



国家质量监督检验检疫总局

General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China



APLMF 20th Meeting

Report from Working Group on Metrological Control System (MCS)

**Presented by
Yang Youtao
P.R. China**



Outlines

- **1 2 Guide lines for APLMF**
- **2 Guide lines of “Ionizing radiation metrology for human health and security in medicine on legal metrology system” (No.1-2013)**
- **3. The complementary controls of medical devices on metrological and medical supervision (No.2 -2013)**
- **Associated with the WG on Medical Measurements**



- **OIML recommendations for the universal apparatus of Metrology**
- **Carry out the OIML recommendations unquestionably**
- **Focus on Some apparatus of Metrology that involved the safe and Health of people**



Consequence of accidents

Why need the guide line?



20. Patient B (Day 26): mouth sores; Patient A had similar sores.





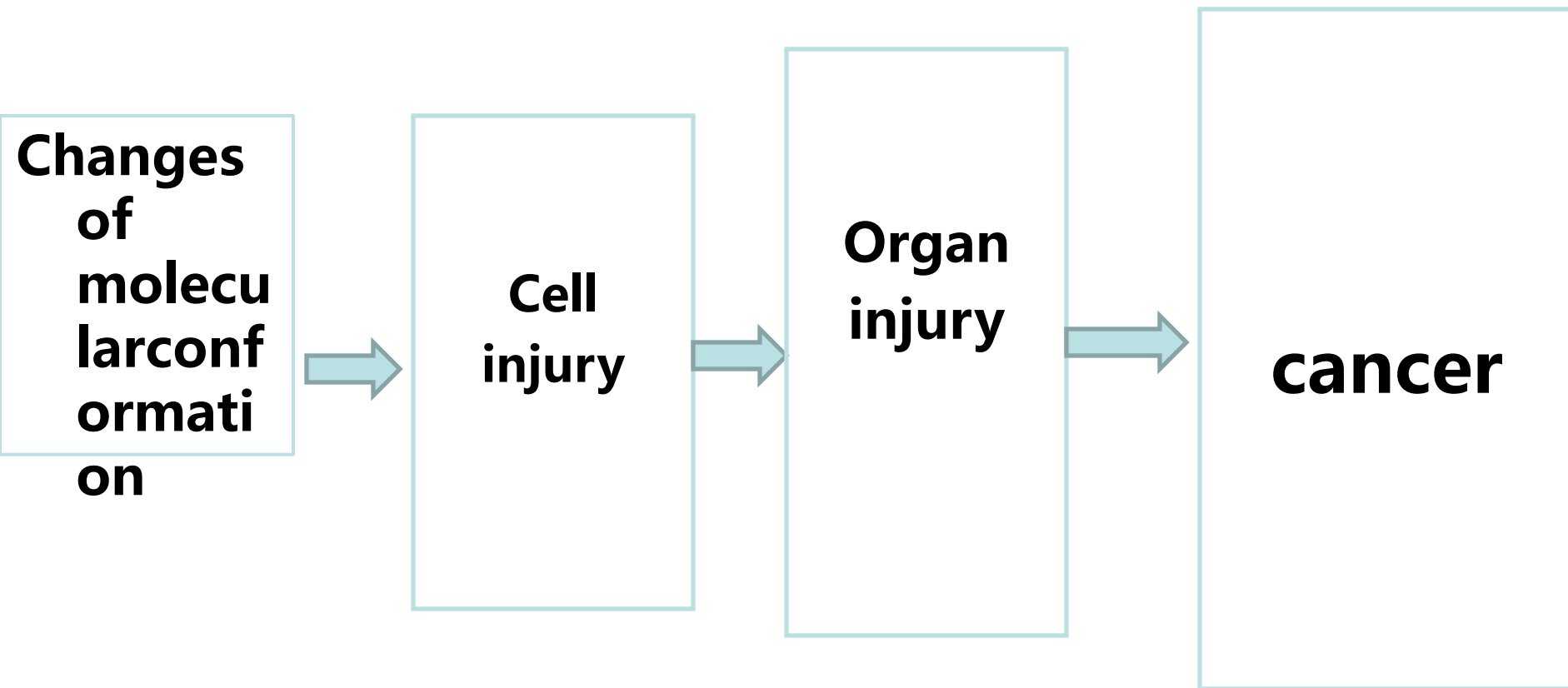
Consequence of accidents

Why need the guide line?





