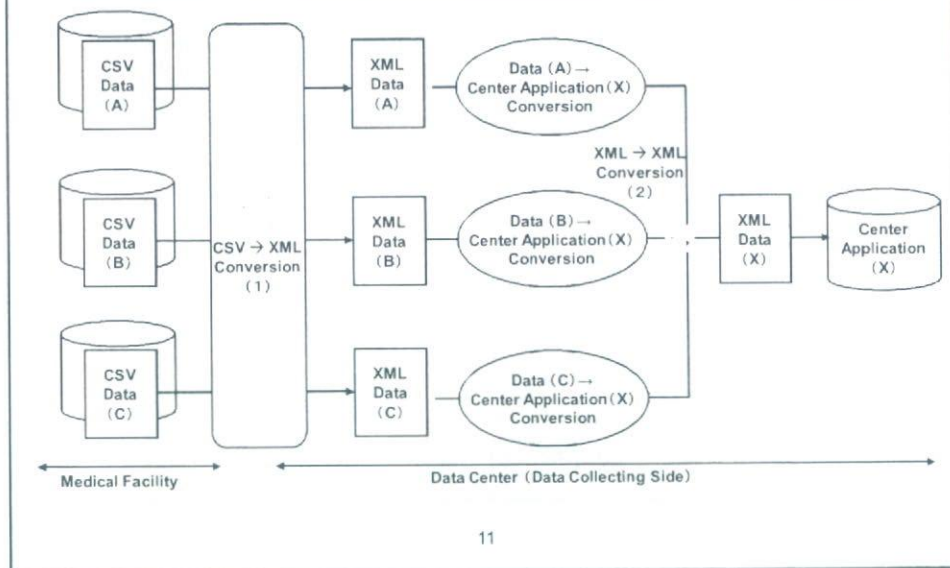


Mechanism of Data Integration



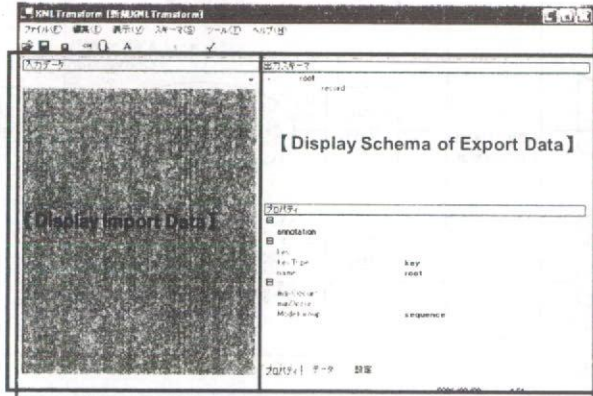
Outline

- Background in Japan
- Our Experience
- The Possible Solutions
- Validation of Technical Issues
- Next Challenge

The Possible Solution



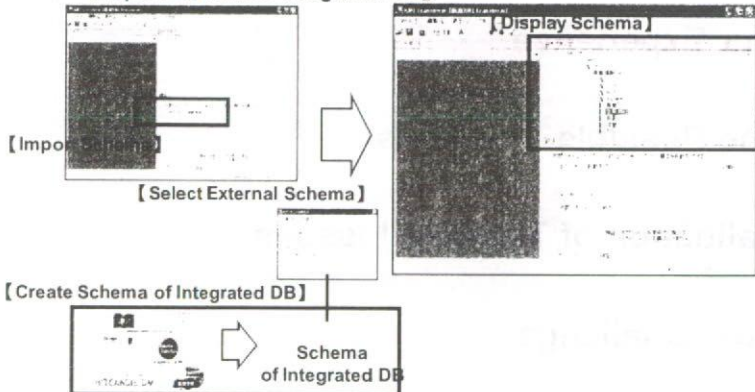
【Start Up Screen of XML Transform】



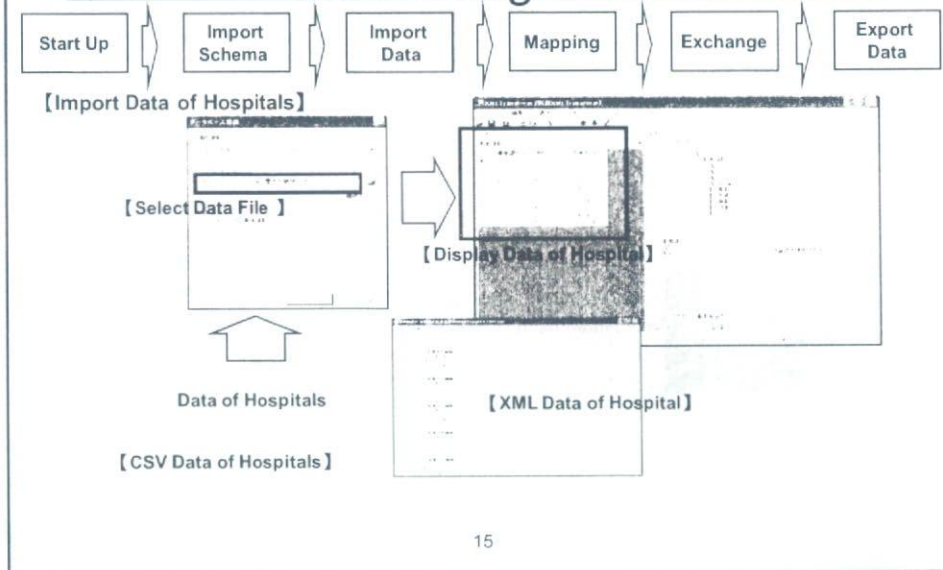
The Possible Solution for Data Integration



