Progress of Product Registration Working Group

4th Joint Conference of Taiwan and Japan on Medical Products Regulation

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Food and Drug Administration,
Ministry of Health and Welfare
http://www.fda.gov.tw/

Product Registration WG

2016.12.07

Overview

1. **Product Registration(PR) WG**
2. Regulations on Product Pre-market Registration in Taiwan
3. Regulations on Product Pre-market Registration in Japan
4. Review Requirements of Dental Implants in Taiwan and Japan
5. Case Study
6. Summary

Members of PR Working Group

Taiwan	
Ms. Ting-Yao Wu	Section Chief, Division of Medical Devices & Cosmetics, Food and Drug Administration, Ministry of Health and Welfare
Dr. Ta-Jen Wu	Technical Specialist, Division of Medical Devices & Cosmetics, Food and Drug Administration, Ministry of Health and Welfare
Dr. Han-Son Dawn	Regulation Director, Taiwan Medical and Biotech Industry Association
Mr. Tzu-Wei Li	Industrial Technology Research Institute

Japan	
Dr. Madoka Murakami	Office of International Programs Pharmaceuticals and Medical Devices Agency (PMDA)
Mr. Hirokazu Takahashi	Regulatory System Committee, Japan Federation of Medical Devices Associations (JFMDA)
Mr. Makoto Yokote	Asia Subcommittee, Japan Federation of Medical Devices Associations (JFMDA)

Product Registration Working Group

- **Goal:**
  1. Share the reviewing experiences between Taiwan and Japan.
  2. Mutual understanding
  3. Simplified registration processes to benefit both industries.

- **Working item in 2016:**

  Implement a case study program of dental implant to understand the review differences between Taiwan (TFDA) and Japan (PMDA).

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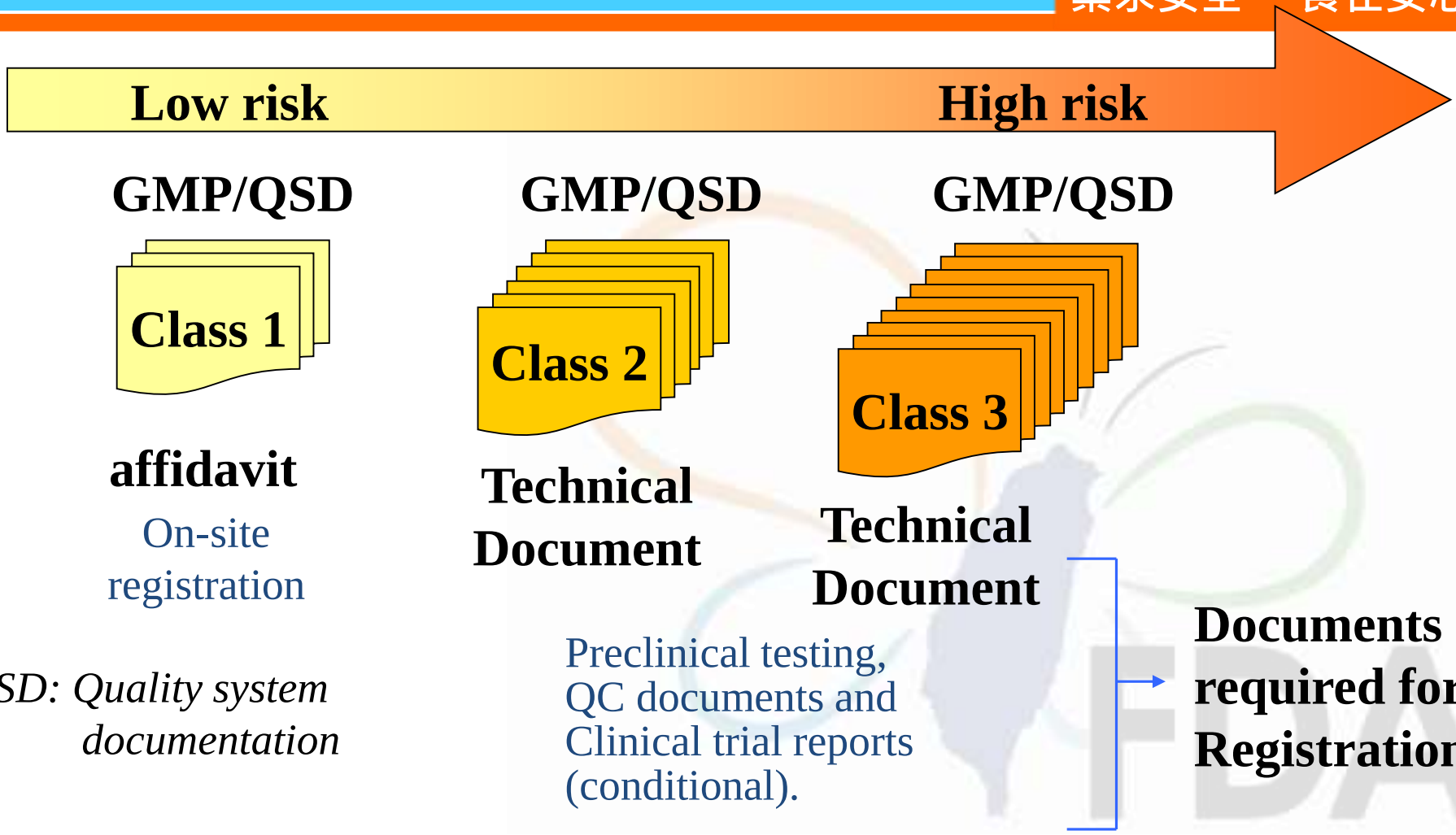
Regulations on Product Pre-market Registration in Taiwan

