In response to the request from Accident & Emergency physicians for training in Ultrasound examination, a work group was commissioned by the Council of Hong Kong College of Radiologists in December 2001. The members were: Dr W Foo, Dr YL Chan, Dr MT Chau, Dr J Khoo, Dr BM Lai, Dr HS Lam, and Dr CK Law. They were given the task of looking into this issue and define a position for the College.

There has been so far no restriction, by law or otherwise, on non-radiologists to perform and interpret Ultrasound examination. The need and application of Ultrasound is growing in many specialties of Medicine. Colleges of radiology in the USA, the UK, Australia and New Zealand all have provisions for non-radiologists to perform and interpret Ultrasound examination. Policies in these radiology colleges all depicted and emphasized that adequate training was essential for anyone to practice diagnostic ultrasound. Details of the required training to attain a certain level of competence were spelled out in the policy statements in these Colleges. The common ground is that the standard must be attained and maintained.

There was no consensus in the working group on whether radiologists should teach non-radiologists to perform and interpret Ultrasound examination. The Council members also had different opinions. A referendum was organized to compile the views of members of the College. The questionnaires were distributed in late September 2002. The results are listed in Appendix 1.

Out of the 369 questionnaires sent, there were 128 returns (34% response rate). Among the 128 respondents, there were 103 Fellows, 18 Members and 6 Trainees (one did not specify). By specialty 108 were from Radiology, 17 from Clinical Oncology and 1 from Nuclear Medicine (two did not specify). Of all the respondents, 119 (93%) showed their full names and signed on the questionnaire.

Most (96%) agreed that radiologists were the best-qualified personnel to perform and interpret diagnostic Ultrasound.

Opinion was divided on whether there should be 24-hour radiological coverage in Accident & Emergency departments. Forty-six percent agreed while 35% disagreed. Nineteen percent had no preference. Still on this issue, most (65%) did not think that 24-hour radiological coverage was feasible in Hong Kong.

Sixty-six percent thought that it was not appropriate for Accident & Emergency physicians to perform and interpret general diagnostic Ultrasound. Eighteen percent thought it was appropriate. A slightly high proportion (38%) thought that it
was appropriate for them to perform and interpret targeted or focused diagnostic Ultrasound. However the majority (48%) still disagreed on this idea on targeted / focused Ultrasound.

The majority (63% vs 25%) thought that appropriately trained Accident & Emergency physicians would be able to perform and interpret targeted / focused Ultrasound.

On the issue of whether specialist radiologists have the responsibility to teach Accident & Emergency physicians to perform targeted / focused Ultrasound, most (49% vs 28%) disagreed while 23% had no preference.

On a similar issue of whether specialist radiologists have the responsibility to teach non-radiologists to use Ultrasound, 74% disagreed while 11% agreed.

Most (95%) thought that there was a higher priority to teach trainee radiologists than non-radiologists. Only 5% agreed that specialist radiologists in their hospital had the time to teach Ultrasound to both trainee radiologists and non-radiologists.

In addition there were 23 comments received (please refer to Appendix 2). These comments did reflect the line of thought of the majority.

**Conclusion:**

*Specialist radiologists are the best-qualified personnel to use Ultrasound as a diagnostic tool.*

*There should be 24-hour radiological coverage in Accident & Emergency departments, although most thought that this was not currently feasible in Hong Kong.*

*In general it would be inappropriate for any physician, without appropriate training, to use Ultrasound, both general and targeted / focused as a diagnostic tool.*

*However a fair proportion of radiologists believed that appropriately trained A&E physicians would be able to perform targeted / focused diagnostic Ultrasound in A&E departments.*

*The majority believed that it was not their responsibility to teach non-radiologists diagnostic Ultrasound; nor that specialist radiologists have the spare capacity to do so. Teaching trainee radiologists and radiographers have a much higher priority.*
Appendix 1

Hong Kong College of Radiologists

Referendum on Teaching Ultrasound to Non-Radiologists in Accident & Emergency

The provision of 24-hour urgent diagnostic (and interventional) ultrasound service to hospital in-patients is a standard practice. There is however a demand for emergency diagnostic ultrasound examination of patients attending the Accident & Emergency Departments, especially in polytrauma cases. The College would like to seek the opinion of its members (Fellows, Members, Trainee Members, Associated Members) in all her Specialties (Radiology, Clinical Oncology and Nuclear Medicine) on the issue of the role of radiologists in the Specialty of Radiology in providing or assisting such services in Accident and Emergency Departments.