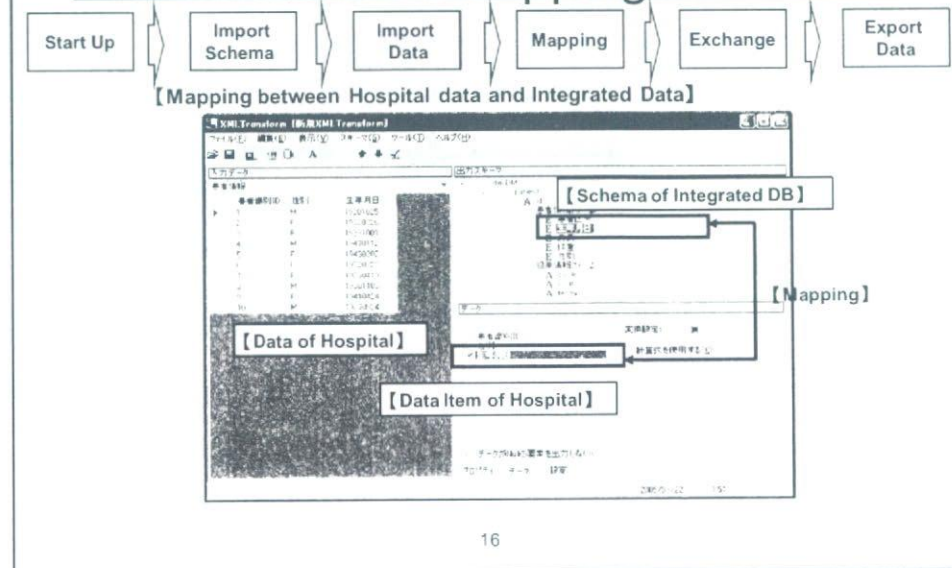
【Import Schema of Integrated DB】

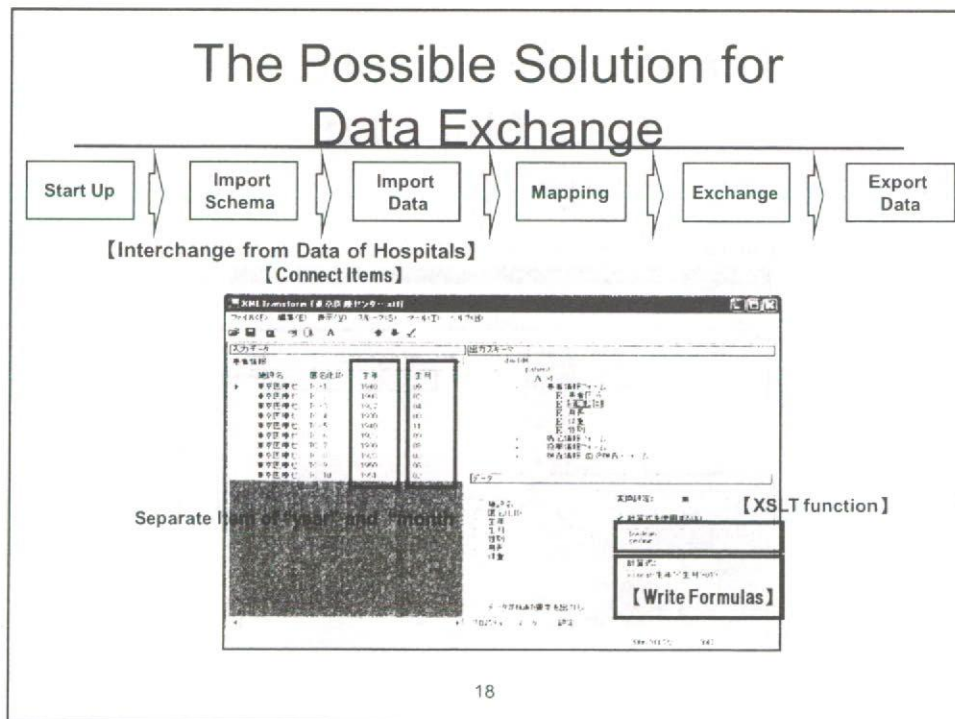
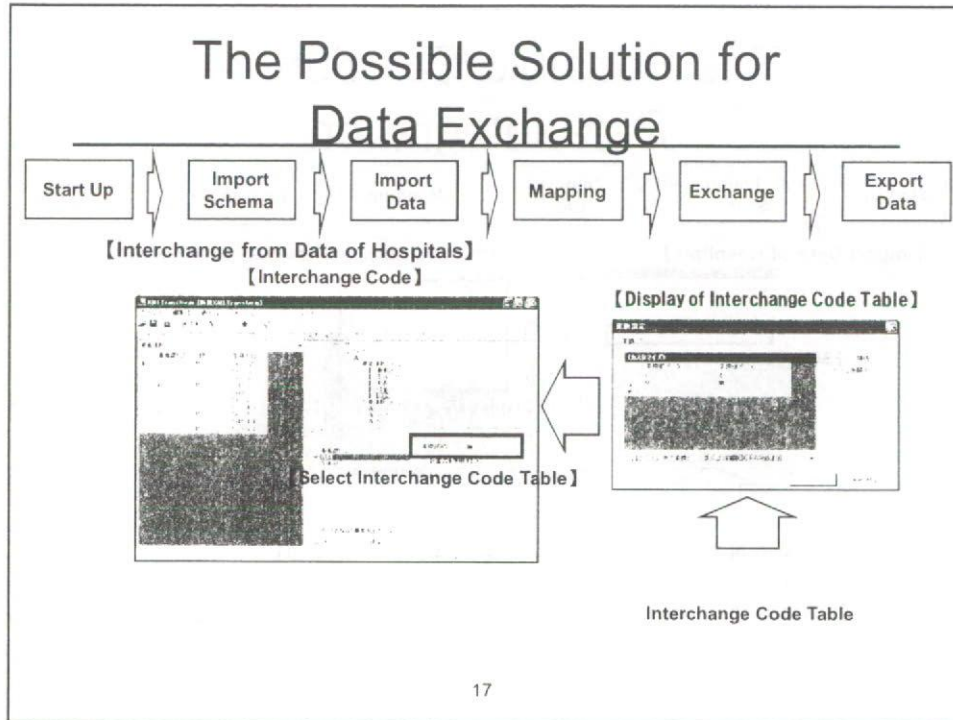