- **Pharmaceutical Affairs Act**
  - For the manufacturing and import of medical devices, an application together with fees paid, shall be filed with the central competent health authority for registration and market approval.
- **Regulations for Governing the Management of Medical Device**
  - Medical device classification
- **Regulation for Registration of Medical Device**
  - Registration requirements

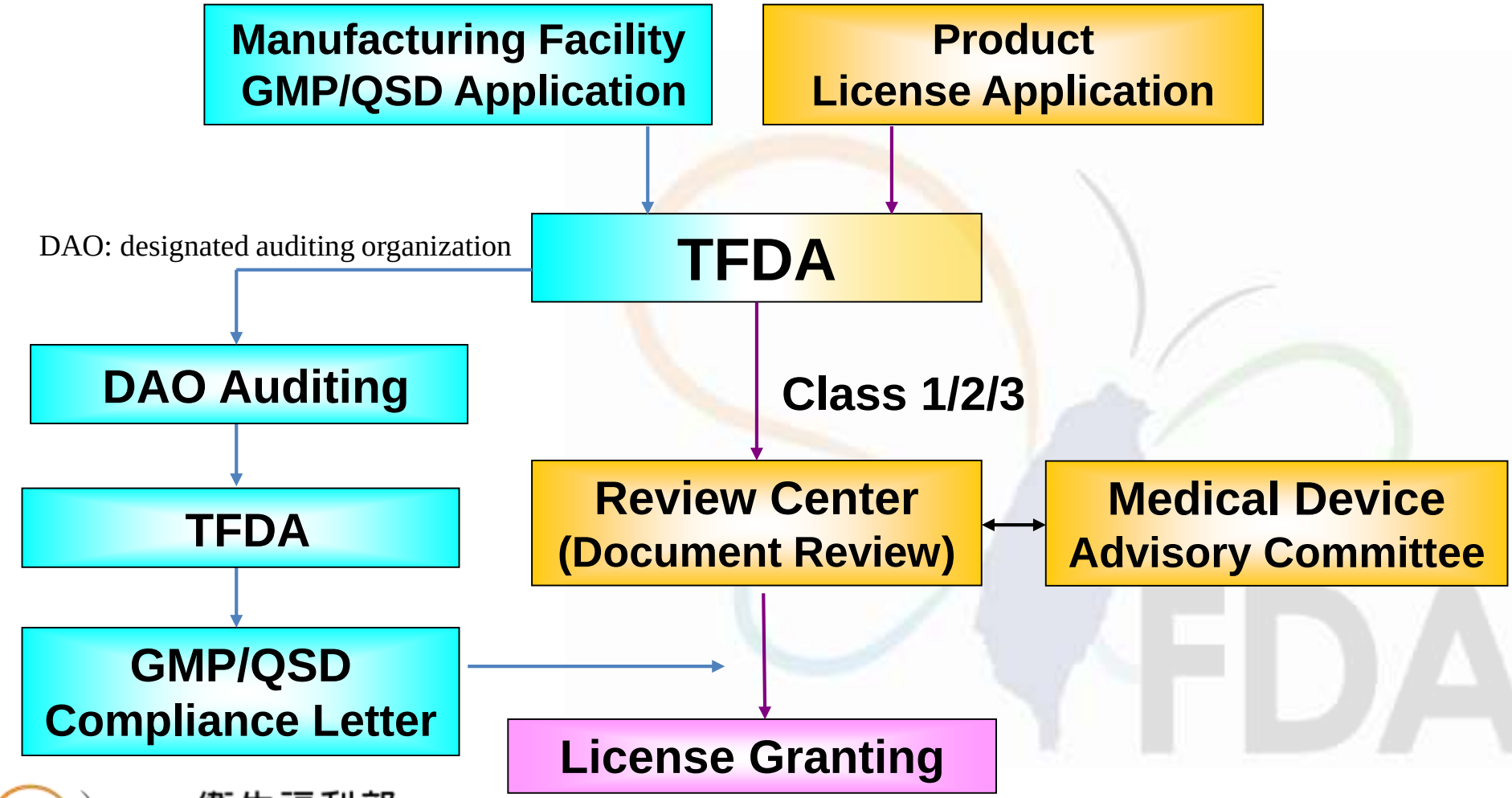
Risk Based Regulation

藥求安全　食在安心



■ **More than 1700 regulated medical device items in Taiwan**

Before Marketing a Medical Device Product in Taiwan



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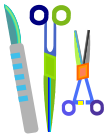
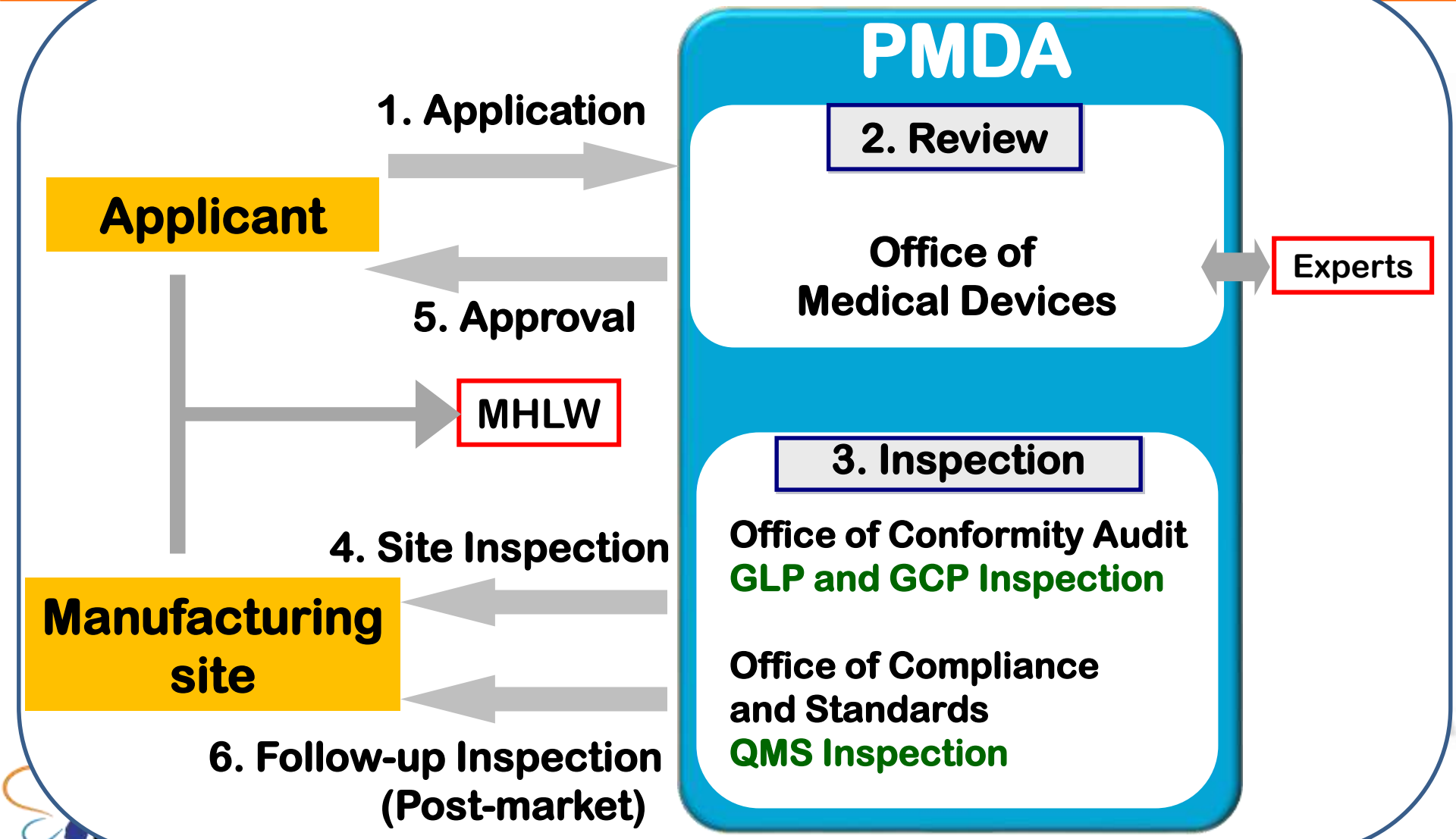
Risk Based Regulation

