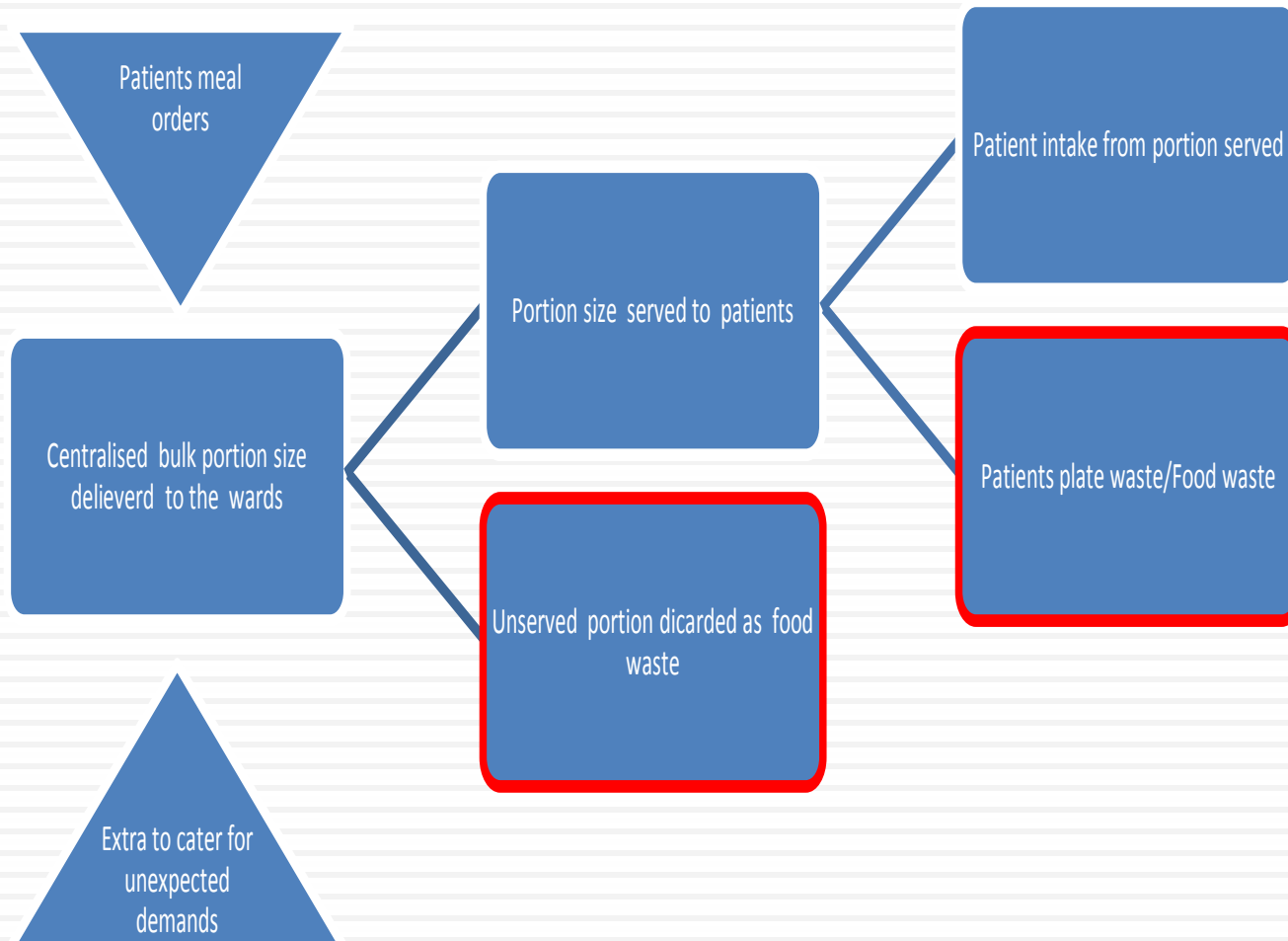


# **Intelligent monitoring of Plate Waste and Food intake**

*Application of DIMS at  
Aalborg University Hospital.*

**Kwabena Titi Ofei**  
PhD fellow, MPH, MSc

# Trolley food serving and food waste generation on wards



# Why the need for intelligent monitoring of Food waste/intake in the hospital setting?

3

Up to 50%  
Food is  
wasted



25 % of  
patients are  
malnourished

# Application of DIMS

4

## Objective:

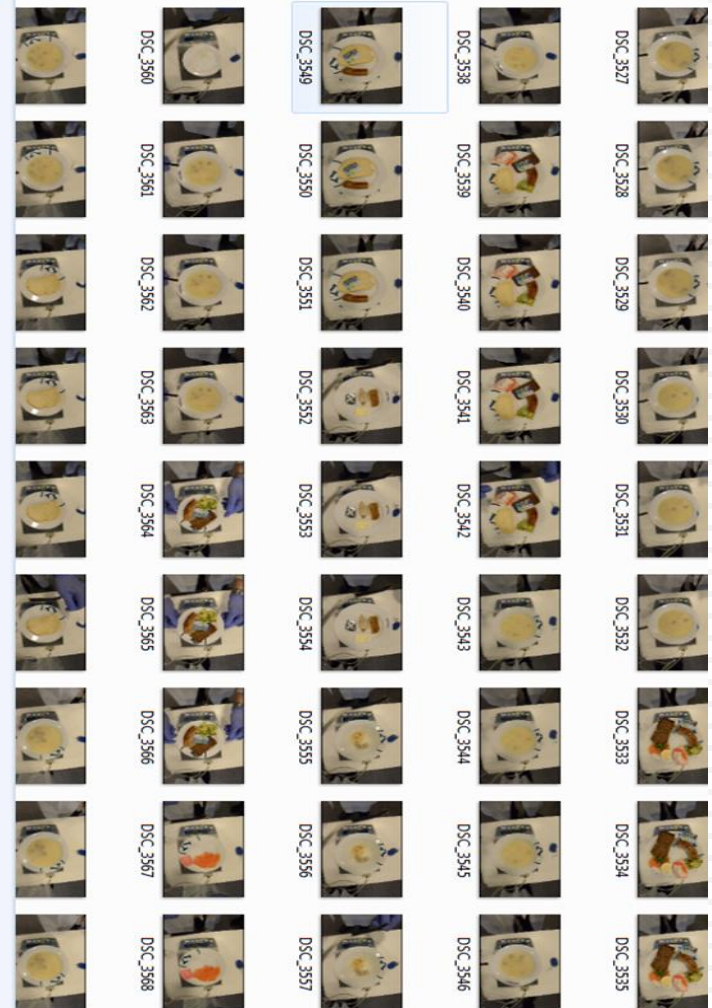
To monitor and determine patients' plate waste and food intake from the trolley meal service

- Are patients served with standard portions?
- What food items do patients select from trolley?
- What portions do patients consume ?
- What portions do patients leave as plate waste ?

# Stored Data from DIMS

5

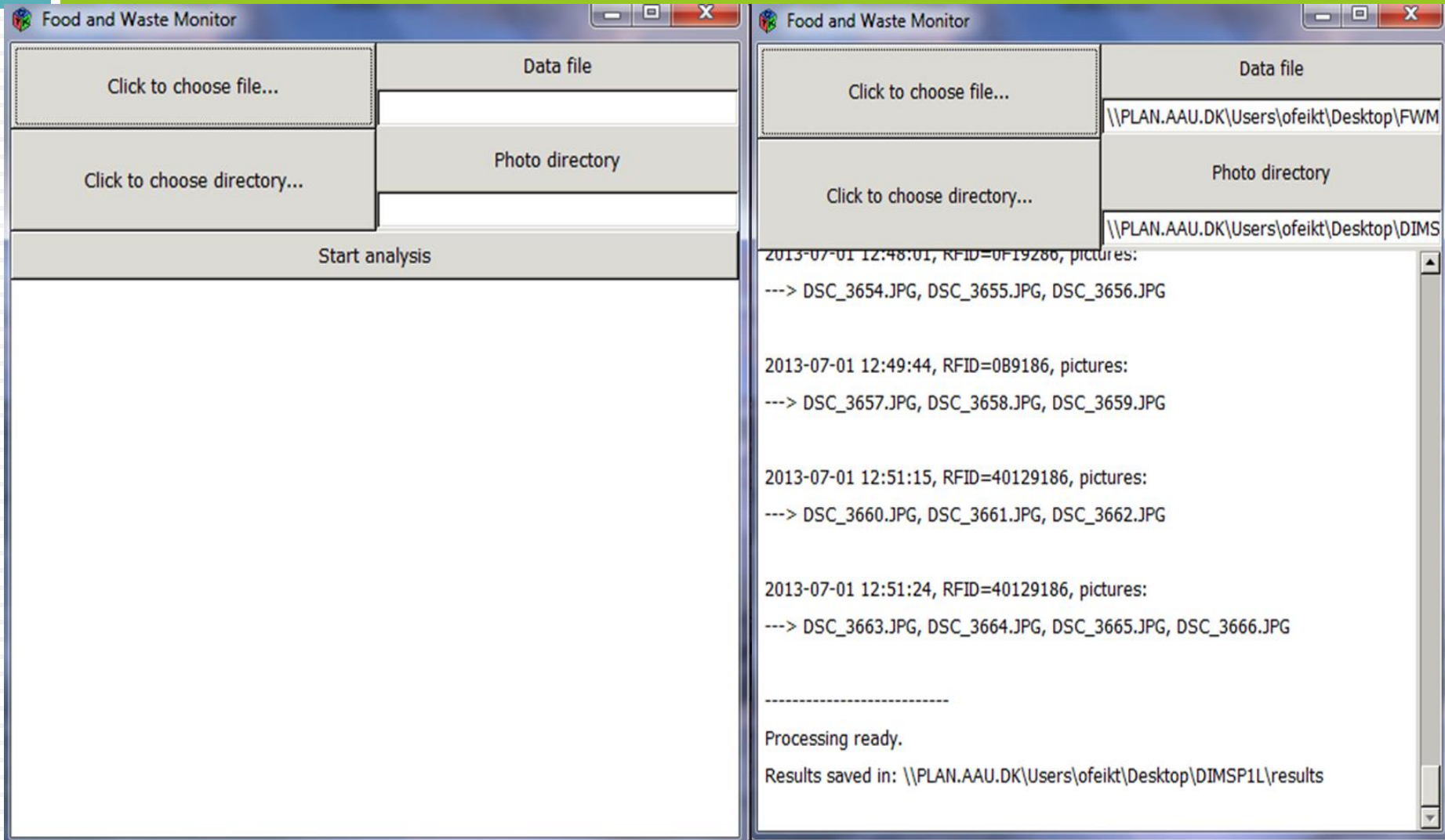
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N2013-07-01	10:49:39	423	E04A9386	N	26
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N2013-07-01	12:10:13	563	N0569386	N	14
N2013-07-01	12:10:48	458	U0B39286	N	48
N2013-07-01	12:11:03	522	U0B39286	N	52
N2013-07-01	12:11:37	472	30549386	N	98
N2013-07-01	12:11:59	515	30549386	N	74
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N2013-07-01	12:13:35	303	80B69286	N	42
N2013-07-01	12:13:44	483	80B69286	N	96
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N2013-07-01	12:15:32	391	40489286	N	82
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N2013-07-01	12:31:14	711	A02E9386	N	90
N2013-07-01	12:31:29	293	40FA9286	N	26
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N2013-07-01	12:47:20	305	704D9286	N	92













































