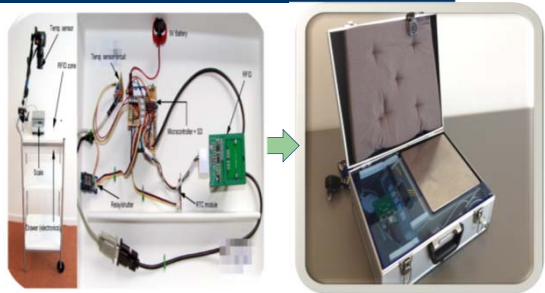


Assessing Dietary Intake Among Hospital Patients Using the Dietary Intake Monitoring System (DIMS) to Collect Data from the Food4Front Stage intervention

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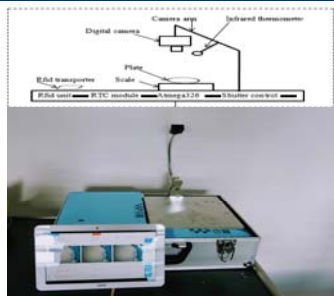
DIMS Prototype 1.0 & 2.0



Background

- The DIMS was developed in the "technology track" of the FoodServInSPIRe project.
- ICT enhanced device to overcome the drawbacks of the traditional methods of dietary assessment in hospital.
- The DIMS 2.0. was used to investigate the impact of a new patient meal serving system on food intake and waste.

DIMS 2.0 set-up

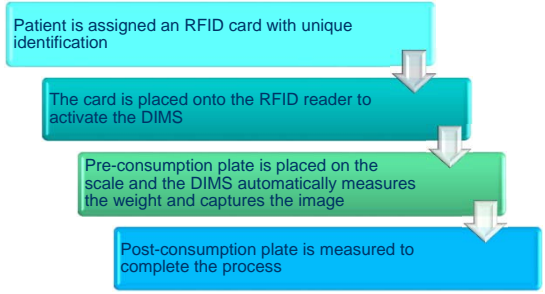


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Methods

- Study setting
 - Medical & surgical wards.
 - 8 weekdays in the pre & post intervention phase
- Intervention
 - Pre : Service Assistant & Post: Meal Host
- DIMS 2.0
 - Collect 74 paired before and after photos & weight of plate
- Ethical consideration
 - Patients gave oral consent

Procedure for Measuring Pre-post Plate Content



```

    graph TD
      A[Patient is assigned an RFID card with unique identification] --> B[The card is placed onto the RFID reader to activate the DIMS]
      B --> C[Pre-consumption plate is placed on the scale and the DIMS automatically measures the weight and captures the image]
      C --> D[Post-consumption plate is measured to complete the process]
    
```

Real-Time Data Capturing

Interactive Interface- User input

Application: co-creational mode

- User inputs can be added
- improve accuracy portion size estimation

Real-Time Analysis Using DIMS Apps

How ?

- View Cases
- Interactive User input
- Plate waste analysis
- Nutrients analysis

Plate Waste Analysis

Results: Difference in Mean Food Intake and Plate Waste

Staff involved in meal service	n	Food intake g (SD)	Plate waste g (SD)
Service Assistant	36	244.0 ±118.2	64 (± 58)
Meal Host	38	271.8 ± 106.4	71 (± 62)

View Cases

Identification	P weight	Pre weight	Post weight	Time Span	Pre date	Post date	ID
43517977	708	736	58	08:15:05	2016-04-20 12:25:02	2016-04-20 12:29:15	3455

Pre picture

Post picture

Nutrient Intake Analysis

- Reference weight /portion size of food item served
- Visual technique to estimate portion size
- Validate visual estimated total weight = DIMS total weight
- Adjust for under or over estimation
- Automatic conversion of portion size into nutrients

Validation of DIMS Method

- Weighed vrs DIMS method

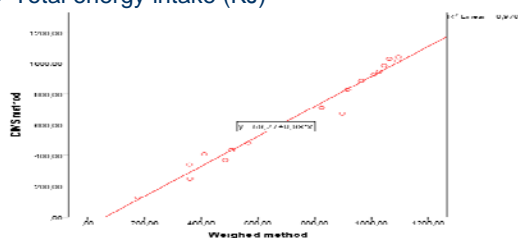
Lunch	Weighed method Mean (SD)	DIMS method Mean (SD)	P value
Energy(kJ)	752.3±313.7	674.4±309.7	0.4
Protein (g)	7.3 ± 3.2	8.0 ± 3.9	0.5

Conclusions

- DIMS 2.0 facilitates a real-time monitoring of patients dietary intake and plate waste.
- Allows an investigator to have a quick and accurate overview of a patient with inadequate food intake.
- Relying on Meal host prior knowledge in nutritional care did not have impact of patient food intake and plate.

Pearson Correlation Between Weighed and DIMS Method

- Total energy intake (KJ)



Thank You!!!!

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Pearson Correlation Between Weighed and DIMS Method

- Total protein intake (g)