GHTF Classification		PAL classification		As of April, 2015
		Category	Regulatory requirements	Japanese MD Nomenclature
Class A 	Extremely low risk e.g., X-ray film	General MDs (Class I)	**Self declaration** Approval of the product is not required, but marketing notification is necessary.	1,195
Class B 	Low risk e.g., MRI, digestive catheters	Controlled MDs (class II)	**Third party Certification** Certification by a registered certification body is required. ・Certification standard **Certification (Review by CB)** / **Minister's Approval (Review by PMDA)**	1,955 (1,369 for 3rd Party)
Class C 	Medium risk e.g., dialyzer	Specially Controlled MDs (class III & IV)	The Minister's approval for the product is required. ・Approval standard ・Review guideline	760
Class D 	High risk e.g., pacemaker			346

Overview of review process



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Requirements of Dental Implants

Items	Taiwan	Japan
1. Classification	Class III	Class III
2. Application Documents	Almost the same	
3. STED documents	Almost the same	

Items	Taiwan	Japan
4. Administrative Information	(1) Pharmaceutical Company License or Certificate (2) Affidavit A (3) Certificate to Foreign Government (only for foreign manufacturers) (4) Letter of Authorization (only for foreign manufacturers) (5) Certificate of GMP for domestic or QSD for foreign manufacturers	Documents are not required but information such as name/location of manufacturer, license number for manufacturer, classification of license are required to be written in application document.

Items	Taiwan	Japan
5. Requirement of Technical Standard for Approval	The requirements of technical standard are almost the same such as Mechanical Test, Compatibility between Fixture and Abutment and etc.	
6. Clinical investigation	Clinical investigation is required if there is no predicted products.	
7. Biological Evaluation of Medical Devices	The Biological Evaluation is almost the same besides the Stimulation test.	
	Not mentioned	“使用模擬試驗(Stimulation test)" is required.

<table>
<tr><th>Items</th><th>Taiwan</th><th>Japan</th></tr>
<tr><td>8. Others</td><td>For products less than 3.25 mm in diameter or less than 7 mm in length, the intended use shall be limited to "maxillary central/lateral incisors".</td><td>For products out of scope in the chart below, additional evaluation will be required.

<table><tr><th>Size</th><th>One-piece</th><th>Two-piece</th></tr><tr><td>Maximum Diameter</td><td>3.0-6.0mm</td><td>3.0-7.0mm</td></tr><tr><td>Length</td><td>13.5-23.8mm</td><td>6.0-22.0mm</td></tr></table>
note: two-piece products less than 3.8mm in diameter and less than 6.25mm in length are excepted from the chart</td></tr>
</table>