# Plate Waste and Food Intake Analyser

6



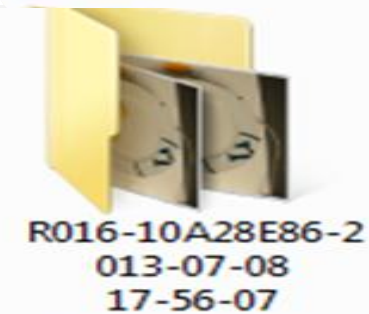
# Output from Plate Waste and Food Intake Analyser

7

 R001-E04A9386-2013-07-01 10-48-06 File folder	 R002-E04A9386-2013-07-01 10-48-28 File folder	 R003-E04A9386-2013-07-01 10-49-39 File folder	 R004-E04A9386-2013-07-01 10-50-01 File folder
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 R037-40FA9286-2013-07-01	 R038-40FA9286-2013-07-01	 R039-C0B39286-2013-07-01	 R040-C0B39286-2013-07-01

# Patient Plate Waste and Food Intake from Trolley Food Serving

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Patient ID	Weight Before/g	Weight After/g	Food Intake/g	Plate waste/g
50479286	638 -413= (225)	532-413= (119)	106	119 (52.89)
10A28E86	502-413 = (89)	413-413=(0)	89	0



# Sample Results

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<b>Standard portion of menu items from the Trolley Meal Servings</b>		
<b>Food item</b>	<b>Standard Portion per patient/g</b>	<b>Standard Portion per patient/g</b>
<b>Svinekam</b>	<b>80</b>	<b>80</b>
<b>Kartoffel</b>		<b>100</b>
<b>Kartoffel mos</b>	<b>150</b>	
<b>Gronsagssauce</b>	<b>150</b>	<b>150</b>
<b>Total</b>	<b>380</b>	<b>330</b>

<b>Patient food intake and plate waste analysis</b>								
<b>Patient ID</b>	<b>Age</b>	<b>Sex</b>	<b>BMI</b>	<b>NRS</b>	<b>Standard portion/g</b>	<b>Preferred portion/g</b>	<b>Intake/g</b>	<b>Plate waste/g</b>
<b>50479286</b>	<b>41</b>	<b>M</b>	<b>22.6</b>		<b>380</b>	<b>225 (59%)</b>	<b>106 (47%)</b>	<b>119(53%)</b>
<b>10A28E86</b>	<b>68</b>	<b>F</b>	<b>28.6</b>		<b>330</b>	<b>89 (27%)</b>	<b>89 (100%)</b>	<b>0 (0%)</b>

# Additional Opportunities and further Development

10

- Strengthen the capabilities of staff to conduct routine monitoring and use the feedback to improve services
- Provide accurate data, less time consuming and easy to use.
- Enhance forecasting of meal demands and minimise waste
- Real-time dietary assessment.

# Thanks for your attention!!!

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