The Possible Solution for Data Integration

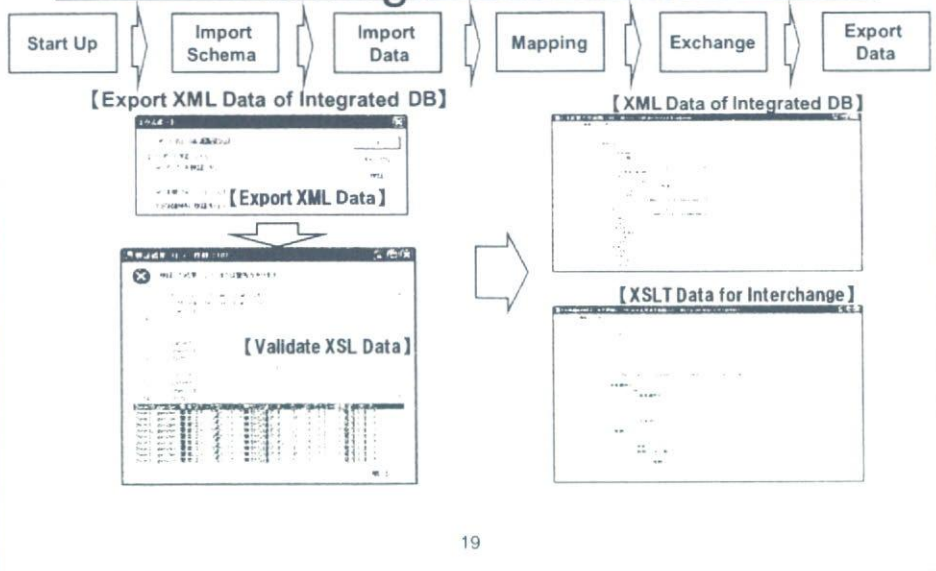


The Possible Solution for Data Mapping





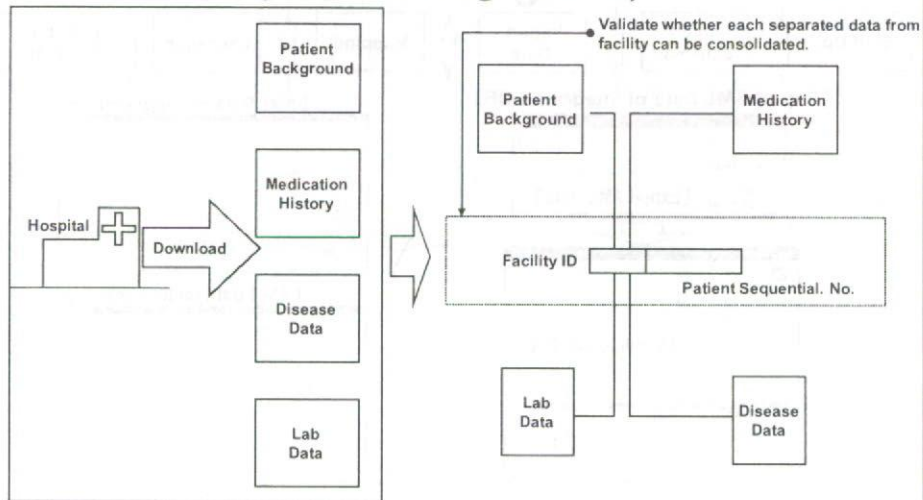
The Possible Solution for Message Conversion



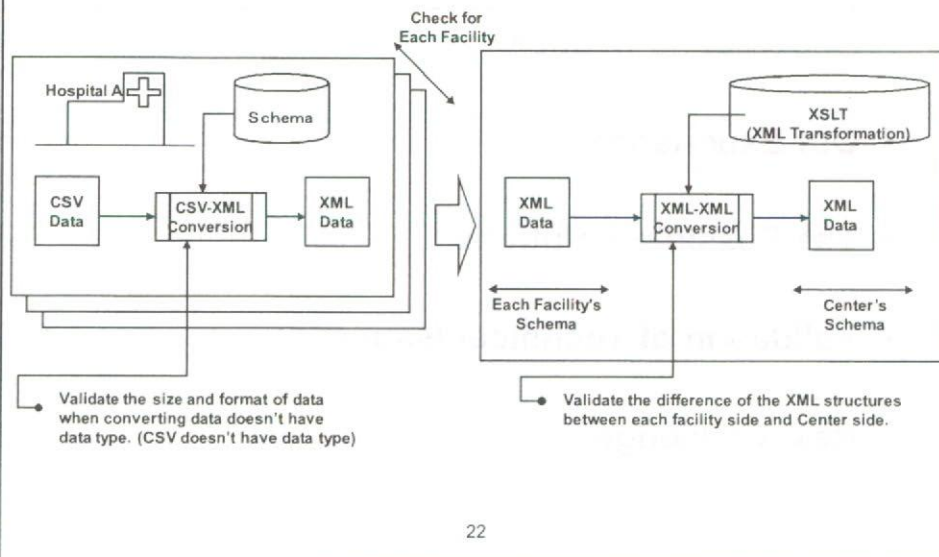
Outline

- Background in Japan
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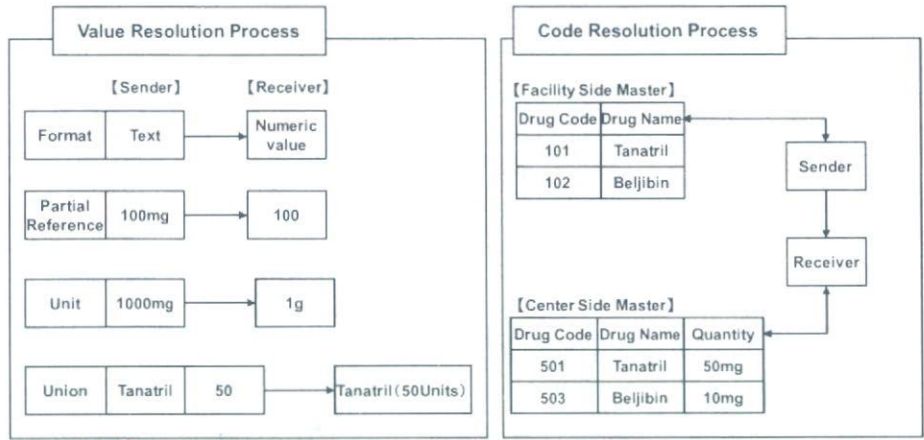
Validation of Technical Issues (Data Integration)



Validation of Technical Issues (Message Conversion)



