Development of the Automatic Adjustment System for the Appropriate Radiopharmaceutical Dose

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Introduction

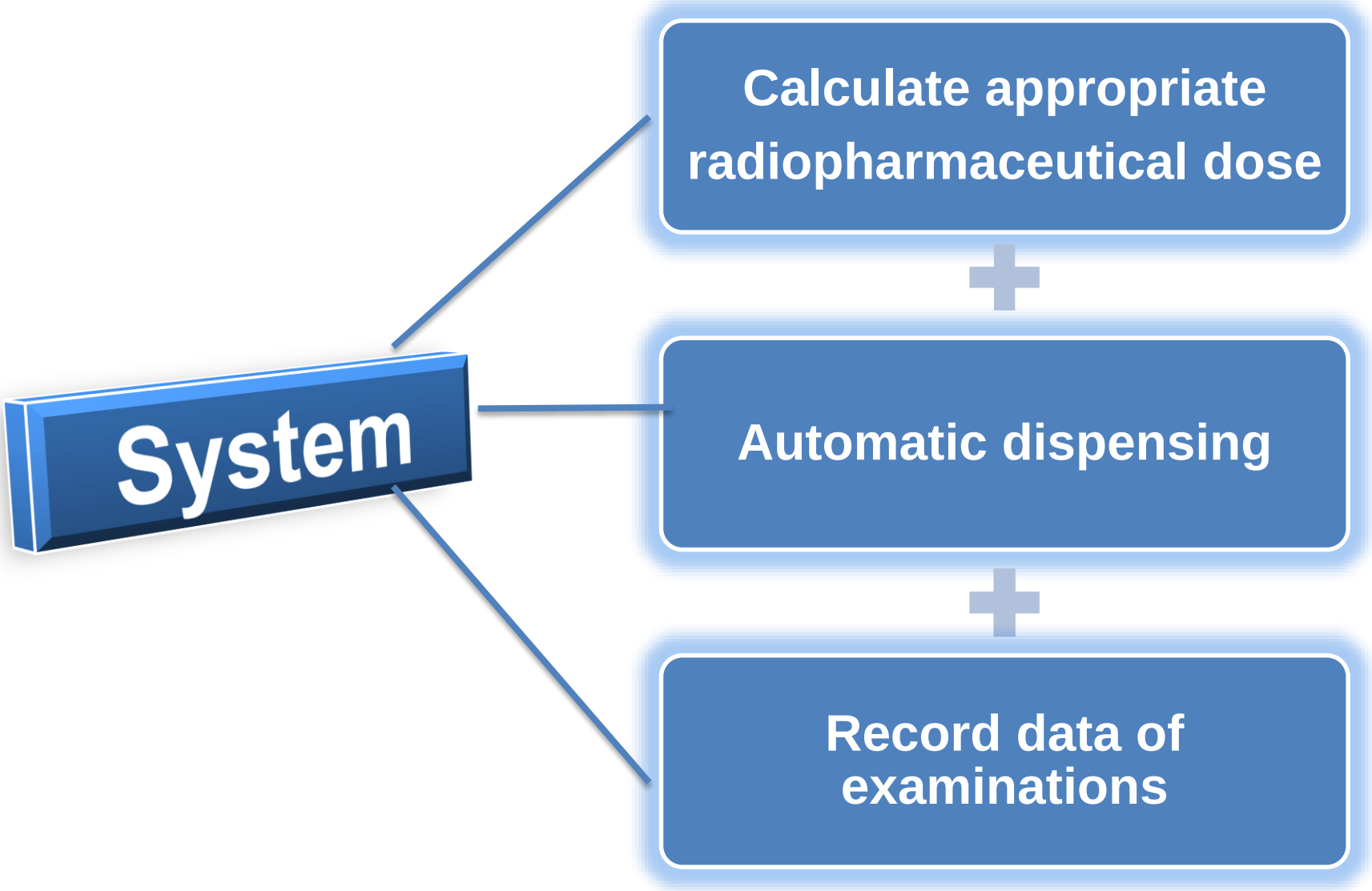
