Incorporating Tray Waste Evaluation into Your Smarter Lunchroom

Erin Sharp, MS, MAT, and Adam Brumberg,
Smarter Lunchrooms National Office, Cornell University

Welcome, thank you for joining!

Please type any questions you have using the Q&A feature and Erin and Adam will address them at the end of each section.

If you are interested in joining the Healthy Food Choices in Schools Community of Practice or have any questions, please contact us at: healthy_food_choices_in_schools@cornell.edu
incorporating tray waste evaluation into your smarter lunchroom

Adam Brumberg and Erin Sharp, MS, MAT
Smarter Lunchrooms Movement National Office
Wednesday, November 15, 2017
Why use data?

- To know what works and what doesn’t
- To prove success
- To earn positive press
- To replicate
- To earn outside funding

Data Drives Decisions
Data sources in a lunchroom

All schools
- Pre and post scorecard
- Before and after photos

Schools with TAPs
- 3 main types of data
  - Production records
  - Sales records
  - Tray waste records
Plate waste records

- Easy
- Clean
- Accurate
- Measures consumption
- Measure all items or just target foods
  - Ex: fruit, vegetables, new entrée, milk

NUDGING CHILDREN TO EAT HEALTHIER
SMARTERLUNCHROOMS.ORG
Plate waste records

Contents
- Amount wasted > amounts consumed
- Individual items

Collection methods
- Paper based
  - Visual estimation
- Electronic
  - Photographs, enter later

<table>
<thead>
<tr>
<th>Food Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tray Waste Data
Each numbered column signifies one tray. Indicate in the corresponding row how much of each food item remains: 0 for none wasted, 1 for 1/4 wasted, 2 for 1/2 wasted, 3 for 3/4 Wasted, 4 for all wasted.

If the student did not select the item being measured leave the corresponding cell empty.

 NUDDING CHILDREN TO EAT HEALTHIER
 SMARTERLUNCHROOMS.ORG
Plate Waste Records

Benefits

🔹 Allows you to identify what was actually eaten!
🔹 Most efficient way to track consumption
🔹 Useful for identifying patterns
🔹 Nutrition estimates can be derived

Concerns

🔹 Choose data collection days carefully (similar foods before/after)
🔹 Demands careful attention to detail
🔹 Work with school’s schedule and spatial layout
🔹 May need to recruit people to help collect the data

Nudging Children to Eat Healthier
SmarterLunchrooms.org
Quarter Waste Method

- On-site visual estimation
- Quick, precise, economical ➔ efficient!
- Takes less than 1/5 the time of weighing food
- 90% accurate compared to weighing
Quarter Waste Method
how to do it

▶ Match menu items on pre and post days as closely as possible
▶ Gather menu information prior to lunch
▶ Set up tray collection table
▶ Weigh each available food item 3x
  ◀ See full serving and how food is served
▶ Bring gloves
▶ Collect information on a minimum of 20% of trays
  ◀ Representative sample
  ◀ Exact number will depend on setup, # of students, time, and lunch routine

NUDGING CHILDREN TO EAT HEALTHIER
SMARTERLUNCHROOMS.ORG
Quarter Waste Method

how to

- Enter 0 when none was wasted
- Enter 1 when $\frac{1}{4}$ was wasted
- Enter 2 when $\frac{1}{2}$ was wasted
- Enter 3 when $\frac{3}{4}$ was wasted
- Enter 4 when all was wasted
## Tray Waste Data

Each numbered column signifies one tray. Indicate in the corresponding row how much of each food item remains: 0 for none wasted
1 for 1/4 wasted
2 for 1/2 wasted
3 for 3/4 Wasted
4 for all wasted

If the student did not select the item being measured leave the corresponding cell empty.

<table>
<thead>
<tr>
<th>Food Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taco Salad</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rice</td>
<td>2</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pizza</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salad (entrée)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deli Sandwich (any)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yogurt Parfait</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheese Stick</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chocolate Milk</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1% White Milk</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skim White Milk</td>
<td></td>
<td></td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100% fruit juice</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canned Peaches</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apples</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raisins</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ice Cream</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretzel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
# Tray Waste Data

Each numbered column signifies one tray. Indicate in the corresponding row how much of each food item remains: 0 for none wasted, 1 for 1/4 wasted, 2 for 1/2 wasted, 3 for 3/4 wasted, 4 for all wasted. If the student did not select the item being measured leave the corresponding cell empty.

