Radiotherapy in Nepal: A view from Medical Physics

Paul Hill PhD, Cork University Hospital, IE
Aileen Flavin Rad Onc, Cork University Hospital, IE
Jane Barrett Rad Onc, Thames Valley Clinical Senate, UK
Diana Ritchie Rad Onc, Beatson WoS Cancer Centre, UK
In October 2016 the team made a one week visit to Kathmandu, Nepal.

Purpose:
- To deliver a course in Radiotherapy Treatment Planning

Target Audience:
- Consultant Radiation Oncologists, Trainees and Medical Physicists

The course was based on a Training Needs Assessment by AF & local Rad Oncs and covered the following topics:
- Basic Physics & Planning
- Contouring
- H&N, Pelvis (Cervix), ICRU definitions
- Quality Assurance, Protocols, Guidelines
- Planning / Peer Review Meetings
As Low Income country, Radiotherapy in Nepal faces significant challenges with respect to People, particularly Medical Physicists, Infrastructure and Equipment.

According to the IAEA DIRAC:
- Nepal has 9 teletherapy devices for 28.5 M people
- For comparison Ireland has 42 devices for 4.7 M people

We visited 3 radiotherapy centres in Kathmandu:
- BIR Hospital
  - 1 Co\textsuperscript{60} (broken), 1 MP, Public
- Kathmandu Cancer Center
  - 1 Linac, 1 MP, New Private
- Nepal Cancer Hospital
  - 1 Linac, 1 MP, New Private
Only 1 Medical Physicist results in a high work load and no means to perform 2\textsuperscript{nd} checks.

Centres are keen to provide the latest treatments
- Places further demands on MP
  - Planning, QA, etc

The gap between current and aspiration can have heavy resource demands.

### Current Service:
- 2D Manual Calculations

### Planned Service:
- 3D Conformal, IMRT, VMAT
- TBI, TSEI

The course intent was to assist development of local capability
Lessons Learned & Conclusions

The Course consisted of lectures, tutorials & practical sessions and was delivered twice across 2 centres. The course was well received particularly by the younger staff.

There was perhaps less interest in structural areas such as protocols, guidelines etc.

While class room lectures are useful to provide formal training and instruction we think that “hands-on” training is the most effective in this situation. This can involve:

- Contouring sessions, Treatment Plan creation and checks,
- Developing Treatment Protocols and Guidelines, and
- Performing QA tasks such as Planning Meetings.
- All tailored to the local needs.