2011
Over-prescription for children

2013
DRLs was suggested

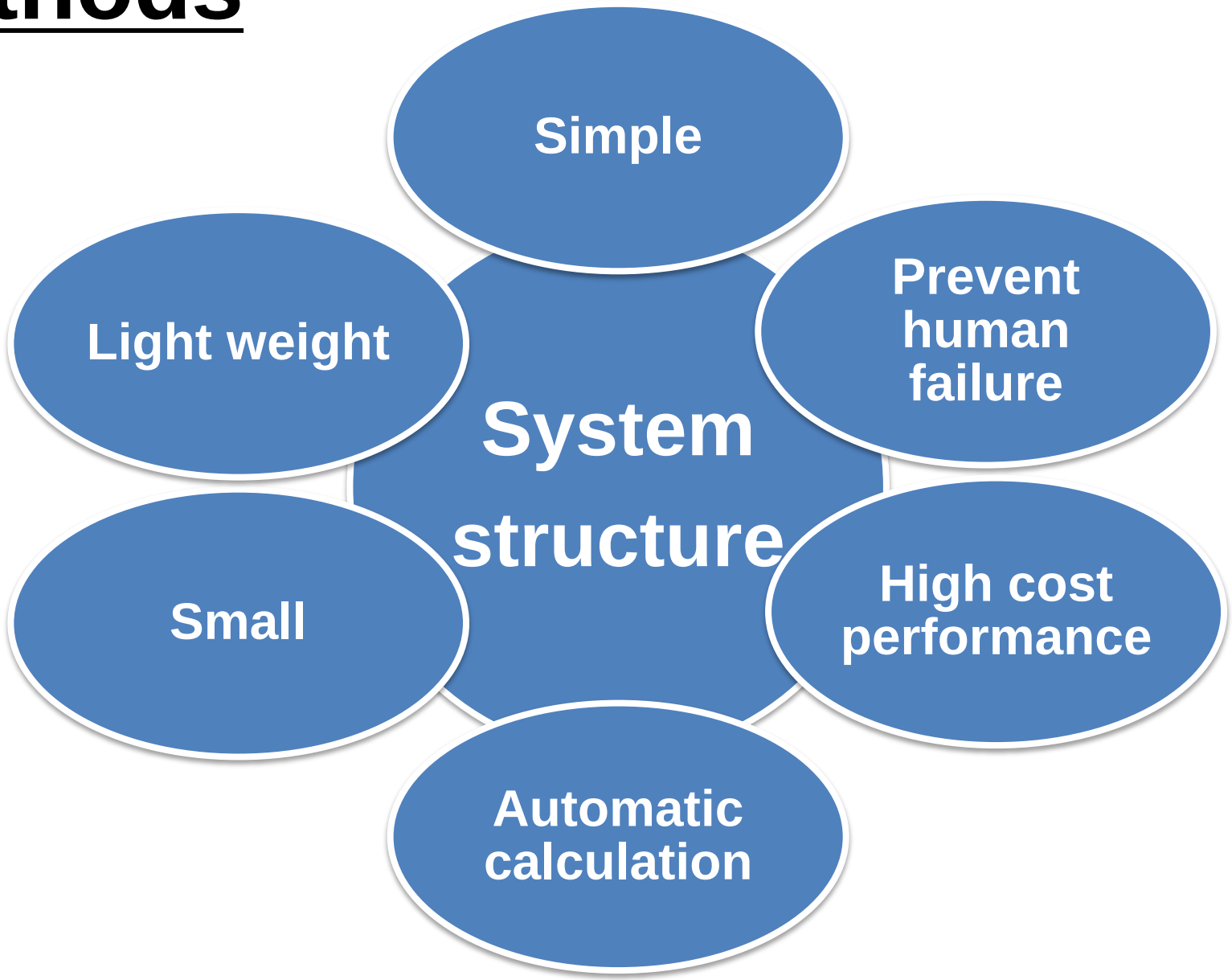
Adjust appropriately radiopharmaceutical dose by the patient's age and physique