Your opinion is most important for our evaluation of the issue. Please take a moment to complete the questions and return to the College Secretariat by the enclosed envelope on or before October 15 2002.

1. Do you agree that specialist Radiologists are the best-qualified personnel to perform and interpret diagnostic Ultrasound?
   - 96% Agree
   - 2% Disagree
   - 2% No preference

2. Do you agree that there should be 24-hour coverage in Accident & Emergency departments by Radiologists?
   - 46% Agree
   - 35% Disagree
   - 19% No preference

3. Do you agree that in reality 24-hour coverage in Accident & Emergency departments by Radiologists is at present feasible in Hong Kong?
   - 17% Agree
   - 65% Disagree
   - 18% No preference

4. Do you agree that it is appropriate for Accident & Emergency physicians to perform and interpret general diagnostic Ultrasound in Accident & Emergency departments?
   - 18% Agree
   - 66% Disagree
   - 16% No preference

5. Do you agree that it is appropriate for Accident & Emergency physicians to perform and interpret targeted / focused diagnostic Ultrasound in Accident & Emergency departments?
   - 38% Agree
   - 48% Disagree
   - 13% No preference
6. Do you agree that appropriately trained Accident & Emergency physicians will be able to perform targeted / focused diagnostic Ultrasound examinations in Accident & Emergency departments?

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
<th>No preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>63%</td>
<td>25%</td>
<td>12%</td>
</tr>
</tbody>
</table>

7. Do you agree that specialist Radiologists have the responsibility to teach Accident & Emergency physicians to perform targeted / focused diagnostic Ultrasound?

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
<th>No preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>28%</td>
<td>49%</td>
<td>23%</td>
</tr>
</tbody>
</table>

8. Do you agree that specialist Radiologists have the responsibility to teach non-Radiologist clinicians to use Ultrasound as a diagnostic procedure?

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
<th>No preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>11%</td>
<td>74%</td>
<td>15%</td>
</tr>
</tbody>
</table>

9. Do you agree that teaching trainee Radiologists Ultrasound should be given a higher priority than teaching non-Radiologists?

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
<th>No preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>95%</td>
<td>1%</td>
<td>4%</td>
</tr>
</tbody>
</table>

10. Do you agree that specialist Radiologists in your hospital have the time to engage in teaching Ultrasound to both trainee Radiologists and non-Radiologists?

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
<th>No preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>5%</td>
<td>68%</td>
<td>27%</td>
</tr>
</tbody>
</table>

11. Your status in the Hong Kong College of Radiologists is

<table>
<thead>
<tr>
<th></th>
<th>Fellow</th>
<th>Member</th>
<th>Trainee Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>80%</td>
<td>14%</td>
<td>5%</td>
<td></td>
</tr>
</tbody>
</table>

12. What Specialty are you in?

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiology</td>
<td>84%</td>
</tr>
<tr>
<td>Clinical Oncology</td>
<td>13%</td>
</tr>
<tr>
<td>Nuclear Medicine</td>
<td>1%</td>
</tr>
</tbody>
</table>

13. Other comments: _see Appendix 2______________________________________________________________

Your name __93%____________________________________
Appendix 2

'Trained radiologists should be performing all ultrasounds period. One does not see radiologists trying to perform surgery or endoscopies although some of us may have bee trained for these procedures prior to starting radiology. If we give in on this issue we might as well sign the death warrant on our specialty in Hongkong. The younger radiologists will have a rough ride as they are not facing retirement yet and will need to have their future protected.'

