ONTARIO ASSOCIATION OF MEDICAL RADIATION TECHNOLOGISTS

Medical Radio-Isotope Shortage

TASK GROUP FINAL REPORT

February 2010

Medical Radio-Isotope Shortage: A Survey

Canada's Chalk River reactor produces approximately 30 percent of the world's supply of medical isotopes. Due to a heavy water leak, the reactor was shut down in May 2009, with no definitive re-opening date. The closure of the Chalk River reactor has therefore had a significant impact on the availability of medical isotopes for critical diagnostic imaging procedures.

In the spring of 2009, the Ontario Association of Medical Radiation Technologists (OAMRT) formed a Task Group to examine the effect the radio-isotope shortage had on Nuclear Medicine facilities in Ontario. The Task Group developed a survey, which was sent to all hospitals and independent health facilities (IHF) in Ontario in August 2009. In addition the survey was distributed to OAMRT Nuclear Medicine Technologist members to ascertain the personal impact of the shortage. The results of this survey are presented in this report.

It should be noted that where there were duplicate responses from a facility, the Manager or Chief Technologist response on operational impact has been recorded. A Technologist operational impact response was entered when a Manager or Chief Technologist did not respond from that facility. In addition, there were a number of responses from facilities that do not have a Nuclear Medicine service. These responses (they indicated "no impact") have been removed from the statistics. Responses from all Technologists regardless of facility duplication have been included in the concerns regarding the future impact.

Responses were received from 108 Managers, Chief Technologists and Staff Technologists working in a nuclear medicine service. These responses represent 24 different independent health facilities and 48 hospital sites. Of these different facilities, approximately 97% said they have been impacted by the shortage in some way. It should be noted however, that one respondent indicated "no impact" but then went on to indicate impacts on the service. Impacts included finding alternate sources and increased costs. The survey completion on the access to alternate sources of

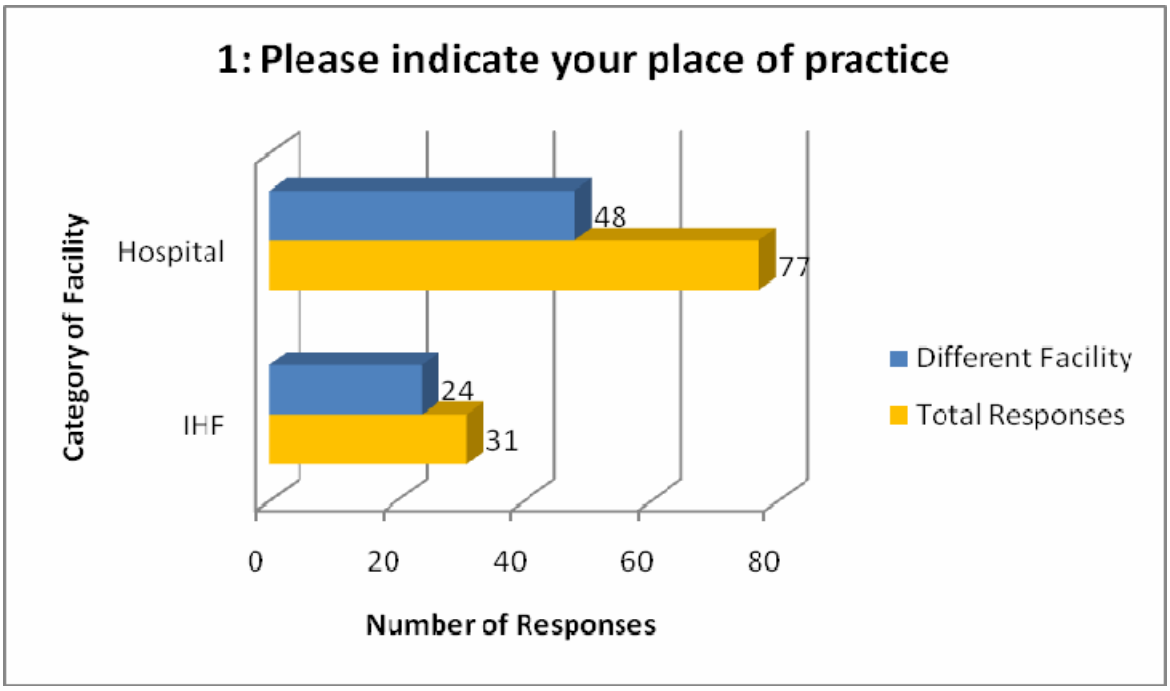
Molybdenum 99/Technetium 99m was ambiguous rendering it difficult to interpret the results. It appears that between 31% and 43% found alternate sources (different suppliers, substituting other modes and sharing with another facility) and between 59% and 69% of facilities used unit doses. Approximately 84% of facilities indicated they had incurred additional cost either through unit doses, alternate sources or both.