Nuclear medicine examination

Purpose


System
Calculate appropriate radiopharmaceutical dose
Automatic dispensing
Record data of examinations

Methods


Simple
Light weight
Prevent human failure
System structure
Small
High cost performance
Automatic calculation

Results

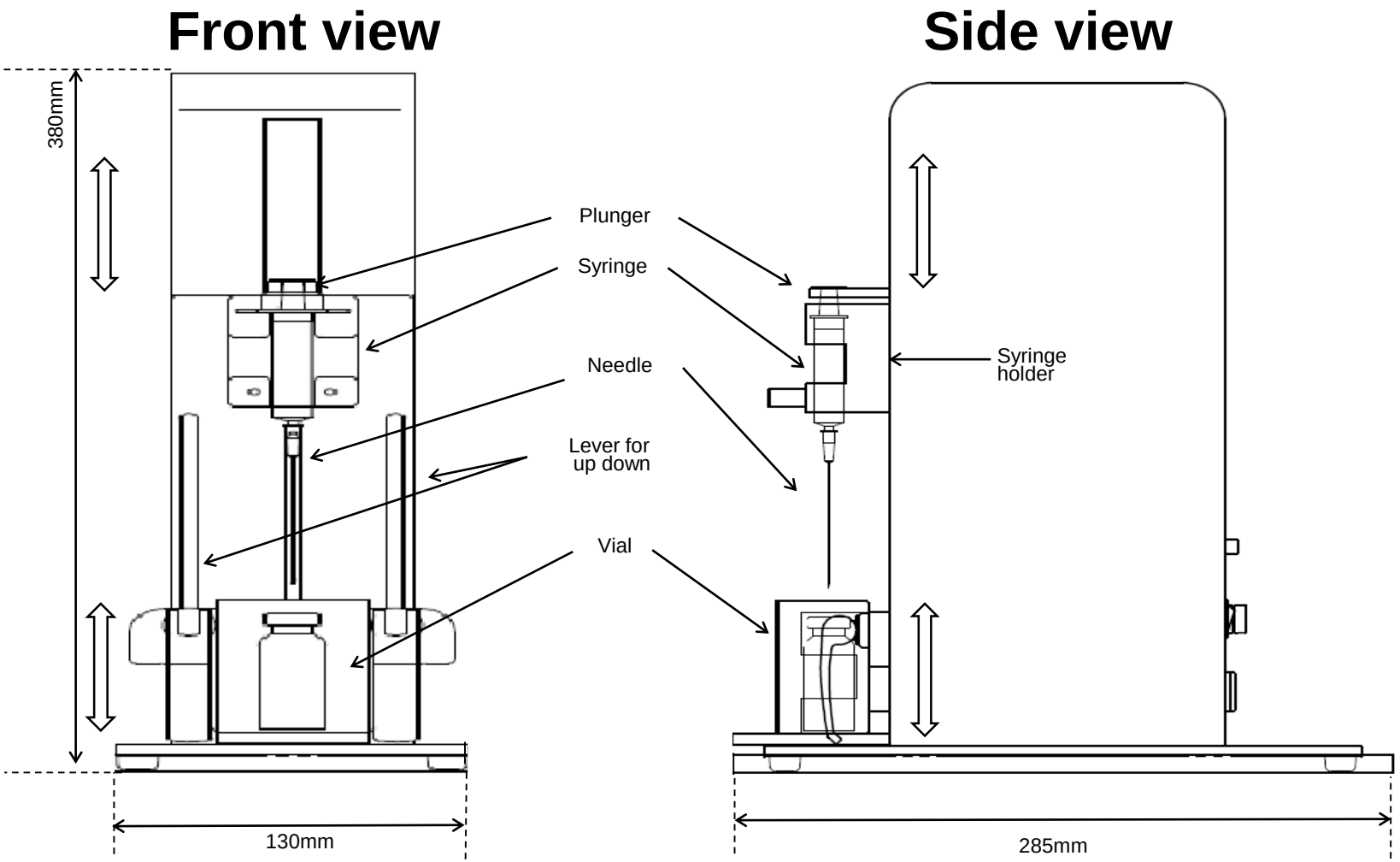


Figure.1 Appearance diagram of the dispenser

The size is 130 mm*380 mm*285 mm, and the weight is 4730 g.