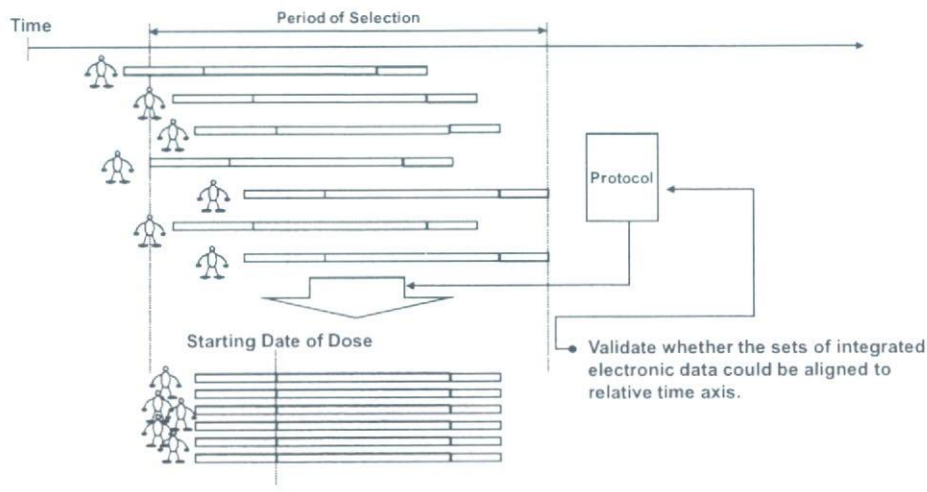
Validation of Technical Issues (Data Exchange)



To integrate the data from the sets of provided electronic data, validate the difference of Attribute or number of places, transformation of units, conversion of code, partial reference, and union among items.

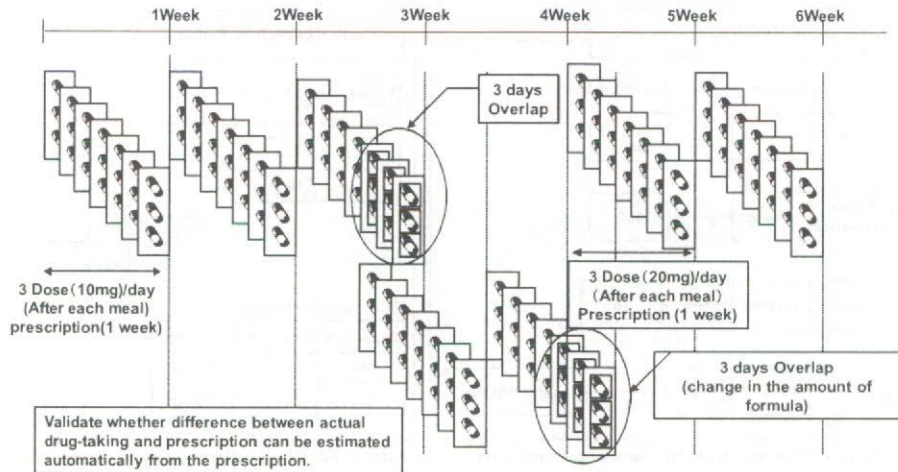
23

Validation of Technical Issues (Time Slice)



24

Validation of Technical Issues (Drug Overlap)



25

Validation of Technical Issues (Missing Data/Observation)

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6
Patient 1						
Patient 2						
Patient 3						
Patient 4						
Patient 5						
Patient 6						
Patient 7						
Patient 8						
Patient 9						
Patient 10						
Patient 11						
Patient 12						
Patient 13						

Validate on how to deal with variety of cases of missing data automatically. Can we extrapolate them?

Change hospital

End of medication

26

Outline

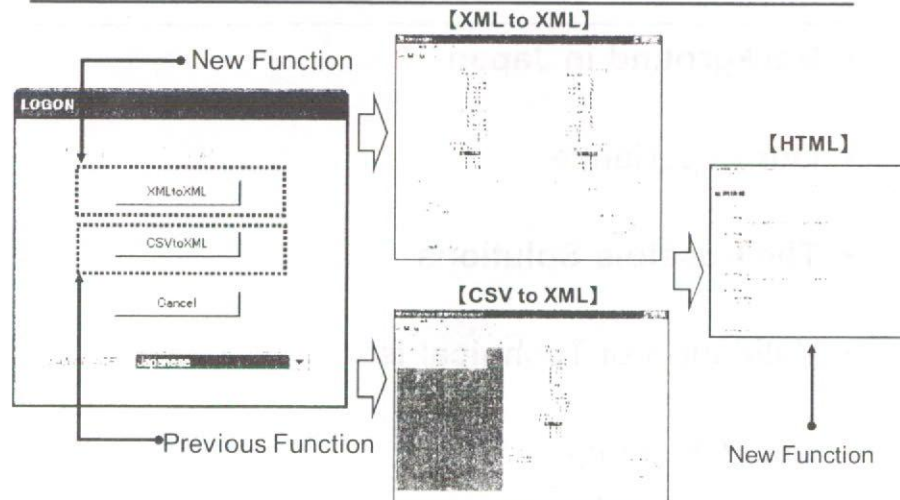
- **Background in Japan**
- **Our Experience**
- **The Possible Solutions**
- **Validation of Technical Issues**
- **Next Challenge**