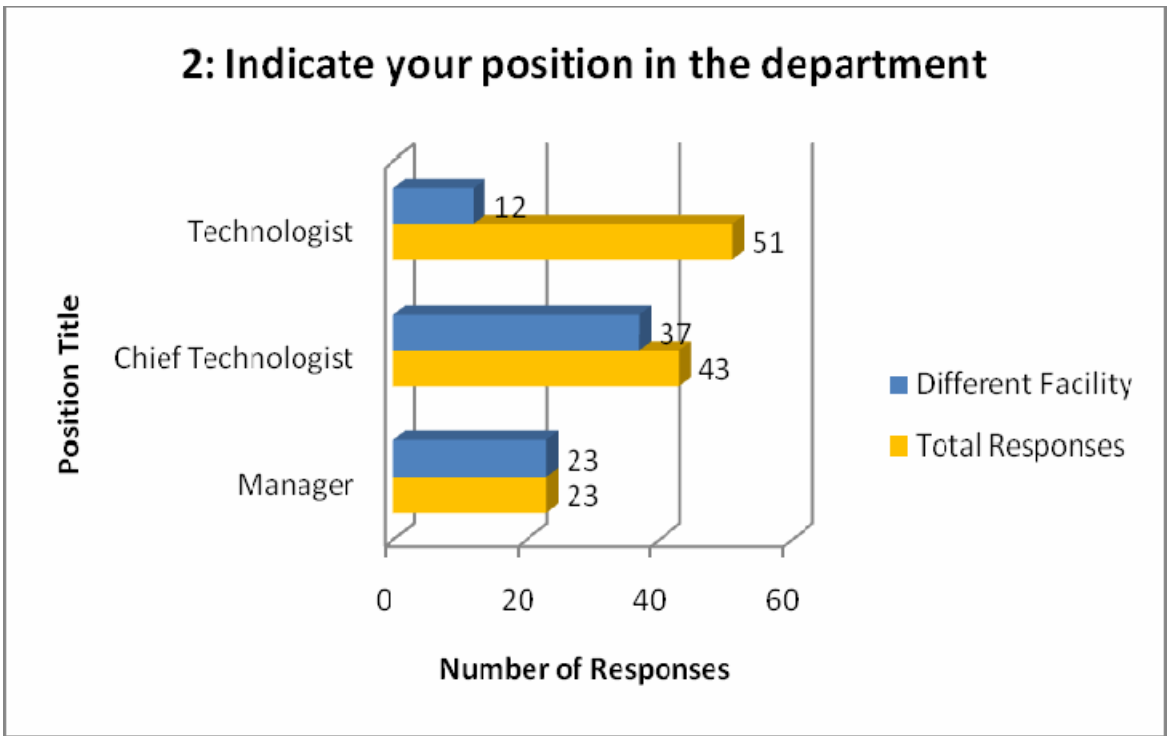
With limited resources, nuclear medicine departments are making operational changes to cope with the isotope shortage. Some of these techniques reduce the quality of the scan and may cause patient discomfort. Facilities reported multiple changes in the operations of the service, such as:

- Decreasing the dosage of the radiopharmaceuticals (86%);
- Rescheduling of patients (86%);
- Using a different isotope (80%);
- Modifications to the procedures (64%);
- Cancellation of tests altogether (43%);
- Reduced operating hours (21%); and
- MRT lay-off or temporary leave (7%)