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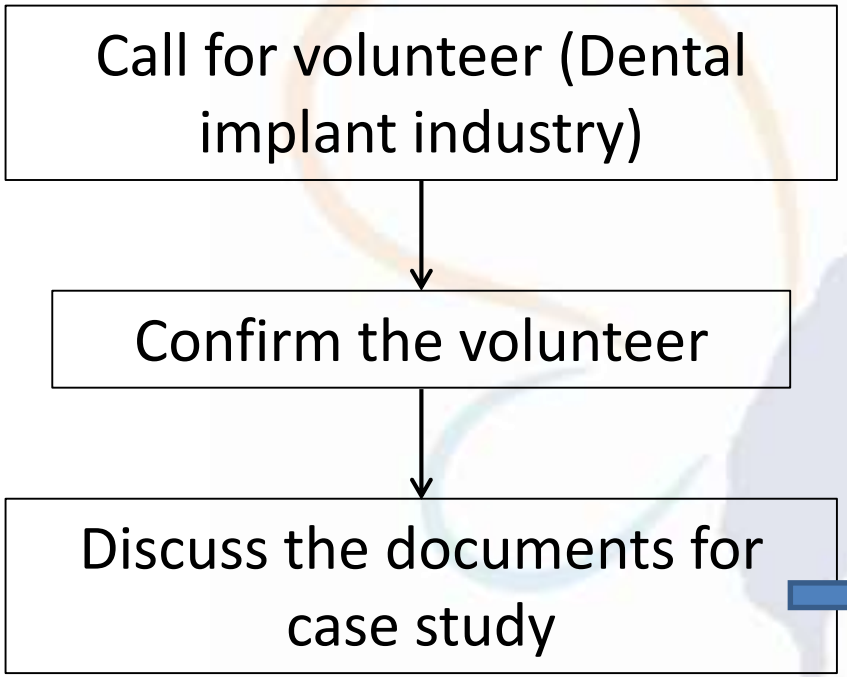
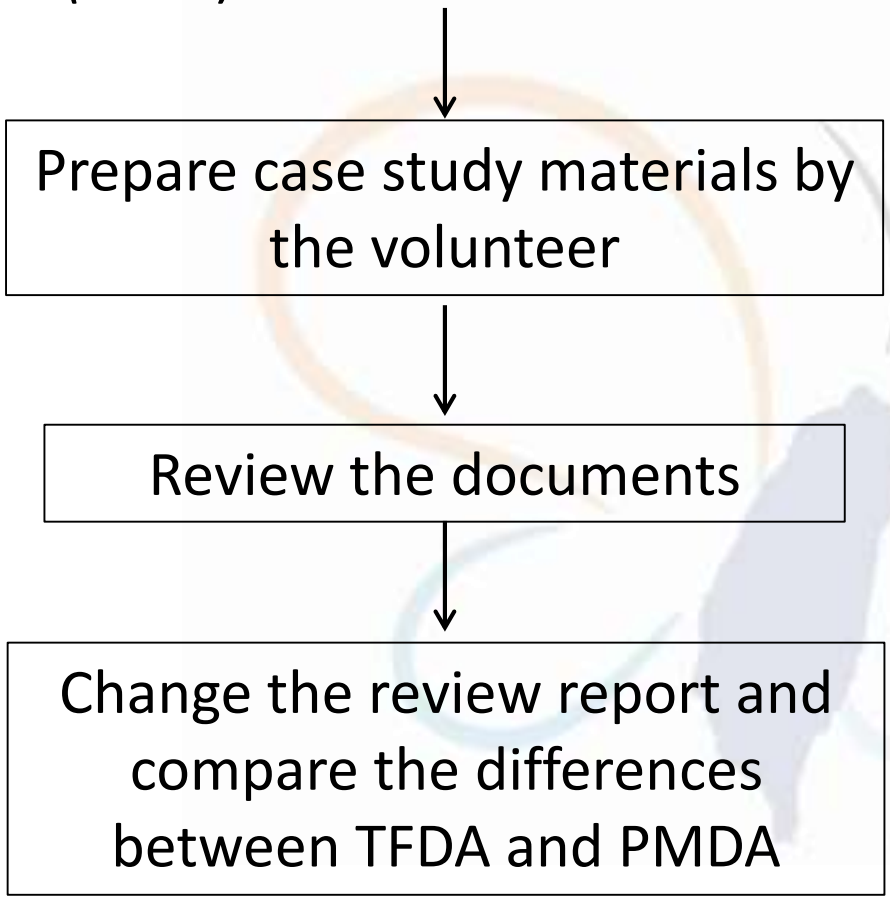
Case Study Introduction (1/2)

- Case study item: Dental Implant
- Working process:



Case Study Introduction (2/2)

- Working Process *(cont.)*:



Guidance for Pre-clinical Testing of Endosseous Implant in Taiwan (1/2)

- **Scope:**

F.3640 Endosseous Implant

An endosseous dental implant is a device made of a material such as titanium or titanium alloy, that is intended to be surgically placed in the bone of the upper or lower jaw arches to provide support for prosthetic devices, such as artificial teeth, in order to restore a patient's chewing function.

