

# Over half of doctors are unsatisfied with radiation control in their hospitals

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In the evening of February 20, 2013, Zhouzi Fang, China's top "science cop", claimed on his Weibo page that a serious radioactive leakage in Wuhan Union Hospital, Wuhan, Hubei Province, had resulted in four female hospital obstetrics and gynecology professors suffering from thyroid cancer. This astonishing news has triggered heated discussions on hospital nuclear security and occupational radiation exposure. Doctors, particularly those working in the radiology and orthopedic departments, are often exposed to excess radiation doses. Although the Chinese government has required all the health care providers to adopt certain protective measures to enhance radiation safety in health care settings, the policies are not consistently or uniformly implemented in all hospitals. Now, the questions are: Is thyroid cancer a common disease among doctors? Is the prevalence of thyroid cancer among doctors far higher than that in the common population? Thereof, DXY (<http://www.dxy.cn/>) conducted a questionnaire-based survey titled "Are you satisfied with the radiation control in your hospital?".

A total of 1,521 valid questionnaires were received during the one-week survey. Most respondents were from tertiary hospitals, accounting for 69.9%, followed by those from secondary hospitals (24.3%), primary hospitals (3.4%) and private hospitals/others (2.5%) (Figure 1).

## Radiation control is available in only 68% of hospitals

As shown in the survey, 68% of the hospitals have adopted radiation control measures, while still 17% of hospitals lack proper radiation control. Notably, 15% of the respondents were not even aware whether there were such facilities or measures

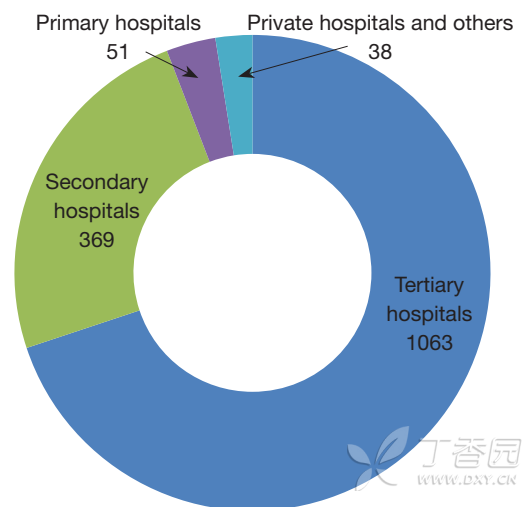


Figure 1 Distribution of the hospitals.

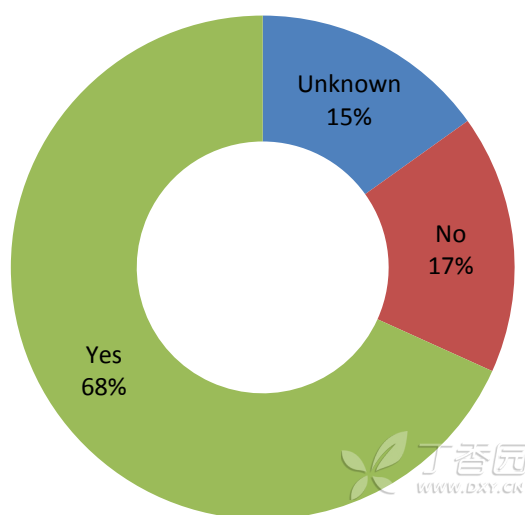
in their hospitals. The proportions showed no significant differences among hospital at different levels (Figure 2).

## Up to 47% of the respondents reported that there were thyroid cancer cases among their colleagues

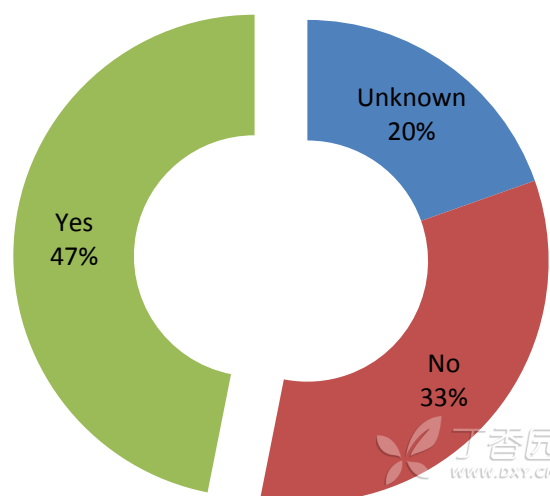
Up to 47% of the respondents reported that there were thyroid cancer cases among their colleagues, 33% "No", and 20% "uncertain" (Figure 3).