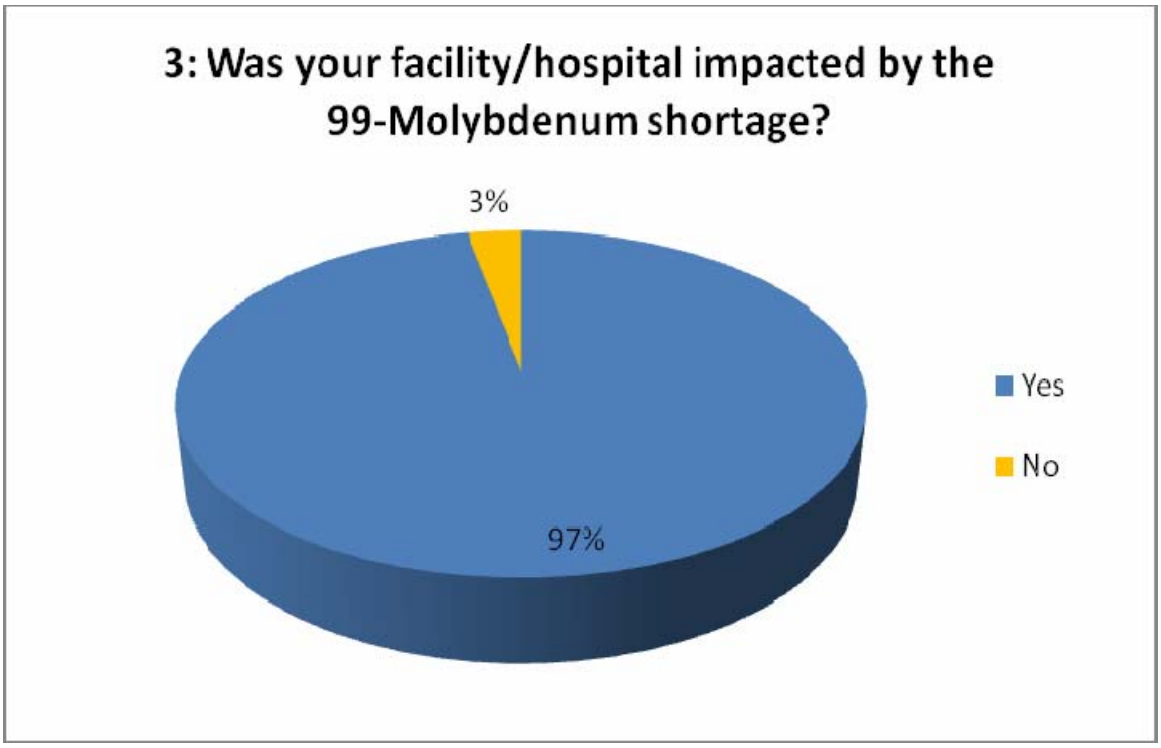
Medical Radiation Technologists in the nuclear medicine field reported several concerns for the future. These are fully detailed in the final graph at the end of the report. Long term impacts, quality of work life and job security are concerns that are upper most in the Technologists' minds. Examples of the concerns are: physicians seeking alternate imaging modalities/patient referral patterns reduced (48%); lay-offs and forced time off (39%); potential for increased work hours on weekends (29%) and decreased operating hours on weekdays (20%). Technologists are concerned that given the current situation, there will be a reduced investment in nuclear medicine and reduced interest in entering the field.