Improvement of Solutions

- **Combine EDC**
- **Transform XML to XML**
([Now] Transform Plane XML ,in other words CSV, to XML)
- **Display** at Browser (Human Readable)
- **Editing** missing data and error data at entry screen
- Function of **data cleaning**
- **Templates**
(CDISC ODM Model, Define.xml, E2B, HL7 CDA, eCTD ect)



Improvement of Solutions



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Improvement of Solutions

	New MHLW Research	Previous MHLW Research
Study Type	Prospective Study	Retrospective Study
Therapy Area	Oncology	Cardiovascular
Adverse Event Data	Target Data	NO DATA
Data Capture	EDC + Data Extraction	Data Extraction
Time of Extraction	Several Times	Once

30



**Our Experience and Significance in a
Japanese Sentinel Network System**

Kitasato Univ. School of Pharmaceutical Science
Division of Biostatistics and Pharmaceutical Medicine
Masahiro Takeuchi



Outline

- The Impact of US FDA Critical Path Initiative on New Drug Development
- The Current Situation in Japan
- The Impact of a Sentinel Network System in Japan

- The Impact of US FDA Critical Path Initiative on New Drug Development
- The Current Situation in Japan
- The Impact of a Sentinel Network System in Japan

FDA Critical Path Initiative

■ Fact 1:

Biomedical research spending has increased in the last decade

BUT

The number of submissions to FDA has been decreasing in the last decade



Figures 1-6

Figure 1: 10-Year Trends in Biomedical Research Spending

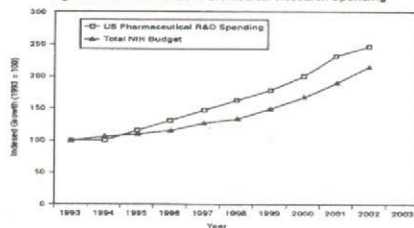
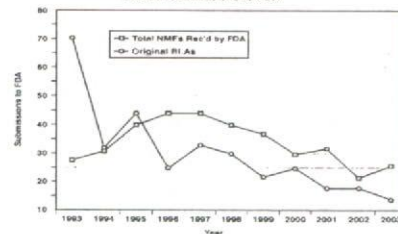


Figure 2: 10-Year Trends in Major Drug and Biological Product Submissions to FDA



FDA Critical Path Initiative

■ Fact 2:

Biomedical science has been blooming, allowing for discovery of innovative products

BUT

Promising innovative candidates has been evaluated by the last century's tool

The success rate of Phase III is 50%



Science for science has advanced

Science for society has not advanced

No return to taxpayer

FDA Critical Path Initiative

■ Goal:

The application of a new concept is required:

Computer modeling techniques, biomarkers, clinical trial endpoints --- for efficiency and effectiveness



The innovative clinical trial method is required

-
- The Impact of US FDA Critical Path Initiative on New Drug Development
 - The Current Situation in Japan
 - The Issues to be Concerned

Current Situation in Japan

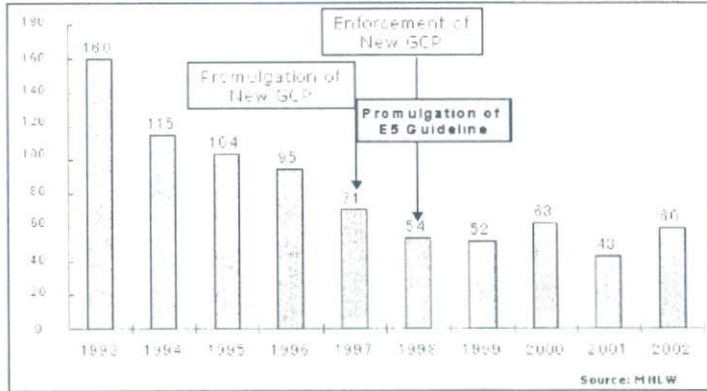
- Clinical Trial Costs:

Very High

- Numbers of Clinical Trials:

Diminishing

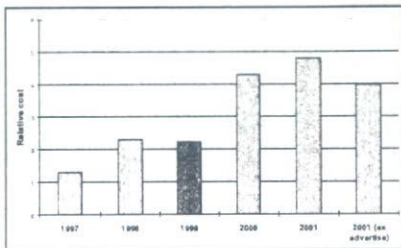
No. of Initial Clinical Trial Notifications



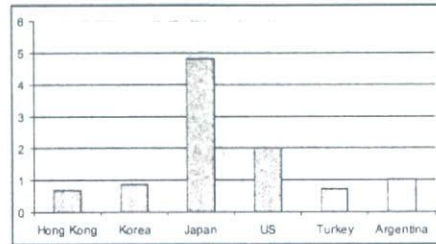
Kitasato University, Division of Biostatistics & Division of Pharmaceutical Medicine

