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# Education in skin cancer management

## Assessing knowledge and safety

### Background

General practitioners manage the majority of skin cancers in Australia. There are a range of training opportunities for, and certifications in, skin cancer management.

### Method

Between 15 June and 25 June 2008, an online examination was placed on the Australasian College of Skin Cancer Medicine website. Two hundred and forty-five college affiliated doctors were invited by email to complete the examination. Thirty questions were asked pertaining to the management of a hypothetical case study including melanoma, basal cell carcinoma and squamous cell carcinoma.

### Results

Of 187 doctors who had an active responding email address, 140 (75%) took the examination. From a possible score of 100, the mean score was  $84 \pm 16$ . The median score was 80.

### Discussion

Some trends emerged. Longer and more detailed training programs correlated with better subsequent knowledge retention and safety. Two days of training may not make doctors sufficiently safe in skin cancer management; it appeared to improved knowledge, but not to a point where unsafe practice was eliminated.

■ In Australia, the majority of skin cancers are managed by general practitioners.<sup>1</sup> General practitioners are increasingly using advanced closure methods to repair defects following excision of skin cancers,<sup>1</sup> and there have been mixed views expressed regarding whether GPs are suitably trained or skilled to diagnose and manage skin cancers.<sup>2-5</sup> Heal et al's<sup>6</sup> recent trial provides evidence that GPs in Townsville (Queensland) are competent at diagnosing skin cancer, comparable with specialist colleagues. Kelly et al<sup>7</sup> demonstrated that both specialists and GPs frequently manage melanoma suboptimally, but did not address basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) management.

A number of Australian workshop programs, lasting from 2 to more than 7 days, train GPs in skin cancer management. The effectiveness of these training programs has not been adequately examined.

The Australasian College of Skin Cancer Medicine (ACSCM) has three levels of certification. The entry level certificate requires completion of a 2 day workshop followed by a multiple choice examination. College Diplomats have typically attended between 5 and 10 days of workshop training in skin cancer management. No workshops are compulsory. The 4 hour examination includes surgical skills assessment. Fellowship requires training and 3 years or more in full time (equivalent) skin cancer medicine. Fellowship examination includes dermatopathology, head and neck reconstruction, knowledge of rare cutaneous tumours and in depth surgical log books. The ACSCM wished to review the adequacy of such certifications.

### Aim

To assess, through an online examination over a narrow time frame, the knowledge and safety of doctors who had at some stage undertaken training programs in skin cancer management. Shortcomings identified may then assist future course improvement.

## Method

Between 15 June and 25 June 2008, an online examination was placed on the ACSCM website. Two hundred and forty-five college affiliated doctors were invited by email to complete the examination and reminded every second day. Thirty questions were asked pertaining to the management of a hypothetical case study including melanoma, BCCs and SCCs. The examination was designed and validated over 6 months by a panel of two ACSCM Fellows, four dermatologists and two oncologic surgeons, from Australia, the United States of America (USA) and England. The two ACSCM Fellows accepted and adopted advice from the non-ACSCM affiliated specialists regarding details of how skin cancer management should be examined in this format. Overseeing the process was the USA dermatologist in full time skin cancer practice, study co-author and widely published authority on skin cancer, Dr Tom Connelly. The case study and questions remain available at [www.skincancercollege.com/Members/Quiz.aspx](http://www.skincancercollege.com/Members/Quiz.aspx).

For many questions, a number of responses were considered optimal or reasonable by the panel; other responses were suboptimal or dangerous. The preamble to the quiz advised respondents that, 'there are often no definite right or wrong answers' and could appear as a nondiscriminating survey of practice preferences. For example, respondents were asked how they would obtain histology for a small suspicious pigmented lesion on a body site with minimal cosmetic implications. There were no definite wrong answers. The optimal response was simple local excision with a narrow margin of normal skin and the only one receiving a maximum score. Curette of the lesion was considered the poorest choice.