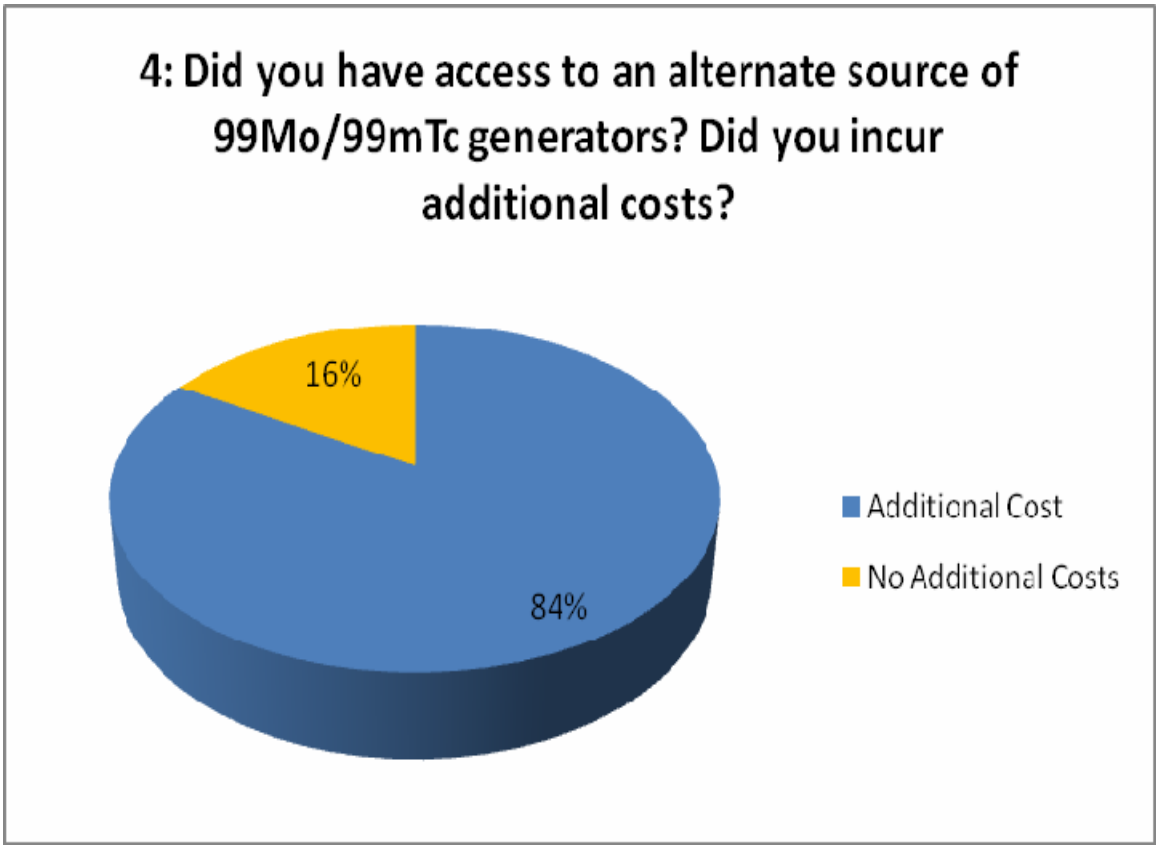
With the uncertain future of radio-isotope supplies, this survey of the Nuclear Medicine Technologist community gives some insight into the actual and perceived future impacts of the current situation. It is clear that the shutdown of the Chalk River reactor has had a significant impact on the operations of nuclear medicine services in Ontario.