Costs of Clinical Trials in Japan

Average cost per patient per year



Relative cost per patient

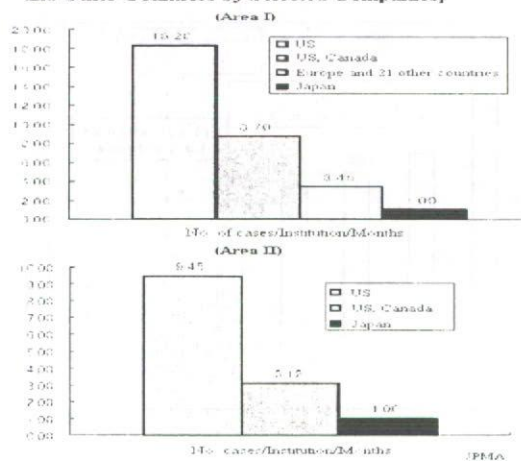


Presentation by Dr. Uden at 3rd Kitasato-Harvard Symposium, 2002

Kitasato University, Division of Biostatistics & Division of Pharmaceutical Medicine

Speed of Clinical Trials in Japan

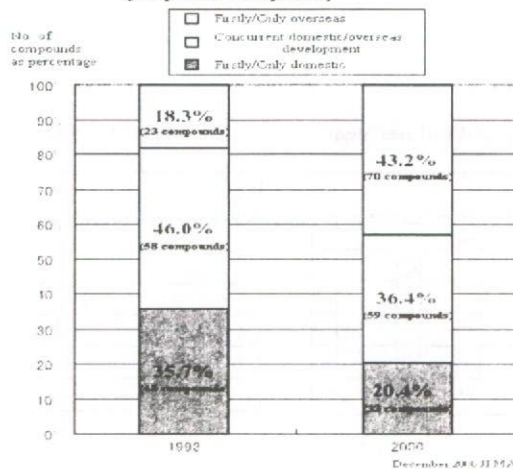
[Comparison of Speed of Clinical Trials in Japan and Other Countries by Selected Companies]



Kitasato University, Division of Biostatistics & Division of Pharmaceutical Medicine.

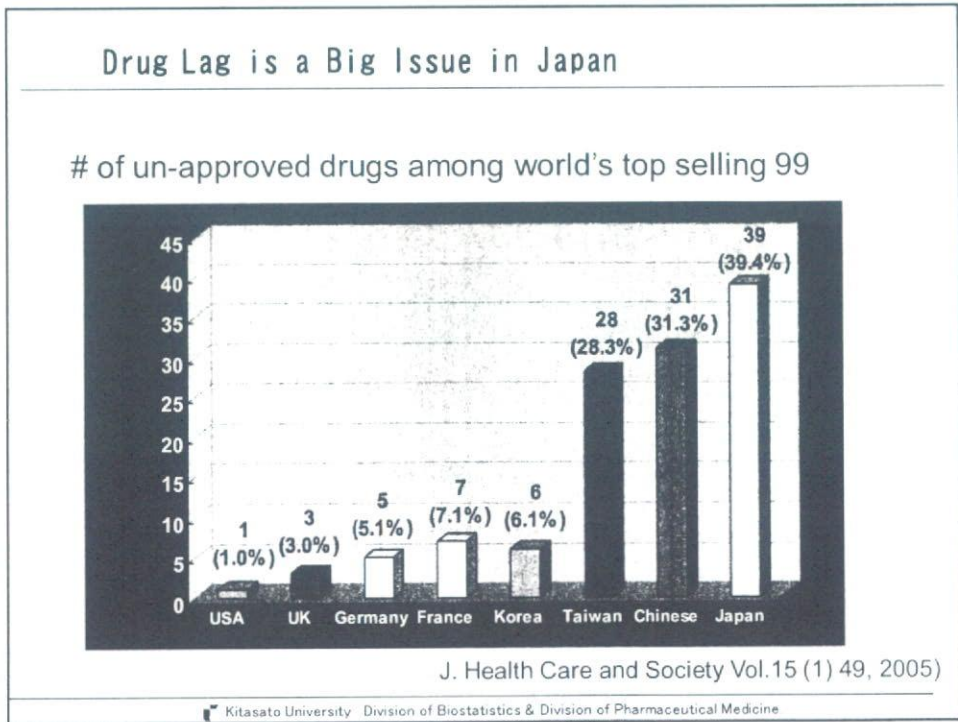
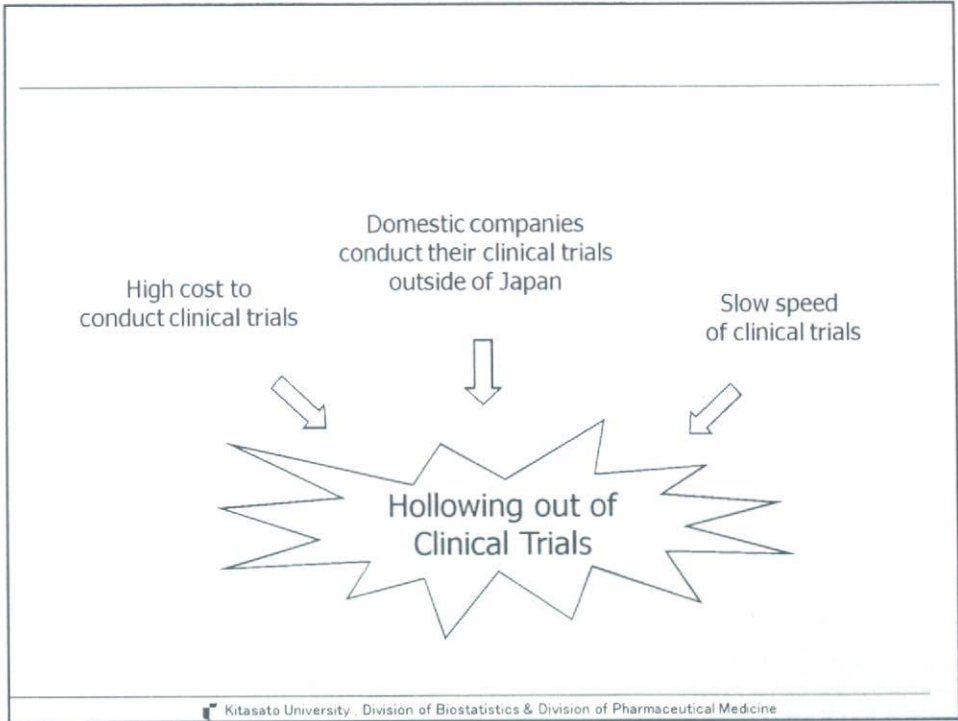
Location of Clinical Trials conducted by Japanese Companies