Guidance for Pre-clinical Testing of Endosseous Implant in Taiwan (2/2)

- **Product description and specification**

  Including Product spec., Drawing, Structure, Material, Chemical Composition, Surface modification and etc..

- **Safety and performance data**

  1. Biocompatibility tests, including Cytotoxicity, Sensitization, Irritation/Intracutaneous reactivity, Acute systemic toxicity, Subacute and subchronic toxicity, Genotoxicity and Implantation. Chronic toxicity and Carcinogenicity are only for new material.
  2. Performance tests, including Mechanical test, Compatibility, and Corrosion test.

Approval Standard for Dental Implant in Japan (1/3)

- **Issued in 2009 (QA was also issued in 2012)**
- **Scope**
  - Same materials, substantially equivalent surface processing, substantially equivalent surface condition
  - Immediate loading type and short term loading type are exempt
  - Required to meet certain technical criteria
  - Products whose structure, procedure for use, efficacy are significantly different are exempt

If the product is out of scope of this approval standard, the applicant needs to make additional explanation with necessary evaluation.

Approval Standard for Dental Implant in Japan (2/3)

Main technical criteria

- **Structure**

  Form, Size, Assemblage

- **Material**
- **Physical property**

  1. Surface processing (Details of processing, roughness after processing)
  2. Fatigue test
  3. Bending test*
  4. Bending elasticity test*

*: These tests are applied for products made from ceramics or polymer material

Approval Standard for Dental Implant in Japan (3/3)

Main technical criteria

- **Chemical property**
  1. Resolvability or resolvability*;
  2. Water absorbability*;
  3. Corrosion resistance**
- **Bio-compatibility**
- **Risk Analysis** including residues due to surface processing and fatigue strength

*: These criteria are applied for products made from ceramics or polymer material

**: This criterion is applied for products made from metal whose surface processing is not equivalent to the existing product.

Case Introduction (1/2)

Items	
Instruction for use	1. Made from processed pure grade IV titanium. 2. Comprised of dental implants and abutments. 3. Indicated for surgical placement in the upper and lower jaw arches, to provide a root form means for single or multiple unit prosthetic appliance attachment to restore a patient's chewing function. 4. Designed for conventional two-stage and single stage procedures for single and multiple unit prosthetics 5. Used for immediate loading procedure 6. R-ray irradiation

Case Introduction (2/2)