Questions tested areas in melanoma management identified as deficient by Kelly et al,<sup>7</sup> including inappropriate surgical margins, too frequent use of diagnostic partial lesion biopsy, and follow up not including skin checks. The benchmark was the National Health and Medical Research Council (NHMRC) guidelines for management of melanoma.<sup>8</sup>

Respondents were asked if they would personally remove a tumour on the cheek or nose. Undertaking such surgery, *per se*, was not positive or negative. However, if they had previously indicated an inappropriate margin of melanoma clearance, performing the surgery themselves resulted in no score, as this would mean suboptimal margin for the patient. Referral was always considered an appropriate option when offered.

The examination gauged aspects of assessing, investigating and preparing the patient in the peri-operative setting (eg. prophylactic antibiotic usage and antithrombotic medication management).

Questions included melanoma follow up and examination priorities. Any approach including lifelong, regular full skin checks, wound checks and lymph node palpation scored maximum marks.

Emphasis was placed on appropriate margins and appropriate usage of nonsurgical options in BCC and SCC management. Respondents were asked to choose a management option for a large

superficial BCC and Bowen disease. This question had no definite right answers; equally preferred options included photodynamic therapy, curette and cryotherapy, curette and diathermy, topical imiquimod (SBCC), topical 5-fluorouracil (Bowen). Other options were considered suboptimal and would not score full marks. For example, excision with a 10 mm margin would almost certainly cure these low grade malignancies but was considered excessive and inappropriate. Further, diclofenac is not indicated for these conditions, has poor efficacy and did not score.

Respondents were asked details of skin cancer management training and any ACSCM certification. They estimated the percentage of their practice that pertained to skin cancer management.

## Statistics

The panel developed a scoring system out of 100. Mean and median scores were assessed based on doctors' certifications and training in skin cancer medicine. Evaluation of any difference between groups of doctors' scores was effected with Mann-Whitney U test. Scoring 65–75 was considered to indicate the doctor had several significant concerns in their skin cancer management knowledge. A score below 65 indicated widespread concerns and the need for substantial further training in skin cancer management. Chi-square method (Fisher exact) was used to test the significance of differences between proportions and categorical variables. A *p* value of <0.05 was considered statistically significant.

## Results

Of 245 doctors invited to complete the online examination, 58 email addresses were no longer active. Of 187 doctors with active responding email addresses, 140 (75%) took the examination. Six ACSCM Fellows, 14 ACSCM Diplomats and 50 ACSCM certificate holders submitted the examination. Seventy other doctors completed the examination including six invited reference USA and Australian dermatologists who are not ACSCM members. Six doctors did indicate certification levels. The remaining 58 doctors have a strong interest in skin cancer medicine, including college members and nonmembers.

From a possible score of 100, the mean score was 84 ± 16; median score 80. *Table 1* provides scores taking into account training and ACSCM certification.

There was no significant difference in scores between dermatologists and ACSCM Diplomats. The ACSCM Fellows scored significantly higher than the reference dermatologists (*p*=0.002) and diplomats (*p*<0.001). The ACSCM Diplomats scored significantly higher than ACSCM certificate holders (*p*<0.001). Doctors who had only attended a ACSCM 2 day certificate workshop (n=42) scored significantly higher than doctors who had never attended any skin cancer workshops (n=28, *p*=0.03)

## Doctors who scored poorly

Thirty-six was the lowest score. Scores in the 30–50s were predominantly from doctors who undertook very little skin cancer

practise. However, one doctor indicated that over three-quarters of their practice was skin cancer, and another who practised only skin cancer medicine each scored 68. This demonstrates concerning core knowledge deficiencies in some doctors who manage many skin cancers. Neither of these two doctors had any ACSCM training or certification.

Doctors with poorer scores tended to refer rather than manage more difficult tumours. They often had an enthusiastic but often inappropriate approach to ordering tests and commonly used topical preparations and antibiotics inappropriately. They sometimes inappropriately managed invasive tumours with topical 5-fluorouracil or cryotherapy. They often suggested inappropriately narrow excision margins for thin melanoma and melanoma in situ.