<table>
<thead>
<tr>
<th>Food Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Things to note

- When none of an item is wasted, you must use visual clues on the tray to determine what the student took, if anything.
- When estimating waste, think of the amount wasted relative to the full serving side and round up or down, depending on your judgement.
Examples of clues

Clues are helpful for figuring out what items were taken when they are completely consumed:

- Plastic wrap from sandwiches
- Foil wrap from hot sandwiches
- Ketchup (hamburger, chicken patty)
- Mayonnaise (sandwich)
- Bakery sheets (cookies, baked goods)
Example 1

Servings taken:
- Bowl of tomato soup
- Cheese sandwich
- Carton of juice
- Carton of milk
Example 1

Servings taken:
- Bowl of tomato soup
- Cheese sandwich
- Carton of juice
- Carton of milk

Servings wasted:
- 1 (25% wasted)
- 1 (25% wasted)
- 0 (0% wasted)
- 1 (25% wasted)
Example 2

Servings taken:
- Bowl of tomato soup
- Cheese sandwich
- Carton of juice
- Carton of flavored milk
- Pack of fun fruits
Example 2

Servings taken:
- Bowl of tomato soup
- Cheese sandwich
- Carton of juice
- Carton of flavored milk
- Pack of fun fruit

Servings wasted:
- 0 (0% wasted)
- 0 (0% wasted)
- 4 (100% wasted)
- 0 (0% wasted)
- 1 (25% wasted)

NUDGING CHILDREN TO EAT HEALTHIER
SMARTELUNCHROOMS.ORG
Example 3

Servings taken:
- Tuna sandwich
- Pickle/veg
- Wheatberry salad
- Carton of white milk (verbal confirmation)
- Blueberries
Example 3

Servings taken:
- Tuna sandwich
- Pickle/veg
- Wheatberry salad
- Carton of white milk (verbal confirmation)
- Blueberries

Servings wasted:
- 2 (50% wasted)
- 2 (50% wasted)
- 1 (25% wasted)
- 0 (0% wasted)
- 0 (0% wasted)
“What are you doing?”

Students will naturally be curious about what you are up to.

Announcing at the beginning of lunch period helps to reduce confusion and questions.

Brief and simple responses:

- “I’m doing a survey.”
- “I’m looking at the garbage.”
- “I want to find out what kids like.”
- “I’m collecting information on the cafeteria.”

NUDGING CHILDREN TO EAT HEALTHIER
SMARTERLUNCHROOMS.ORG
Collaborating with Stakeholders

- **Training**
  - Refer to Smarter Lunchrooms tray waste resources on the following slide

- **Practice day**
  - First day will likely be no good – plan on a practice day before the main event (practice run can be short, only 10-15 min)

- **Stakeholders**
  - Who: teachers/students, PTA, college interns/researchers
  - How to utilize help
  - Recruitment
  - Permissions, including IRB approval (if necessary)

**NUDGING CHILDREN TO EAT HEALTHIER**
SMARTERLUNCHROOMS.ORG
Further resources

Complete instructions, examples, and forms

www.smarterlunchrooms.org/scorecard-tools/measuring-consumption-smarter-lunchroom-tray-waste

Online video series on YouTube:

Search for “Plate Waste & Data Collection: Smarter Lunchrooms Movement”
Other data sources

- Production records
- Sales records
Production records overview

Contents

- Daily data
- Total servings prepared and served
  - Individual item data
- Total reimbursable meals served

Formats

- Paper based ➔ enter into spreadsheet
- Electronic
Production records

Benefits

- Already available in most cases
- Lots of background data to compare to
- Aggregate evidence of servings taken daily
- Participation rates

Concerns

- Difficult to identify measurement units
  - Not all production records are equal
  - Only as exact as the record-keeping
- Need to standardize procedure for accuracy
- May be unable to separate foods by lunch period
**Sales records overview**

- Contents: the more specific, the better the picture
  - Daily data
  - Individual level sales, identified by student
  - Individual specific characteristics
    - Free, reduced, or full priced meal, grade
  - Specific sales such as a la carte or featured items

- Formats
  - Paper based ➔ *enter into spreadsheets*
  - Electronic – usually collected at POS
sales records

benefits

- Excellent for estimating participation
- Student-characteristic analysis
- Excellent for analyzing selection of a la carte items
- More specific than production records

concerns

- No consumption measures
- May need to add buttons to identify NSLP meal items
- Hardware and software differ across schools

nuudging children to eat healthier
smarterlunchrooms.org
Final thoughts

- Consider what data will be collected before making any changes
- Practice and review records
- Always collect pre- and post- data
- Be prepared for “wacky” days
Questions? Comments?

Smarter Lunchrooms Facebook Page
Lunchroom Buzz Facebook Group
@SmartLunchrooms
smarterlunchrooms.org
Smarterlunchrooms@cornell.edu

Thank you and keep up the hard work!