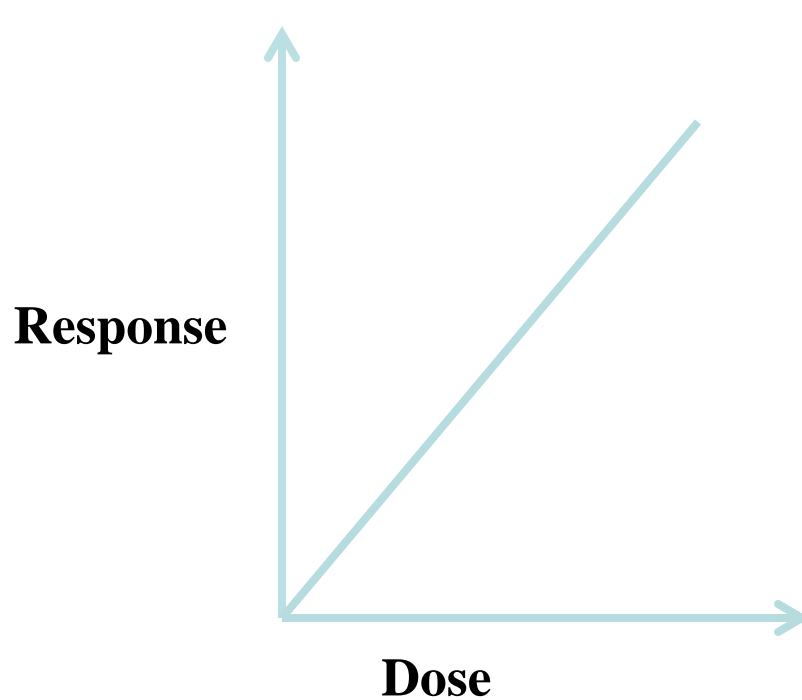
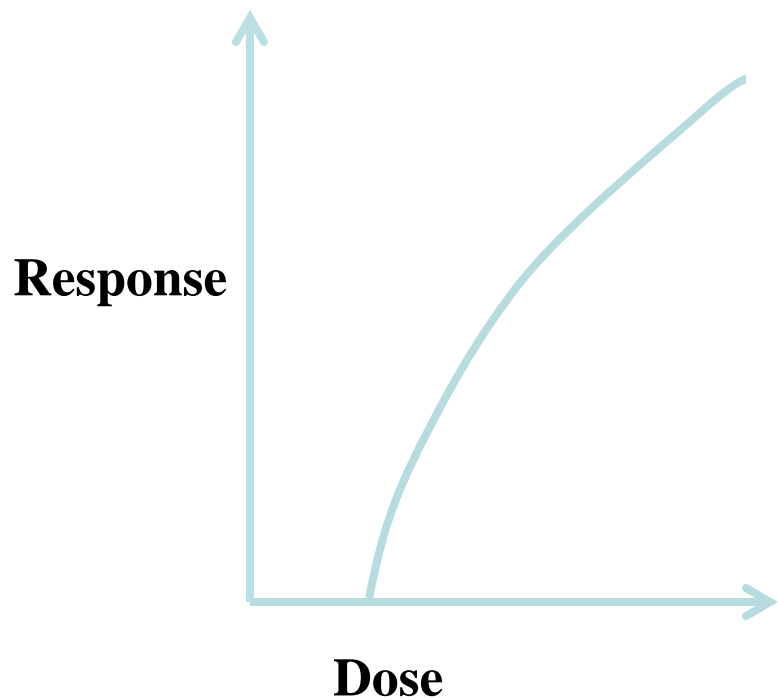
cell modificate