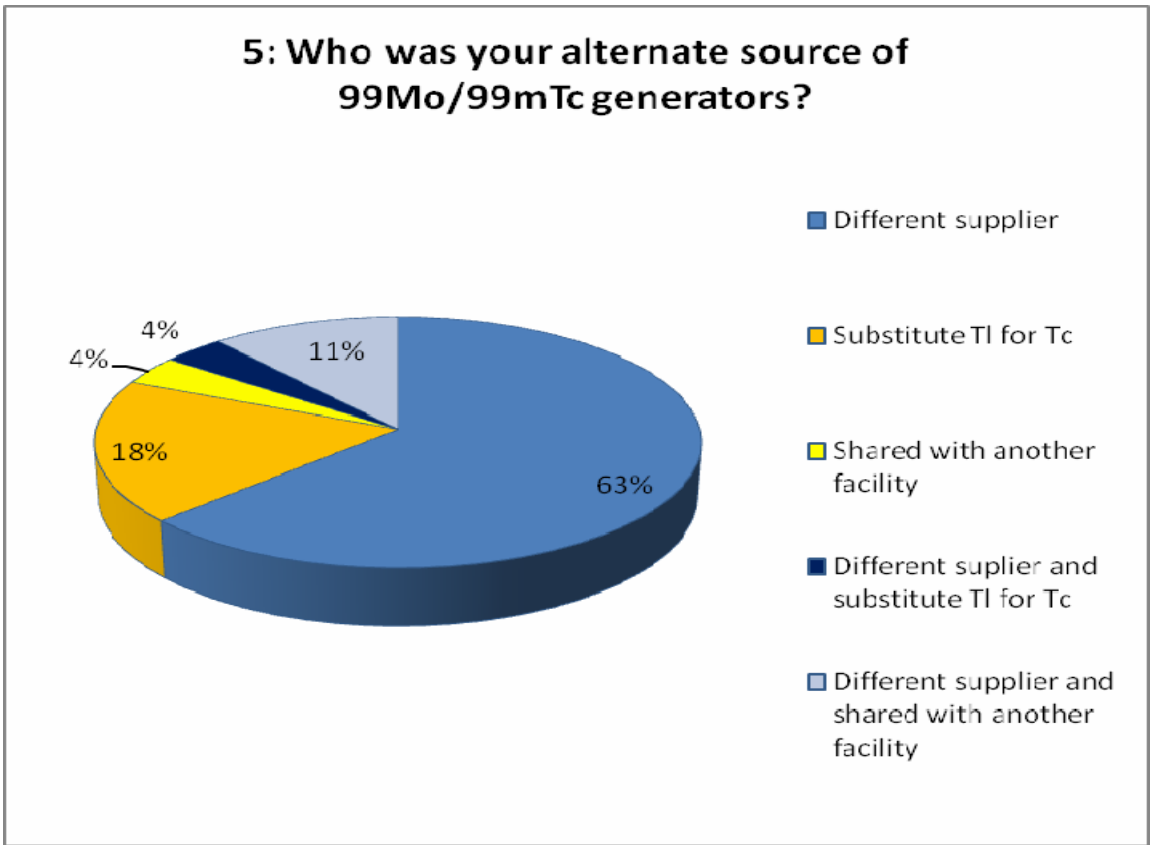


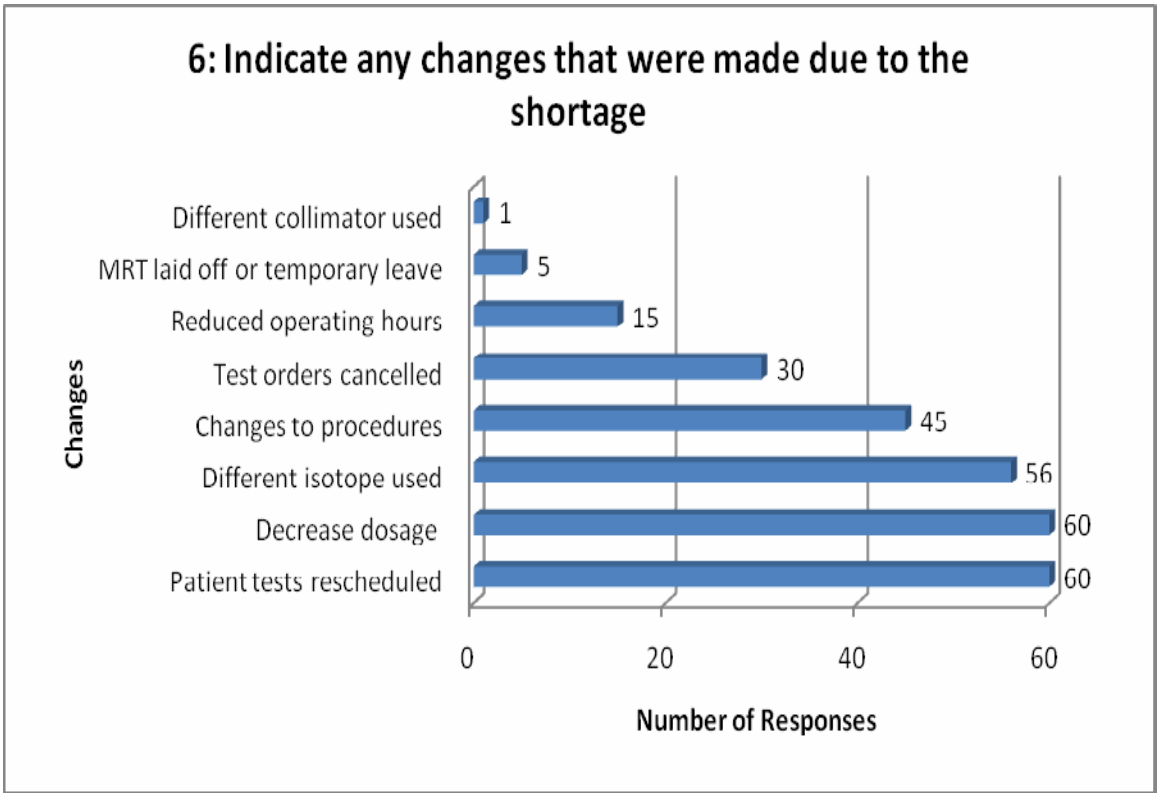
*Total number of responses adds up to greater than 108, as some respondents indicated multiple positions