Results

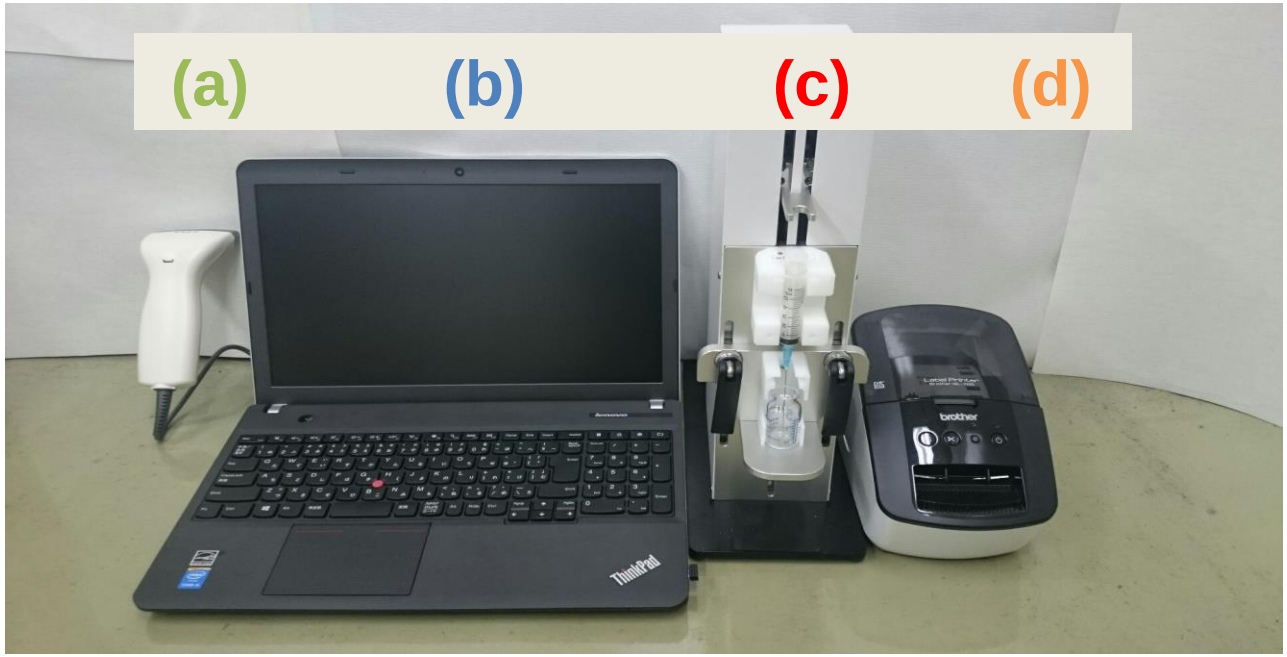


Figure.2 Photographs of the automatic adjustment system

(a) **Barcode reader** for reading radiopharmaceutical data
(b) **PC** for inputting patient information et al.
(c) **Dispenser** for equipment to plunger
(d) **Printer** for outputting patient information et al.