## Over half of doctors were unsatisfied with the radiation control in Chinese hospitals

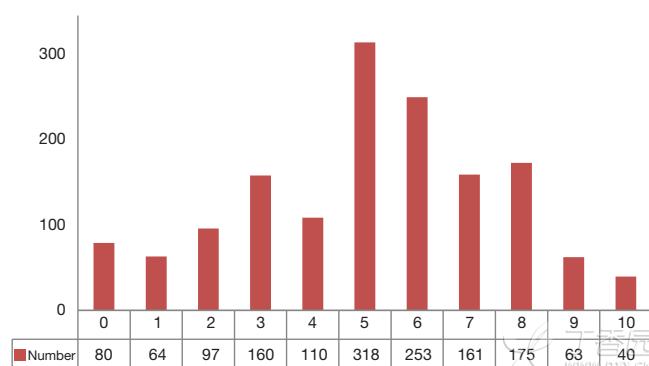
With 6 points as a passing score, about 55% of doctors



**Figure 2** Is there any radiation control measure in your hospital?



**Figure 3** Are there any thyroid cancer cases among your colleagues?



**Figure 4** Scoring of the doctors' satisfaction on the radiation control in their hospitals.

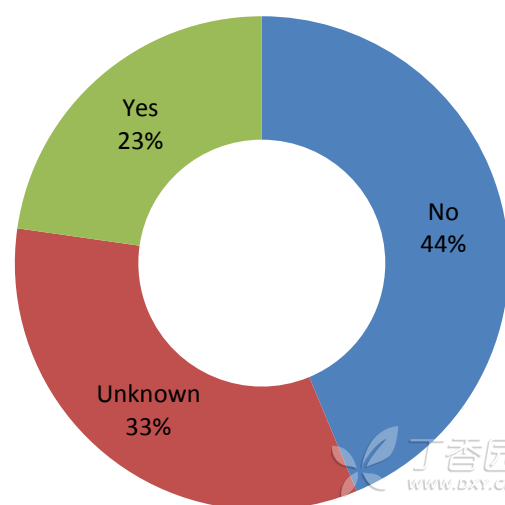
thought that the radiation control in their hospitals were unqualified. The mean score was 5.1 points (*Figure 4*).

#### 44% of doctors thought that the radiation control in their hospitals were unqualified

From the Doctors' subjective point of view, 44% of doctors expressed their dissatisfaction over the control measures in their hospitals. This figure does reflect the concerns of doctors about the occupation protection in terms of facility, policy, and management (*Figure 5*).

#### 80.3% of respondents believed that "radiation injury" was the major cause of thyroid cancer

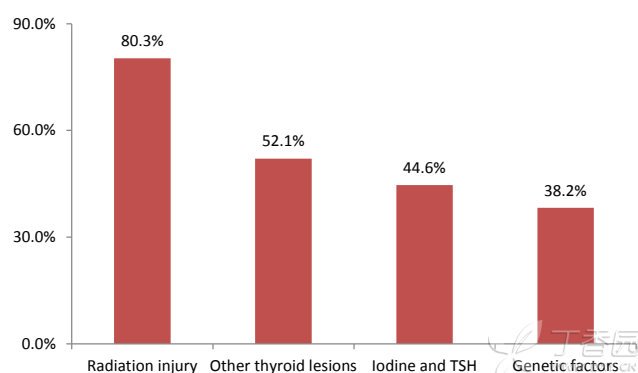
What is the leading cause of thyroid cancer? The vast



**Figure 5** Is there any standard radiation control measure in your hospital?

majority of doctors (80.3%) chose "radiation injury", followed by "other thyroid diseases" (53.1%), "iodine and TSH" (44.6%), and "genetic factors" (38.2%) (*Figure 6*).

In summary, although special radiation control measures have been available in 68% of hospitals, it is far from satisfying considering the severe damage might be caused by radiation. Up to 47% of the respondents reported that there were thyroid cancer cases among their colleagues. Although "nuclear leak" and "nuclear radiation" are two different concepts and the actual causes of thyroid cancer among these medical staff can not be definitely identified



**Figure 6** What do you think the major causes of thyroid cancer?

via the survey, the high prevalence of this disease among medical staff remains an issue of high concern. Meanwhile, from a subjective point of view, most doctors (80.3) believed that “radiation injury” was the major cause of thyroid cancer and over half of the respondents (55%) were not satisfied

with the radiation control measures in their own hospitals.

**Thyroid cancer:** since the infamous Chernobyl incident in the former Soviet Union in mid-1980s, thyroid cancer is the fastest growing solid cancer in the past two decades, with an average annual growth rate of 6.2%. Currently, it has become the fifth leading tumor among females. According to the Global Report on Fukushima Nuclear Accident issued by World Health Organization (WHO) On February 28, 2013, for people in the most contaminated location, the estimated increased risk of thyroid cancer was 70% over what would normally be expected (the normally expected risk of thyroid cancer in females over lifetime is 0.75% and the additional lifetime risk assessed for females exposed as infants in the most affected location is 0.50%).

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