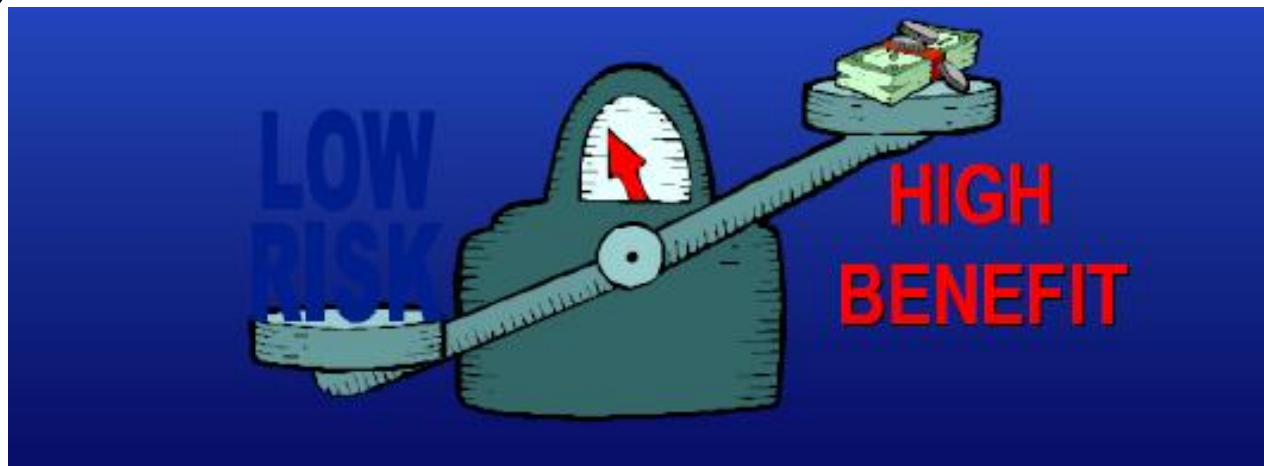
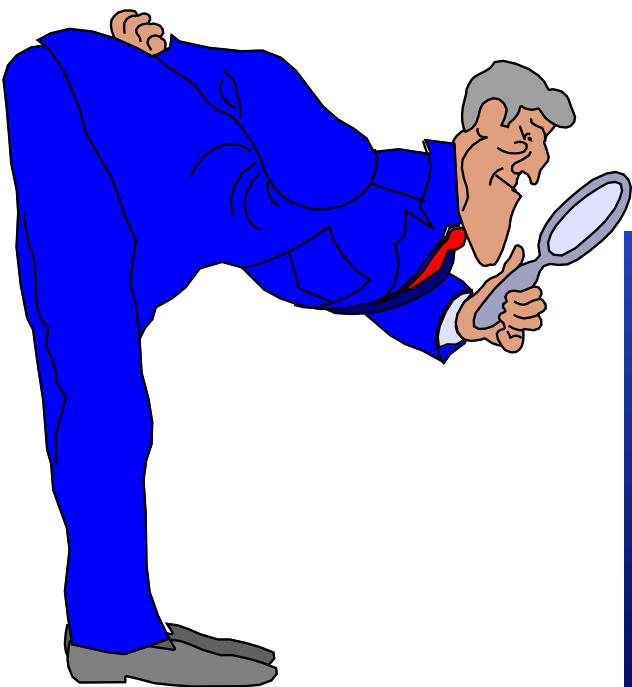
Biological Effects of Ionizing Radiation

1. deterministic effect
2. stochastic effect





1. High Quality Images
2. Acceptable Patient Dose





Medical application of ionizing radiation

- **Medical X ray diagnosis**
- **Clinical nuclear medicine**
- **Radiation oncology**



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14-May-2013 workshop for this guide line





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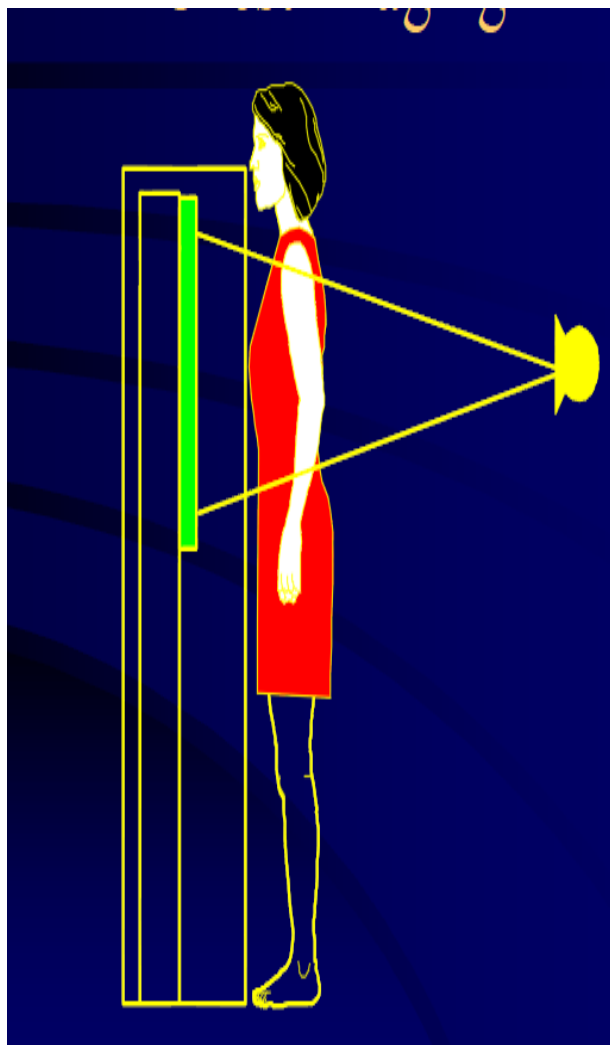
Revised the guide