[Location of Clinical Trials Conducted by Japanese Companies]



Even Japanese companies conduct clinical trials in foreign countries

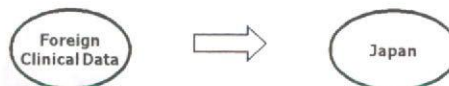
Kitasato University, Division of Biostatistics & Division of Pharmaceutical Medicine.



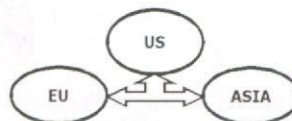
- The Impact of US FDA Critical Path Initiative on New Drug Development
- The Current Situation in Japan: Part 2
- The Issues to be Concerned

Basic Idea: Avoidance of Unnecessary Clinical Trial

Bridging Study



Global Study



Participation in Asian and Multinational Global Study

- Bridging study

- ◆ Intrinsic and extrinsic factors

- Participation in Asian and Global Studies

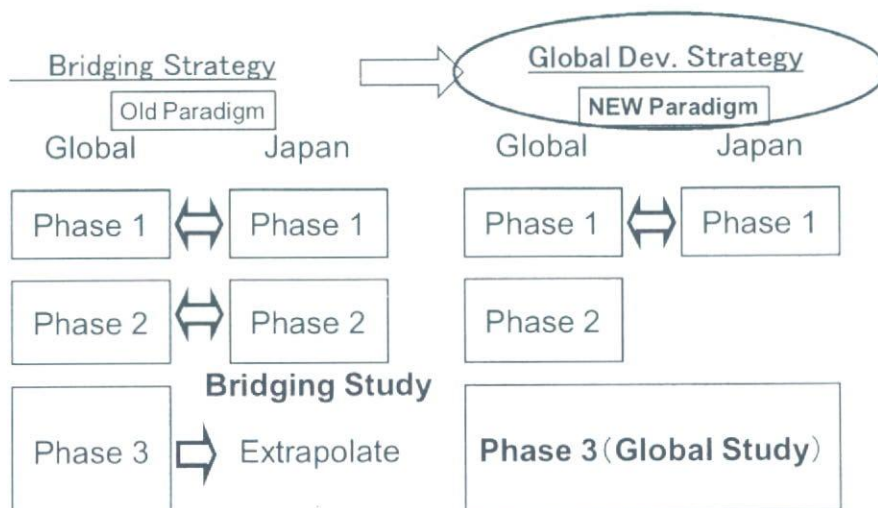
- ◆ Apply existing extrapolation of data to an ongoing study
i.e. mutual extrapolation of data

Appropriate dosage in new regions



Key point

More Global Studies in Japan



- The Impact of US FDA Critical Path Initiative on New Drug Development
- The Current Situation in Japan
- The Impact of a Sentinel Network System in Japan

Critical Issues

- Application of New Approach:
 - ◆ the number of exposed pts has decreased
 - Efficacy can be evaluated through extrapolation of data
 - Safety issues can be region-oriented:
 - Several racial oriented adverse events have been reported

We need guarantee of safety to pts

- need safety network: monitoring system
- need scientific pharmacovigilance investigation