### Poor flap/graft choices

Doctors selecting inappropriate skin flap or graft choices scored poorly overall (mean = 72). Longer duration ACSCM approved courses was predictive of sound closure choices. None of the 56 doctors who had completed the 5 day skin cancer surgery course made errors in closure choice compared with 13 of 84 who had not attended the intense flap/graft training program ( $p=0.002$ ). No ACSCM Fellows or Diplomats made poor excision/closure choices. Doctors making poorer surgical choices had largely attended 2 days or less of skin cancer training.

### Discussion

A number of programs exist to train GPs in skin cancer diagnosis and treatment. Assessing the impact of such training is difficult. An examination of several hours could cover all aspects of skin cancer management but is not likely to achieve a high response rate. The approach selected examined a breadth of safety in skin cancer management practice in 10 minutes online. The response rate was maximised by the brief time commitment and the use of the less threatening term 'quiz'.

Some trends emerged. Longer and more detailed training programs correlated with better subsequent knowledge retention and safety. Two days of training may not make doctors safe in skin cancer management; it appeared to improved knowledge but not to a point where unsafe practice was eliminated. In contrast, 5 day course attendees were safe in subsequent decision making. In particular, surgical choices and wound closure choices were consistently sound.

This short online examination suggests some validation for either longer lengths of training or the ACSCM certification levels. Fellows scored better than Diplomats, who scored better than certificate holders.

### Recommendations

Following this analysis, a number of recommendations were put to, and accepted by, the ACSCM Board. The ACSCM now advises doctors

Table 1. Median scores of medical practitioners based on training/certification

Training/certification in skin cancer management	Number of doctors	Median score of doctors
Certification		
No training and no ACSCM certification	64	70
Dermatologist	6	88
ACSCM Fellow	6	99
ACSCM Diplomat	14	92
ACSCM certificate in skin cancer medicine	50	80
Short course training in skin cancer medicine*		
ACSCM approved 5 day skin surgery and 2 day advanced events	38	96
ACSCM approved 5 day skin surgery program alone	14	87
2 day certificate ACSCM weekend only	42	76
No ACSCM training	42	71
Only attended another 2 day workshop provided by any other party	14	74
Never attended any workshop	28	67

\* Doctors may fall into multiple categories

attending the 2 day program that it is introductory only and does not cover all aspects of skin cancer management, and recommends these doctors do not perform skin flap/graft closures.

The ACSCM 2 day program will be modified. It will increase its focus on appropriate topical choices in skin cancer and actinic keratosis management. The concept of field cancerisation will be introduced and an increased emphasis on skills in biopsy and elliptical excisions. It will no longer attempt to teach flap closures.

The ACSCM now recommends that doctors complete at least the longer training program and attain their diploma certification before ACSCM would endorse incorporating flap and graft closures into their practice.

Finally, the ACSCM Board recommends a further skin cancer knowledge analysis of doctors in 2010. The ACSCM will again invite independent experts to develop that process at that time.

### Limitations of this study

This was a short examination and does not assess the full depth of skin cancer knowledge. Participants were not randomised but rather self selected and biased toward ACSCM members and affiliates. Some nonresponders may have been less confident in their ability to answer the questions, thus choosing not to respond. Individual motivated skin cancer doctors may have been more likely to participate in the quiz. While the questions were set and validated by a team of doctors from different backgrounds, there may have been a bias in questions.

The quiz emphasised treatment rather than diagnosis of skin cancers. Other formats are required to examine diagnostic skills. Knowledge of which surgical procedure is indicated does not certify capability in performing the surgery. Recognising appropriate clinical margins may not always lead to surgery with those margins. Narrower

margins may be used for various reasons including uncertainty of managing the resultant defect.

## Conclusion

This data suggests competence in skin cancer management may correlate to the training and certification achieved by the GP. Two day training in skin cancer management improves knowledge but does not ensure all aspects of safe practice are learnt and may be insufficient to enable complex closures.

Longer programs of 5 days or more in skin cancer management may more reliably teach safety in skin cancer management including decisions on skin flap/graft closure. Refinements to formal GP skin cancer education have been developed and adopted as a result of this study.

Conflict of interest: none declared.

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