- took the Representative's advice from Workshop,
- Revised the document again in 2 months

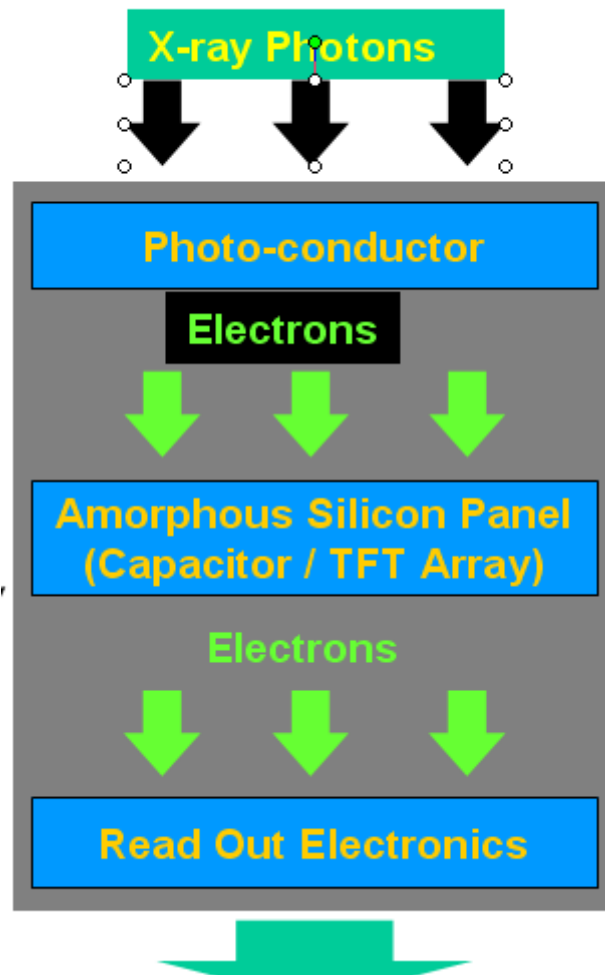


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Direct Conversion





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CT computed tomography





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PET_CT

Positron Emission Tomography





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Medical processing accelerator





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How to use ionizing radiation reasonably?

The accuracy of ionizing radiation equipments



Conclusion

1. Medical X-ray imaging technology is an indispensable means of modern medicine.
2. Improving legal metrological control on medical X-ray diagnostic equipment