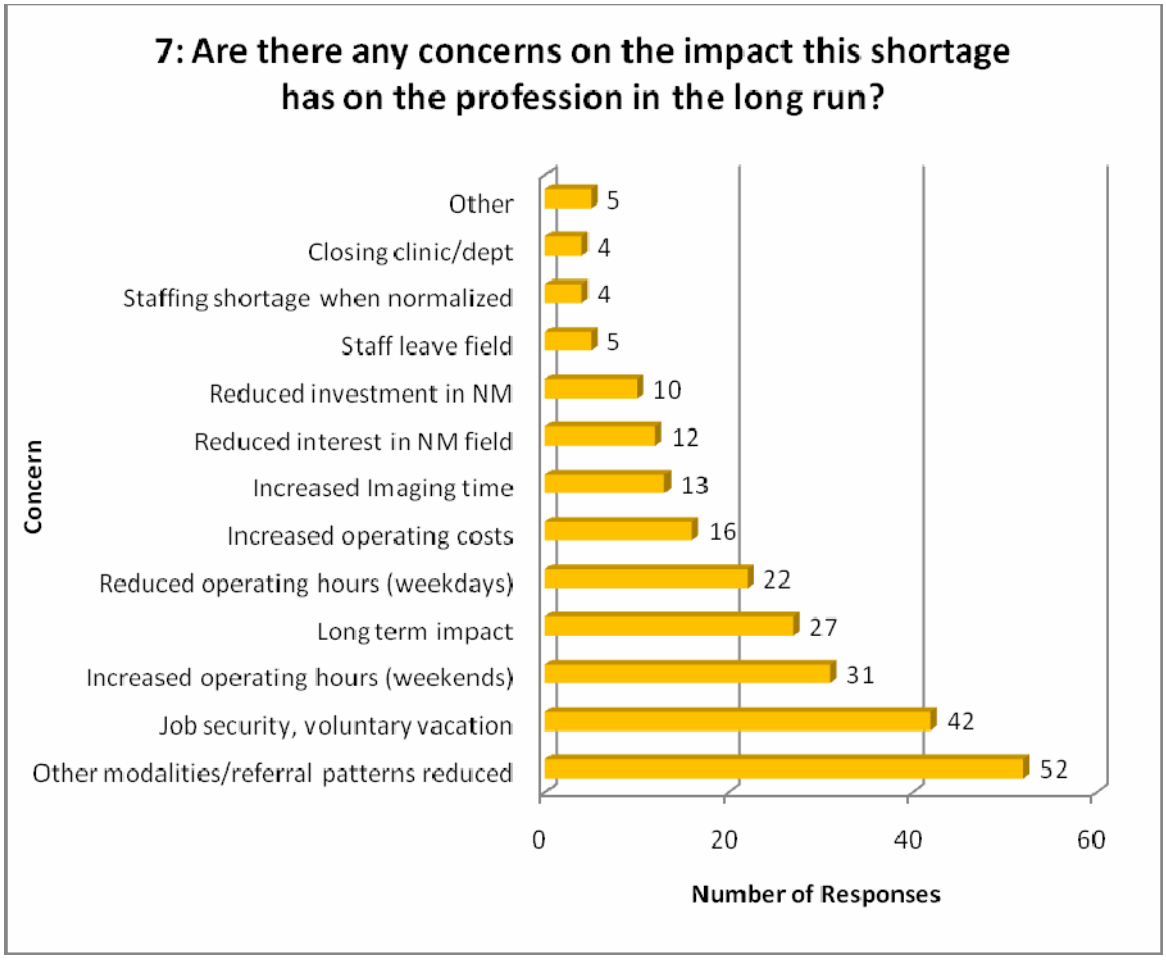




*Results for alternate sources were ambiguous and therefore not shown.


5: Who was your alternate source of 99Mo/99mTc generators?
4%
4%
11%
18%
63%
Different supplier
Substitute Tl for Tc
Shared with another facility
Different suplier and substitute Tl for Tc
Different supplier and shared with another facility


6: Indicate any changes that were made due to the shortage
Changes
Different collimator used
MRT laid off or temporary leave
Reduced operating hours
Test orders cancelled
Changes to procedures
Different isotope used
Decrease dosage
Patient tests rescheduled
1
5
15
30
45
56
60
60
0
20
40
60
Number of Responses


7: Are there any concerns on the impact this shortage has on the profession in the long run?
Concern
Other
Closing clinic/dept
Staffing shortage when normalized
Staff leave field
Reduced investment in NM
Reduced interest in NM field
Increased Imaging time
Increased operating costs
Reduced operating hours (weekdays)
Long term impact
Increased operating hours (weekends)
Job security, voluntary vacation
Other modalities/referral patterns reduced
5
4
4
5
10
12
13
16
22
27
31
42
52
0
20
40
60
Number of Responses