'Well trained sonographers under the supervision of radiologist can provide quality ultrasound service in A&E departments.'

'The College of Radiologists and the Radiation Board should have greater control and restrictions over the practice and reporting of ultrasound examinations by non-radiologists and untrained or inadequately trained sonographers.'

'Anyone can perform and interpret ultrasound examination provided he or she has adequate training.'

'Polytrauma cases should be investigated with CT rather than USG. Conditions that require emergency imaging can be well studied by CT. 24 hour coverage in A&Edept for USG is not necessary. Early referral to x-ray dept by A&E Dept for USG is acceptable and reasonable to solve the problem.'

'USG is a highly sophisticated imaging modality that require special and specialty training. A&E physician (non-radiologists) are not appropriate person to use it as a diagnostic tool until and unless there is some degree of specialisation examination.'

'Ultrasound in A&E departments should be limited to very acute patients,eg trauma cases.'

'A core curriculum should be established (by College?) on each focused areas. Implementation (eg by HA wide didactic courses and hands-on demonstration at hospital level) strategy should be uniform to assure standard.'

'MRI next!'  

'Focus ultrasound can greatly expedite management of polytrauma paitents. If we cannot support 24/7 in house radiologist service to trauma focused USG by trauma co-ordinator may be the option from the perspective of quality service.'

'1. In polytrauma cases CT is more useful than targetted USG. 2. For acute abdomen A&E doctor should seek surgical opinion based on their clinical finding rather than solely relying on USG findings. 3. My own experience is that A&Edoctors performing USG themselves create more unnecessary admissions and falsely discharge those cases requiring admission.'

'1. Non-radiologists performing USG may generate unnecessary workload when they are unable to interpret findings (including normal variants). This would lead to unnecessary referrals to radiology and unnecessary appointments for patients to attend. 2 In the event that clinicians are taught, it would seem appropriate to set up formal courses and charge appropriately to compensate for time and expertise fo the radiology department.'

'Radiographers performing A&E duty should be trained to perform 'FAST' rather than non-radiologists.'
‘This survey should be anonymous, otherwise the issue should be discussed in the AGM. Whoever propose that radiologist should train non-radiologists to perform ultrasound should consider the possibility of legal consequences of the trainer and trainee. This issue has legal implications, which should not be overseen. The other issue is how available is ultrasound performed by radiologist for the A&E cases? Is there a real need for ultrasound to be performed by A&E physicians?’

‘The objective and scope of such training should be clearly defined and 'limited' as this service is only provided for emergency purpose. Any other diagnostic problems should be handled by specialist radiologists.’

‘We can teach non-radiologists USG, but we don't have enough resources to teach everyone and perform 24 hr USG. I don't see any difference in 'general' or 'targeted/focused' USG, because the aim is to solve the clinical problem and not to miss any significant pathology eg to r/o gallstone in ruq pain is aloso meaning that hcc/aortic aneurysm should also be excluded. Anyway any USG done by non-radiologists should be re-checked by radiologists within appropriate time. Thanks.’

‘A&E physicians should concentrate on their role as physicians and ‘surgeons’ . There are so much to \know, learn and practice in their field already. Leave diagnostic ultrasound to radiologists. When a diagnostic examination has to be done, let it be done properly by an adequately trained radiologist. There are already too many 'substandard' ultrasound diagnosis in the medical field already. Those A&E physicians will add a lot more such reports when they leave the A&E specialty and think they know ultrasound.’

‘Radiologists must be united to hold on to all aspects of our specialty. It really means that radiologists have to provide 24 hour call, 365 days a year. If not, there will be non-radiologists ready to do this..

‘Specialist radiologists have a role in the teaching of the applications and limitations fthe use of ultrasound.’

‘Besides the physicians, trauma surgeons are deemed more appropriate to perform FAST (focused USG).’

‘It is difficult to answer some of the questions because it is too generalised.’

‘There should be a clear distinction between radiologists and the other specialists.’

‘Teaching our trainee radiologists are top priority. Teaching in only part of skill training and providing expertise in 'subspecialty'.'