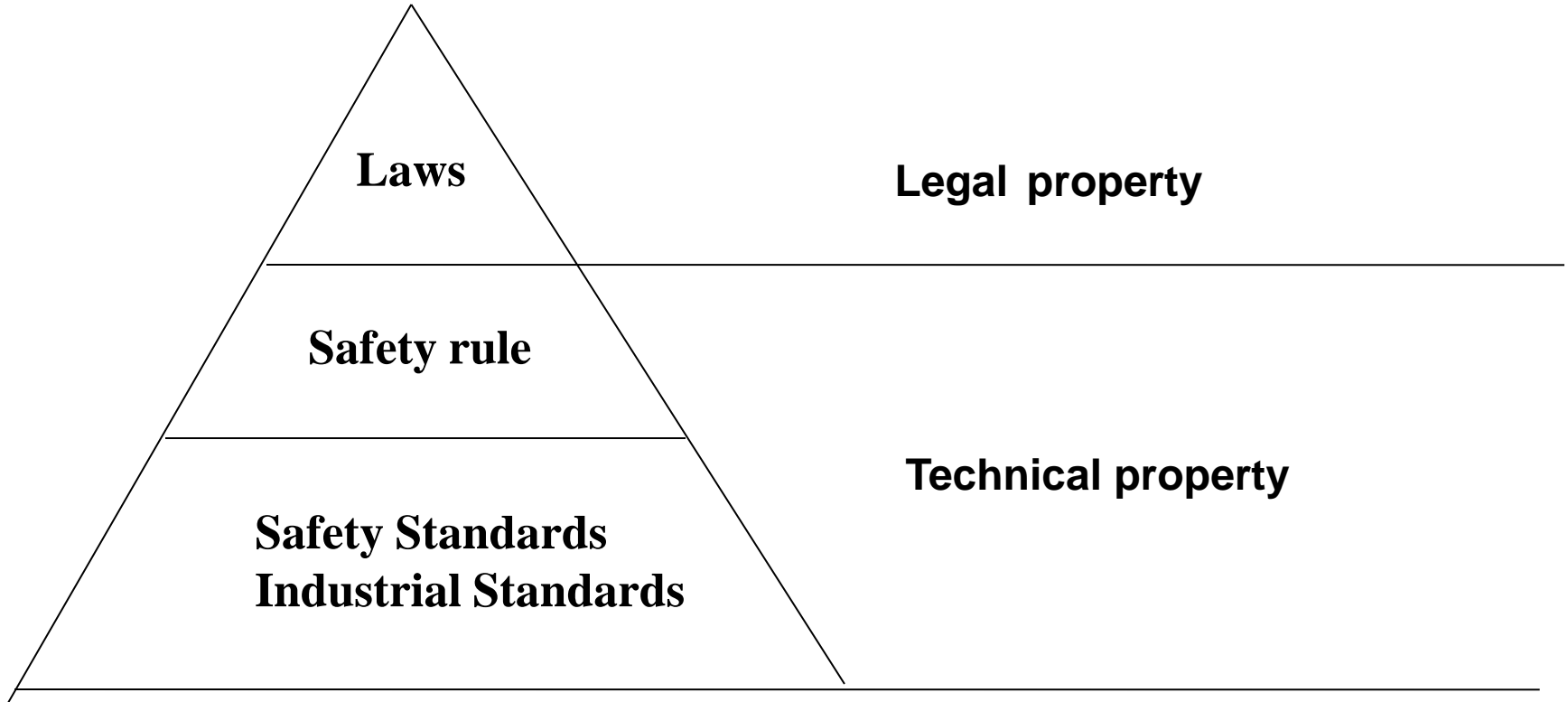
Ensure the traceability of dose of medical ionizing radiation, the legal metrology management must be carried on

Ensure the value in radiotherapy uniform and accurate.



Laws: guarantee to bring radiation metrology into legal metrology

Standards: scientific bases to develop radiation protective surveillance and evaluation





- **The guide is edited in accordance with the general concept and regulations of ionizing radiation metrology in OIML and ISO publication.**
- **It refers to the general metrological requirements and regulations from other OIML publication as well as the fundamentals and application for measurements of ionizing radiation in ISO 11929-2010.**



Guide to the application of ionizing radiation metrology in medicine under legal metrological system

- **1. Introduction**
- **2. Summary**
- **3. Concepts and terms**
- **4. Standards, measurement method and traceability**
- **4.1. Standards**
- **4.2. Measurement items and method**
- **4.3. Metrological traceability of relative instruments**
- **5. Requirements for testing laboratory**
- **Annex A Bibliography**



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The guidelines **aimed to provide
guidance for metrology of ionizing
radiation in medical application**