Items

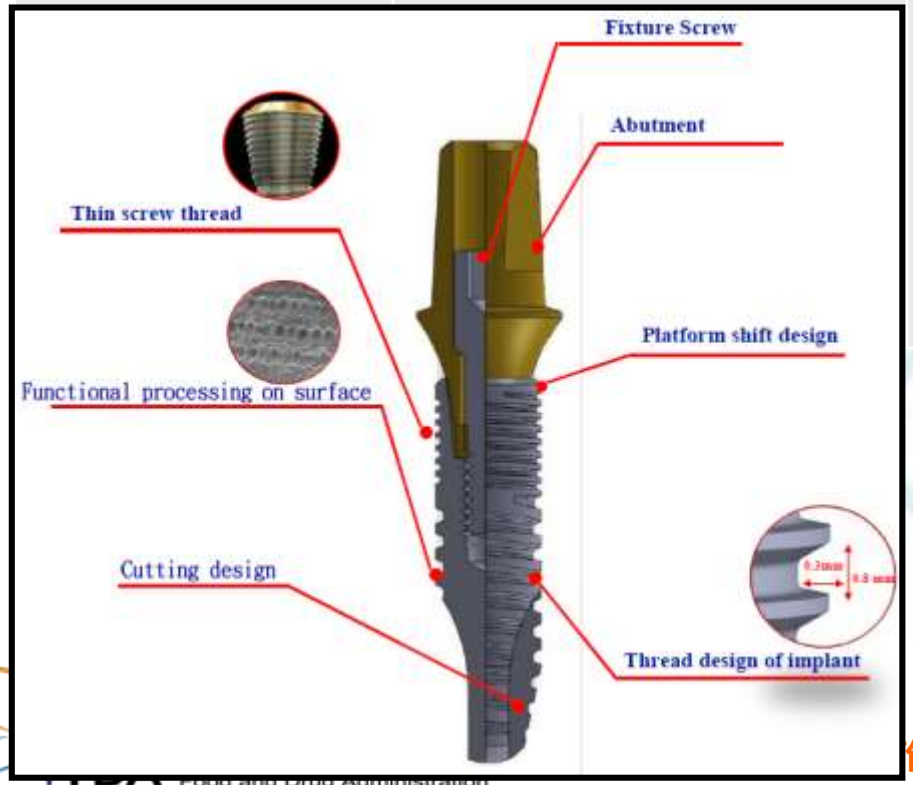
Specification

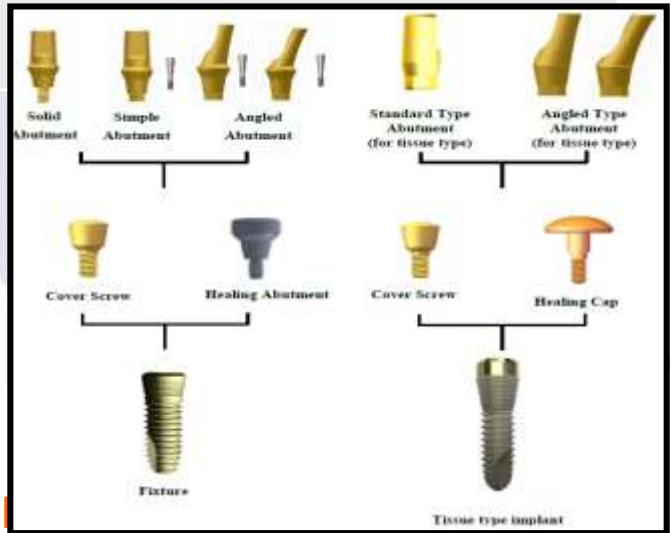
Product Name	Dental Implant System	Project Number	RD0001	Page	4/22
Document Number	BI-IM-B001	Revise date	2012.08.01	Version	D

Item	Specification characteristic	Specification Instruction	Remark
2	Total Length of Implant(mm)	Bone type: 8.0±0.1、10.0±0.1、12.0±0.1、14.0±0.1 Tissue type: 9.8±0.1、11.8±0.1、13.8±0.1、15.8±0.1	
3	Outer Diameter of Root(mm)	3.3±0.02、4.0±0.02、4.7±0.02	
4	Platform Legth(mm)	Bone type: 0.3+0.1、0.4+0.1 Tissuse type: 1.8+0.1	
5	Diameter of neck (mm)	3.3±0.02、4.1±0.02、4.8±0.02、5.5±0.02	
6	Type (Shape) Characteristic	Such as: internal hexagonal feature, flat axual surface features on implants, fins, threads, or vertical anti-rotati slots.	

Review Comparison (1/3)

Items	Taiwan	Japan
Material and structures	Did not mention about the surface modification process	1. Are bone-type and tissue-type developed with the same concept of development? 2. The concept of development of each type showing details of structure (especially for screw), size, surface processing should be explained.





Review Comparison (2/3)

Items	Taiwan	Japan
Biocompati-bility tests	No findings. Notes: 1. Biocompatibility tests meet the requirements of ISO 10993 and “Guidance for Pre-clinical Testing of Endosseous Implant”. 2. Chronic toxicity and Carcinogenicity are not necessary due to the pure grade IV titanium.	No findings.

Review Comparison (3/3)

Items	Taiwan	Japan
Functional tests	1. The fatigue test should be performed with full parts. 2. Should evaluate whether the test sample is the worst case of the fatigue test. 3. Should evaluate whether the Shear force and Corrosion test be performed. Note: Compatibility test can be waived because the manufacturer claimed that the dental implant is compatible with their abutment.	1.Fatigue test should be conducted with specimen which is assembled with components. 2.Applicant should explain which components are assembled for the test and why it is thought as a weakest case. 3. Applicants should explain what kind of technology enable the product be used for immediate loading procedure.

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Summary

- In 2014, PR working group put effort into comparison of the review requirements of dental implants and hemodialysis.
- PR working group implemented a case study program of dental implant to understand the review differences between Taiwan (TFDA) and Japan (PMDA) in 2016.
- For the review findings, there are no significant differences between TFDA and PMDA. Only few dissimilar findings existed in “Material and Structure” and “Functional tests” sections.

Thank you for your attention!