sec 7.23.
3. ANSI Z136.3-1996 American National Standard for Safe Use of Lasers in Health Care Facilities. Replaced by version ANSI Z136.3-2005. Note: The Canadian Standards Association Z386-01, Laser Safety in Health Care Facilities is a reproduction of ANSI Standard Z136.3 but with a few pages of "Canadian Deviations," which make the standard more applicable to the health care environment in Canada.