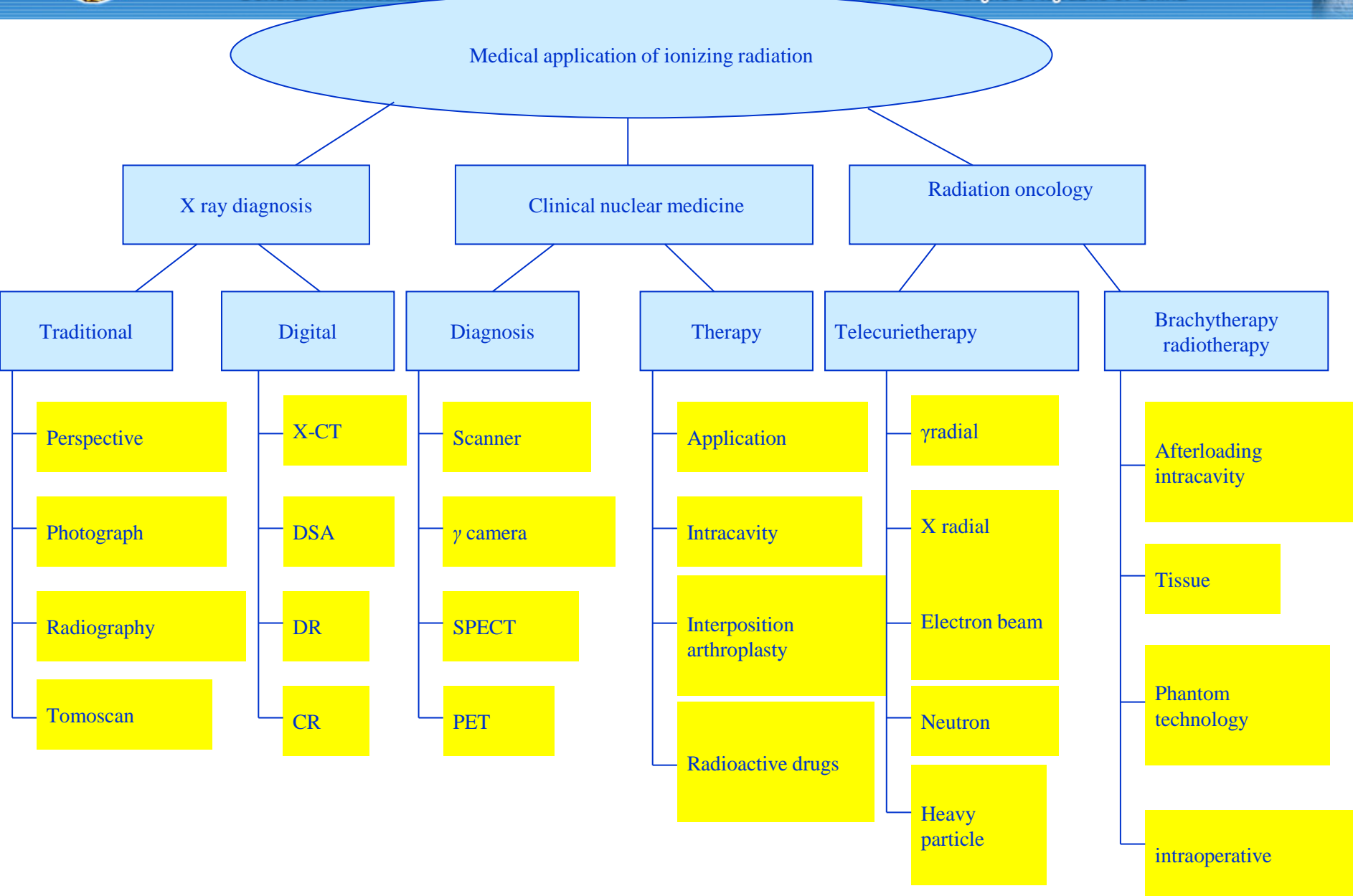


- **Ionizing radiation has been widely applied in all walks of life, especially in medical treatment with longest history, widest spread and the greatest impact. Three branches have been formed including Medical X ray diagnosis, clinical nuclear medicine and radiation oncology. These medical radiation techniques have played a unique role in disease diagnosis and treatment and became indispensable component in modern medical science.**



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Guide No.2-2013

WG on Medical Measurements

- The APLMF Guide to
- The complementary controls of medical devices on metrological and medical supervision

- drafted by the WG on Medical Measurements & Chinese Taipei Bureau of Standards, Metrology and Inspection (BSMI).



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Thank you for your Attention!





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Proposed 2014 Work Plan WG on Metrological Control System (draft)

Yang Youtao

P.R. China



2014 Work Plan

- 1 Associate with WG on Medical Measurements will finish the draft of the guide lines of “Guide to the application of ionizing radiation metrology in medicine under legal metrological system” .**



2. Plan to hold a Symposium 2014

Symposium for guide to the application of ionizing radiation metrology in medicine under legal metrological system



- 3. Plan to hold a Workshop On Software Controlled Measuring Instrument.**
- 4. Think about some guidelines for APLMF in the Metrological Control System.**



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The end