Results

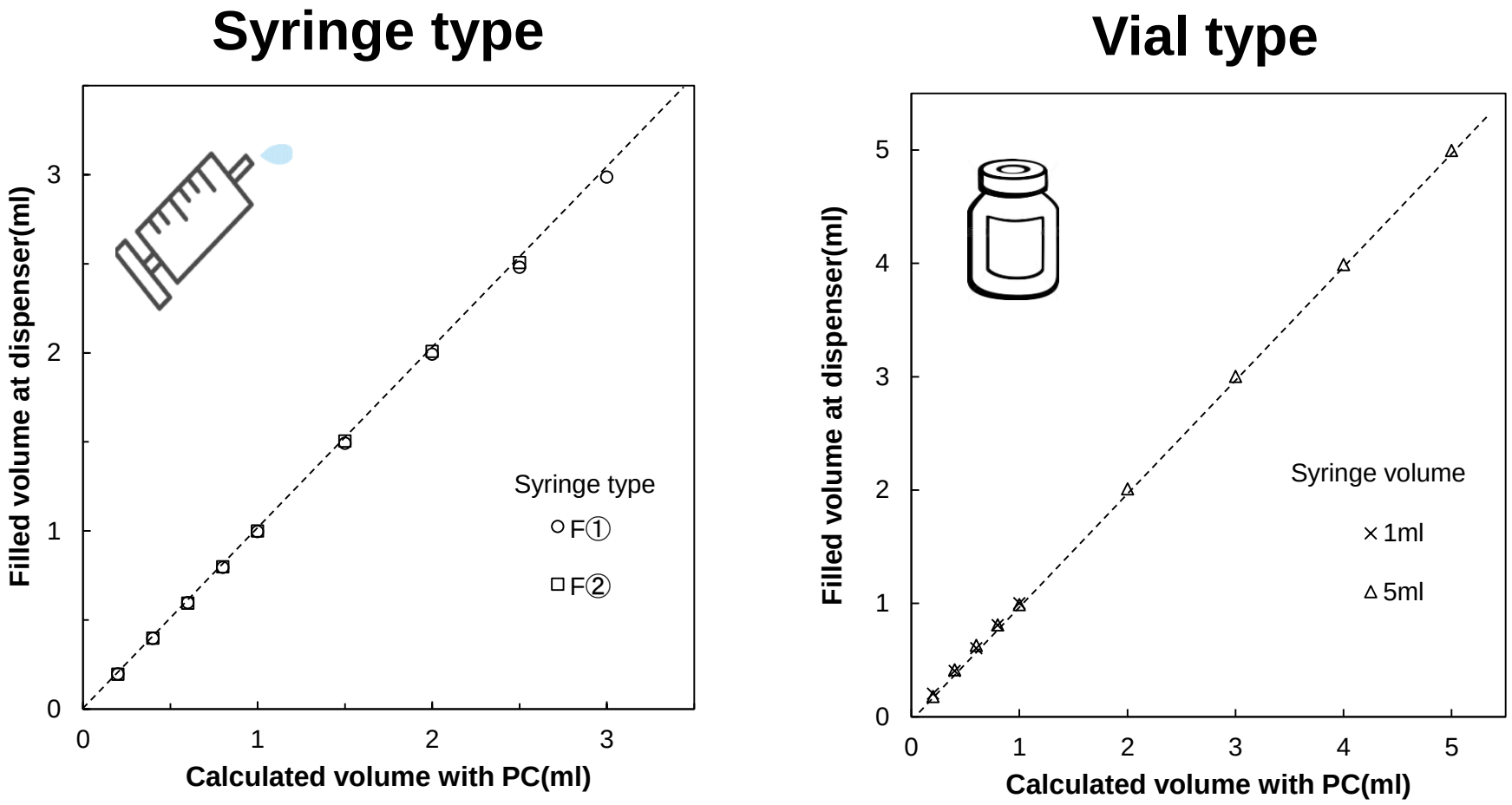
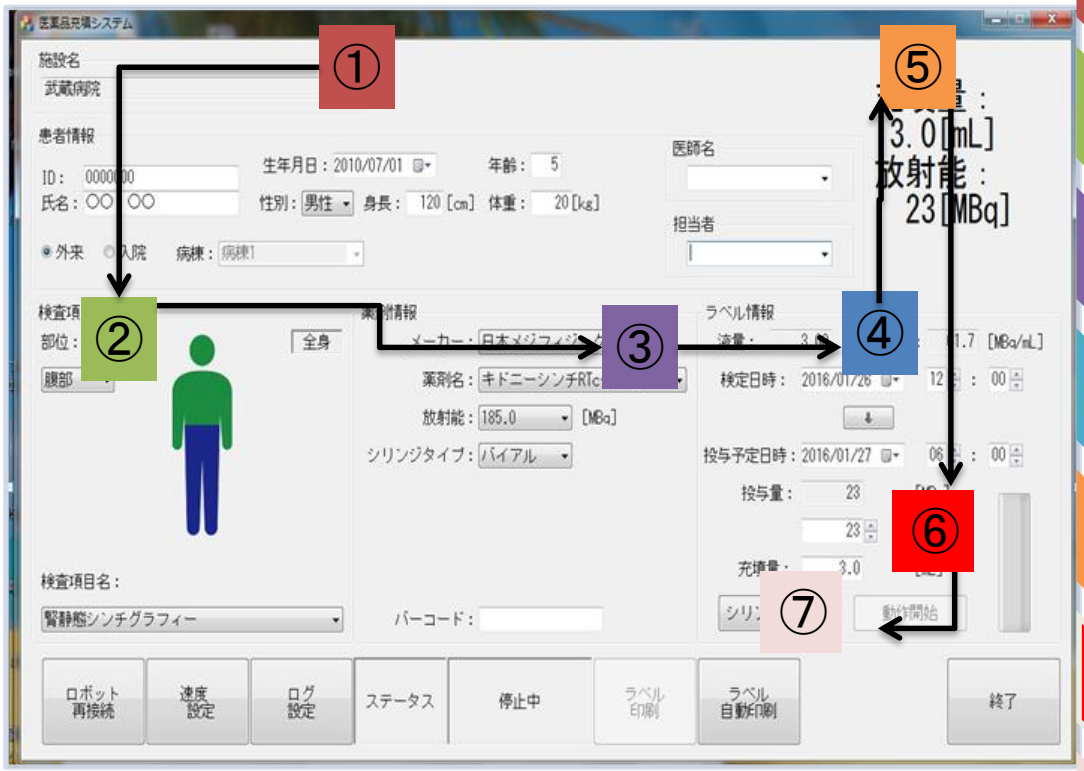


Figure.3 Comparison of the filled volume at dispenser and calculated volume with PC

Results



① • Patient information (name・ID・birthdate・height・weight)

② • Test item(examine area etc.)

③ • Radiopharmaceutical information (code・dose etc.)

④ • Auto calculate dose(assay date)

⑤ • Decision of dose (date of administration etc.)

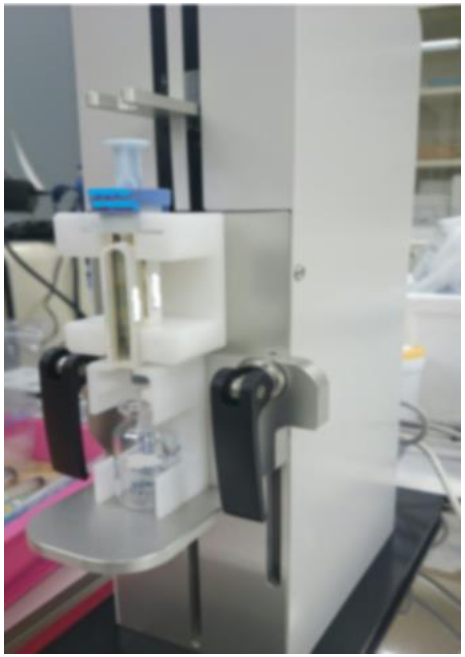
⑥ • Start plunger

⑦ • Print label
• Save data

Figure.4 Interface on PC for inputting the patient information and the substance of examination

Results

The automatic adjustment system was developed



- **This system is easy for control dose properly.**
- **The calculation results print to prevent human failure.**
- **The performance of system practically can be satisfied.**
- **Text data of information are saved on PC and that can be effectively used for QA.**

Conclusions

- **Providing an adjustment system with simple equipment and high cost performance was developed.**

- **By handing over and recording data on HIS or RIS, this system makes it possible to profit by information effectively.**