



WORKBOOK

Managing Costs in OAA Nutrition Programs

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Webinar Workbook

Webinar presented for the State of Colorado
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Exercise 1: Forecasting

Many times programs forecast the number of meals that should be prepared for either or both their home delivered and congregate meal programs on the basis of what they remember to be the number of meals prepared before or on the "intuition" of the program's food production personnel. Cost management effectiveness can be improved if the amount of food purchases and prepared closely matches the amount served. Adopting a basic forecasting method, such as the moving average, may help programs improve their forecasting accuracy. The use of a computer is necessary for doing forecasting calculations quickly.

To calculate a moving average, keep a log of the actual number of meals served, by type of meal (congregate or home delivered), day of the week the meal is served, anything unusual about the day - weather, holiday, etc., and the entree item served. Decide how many past days you want to include in your moving average. Then calculate the number of meals served for those days and divide that by the number of days to get the average number of meals to consider in your forecast. Adjust that number by factors, such as a forecasted blizzard or a holiday or some other factor that might impact whether people come for or need a meal or not. When that forecasted meal has been served, for the next forecast, drop out the oldest number included in the average calculation and replace it with the new number of meals - and calculate the average for the next forecast.

Moving averages can be calculated for a day of the week, if you have variance in attendee numbers on different days of the week. They could also be calculated for holiday days or for certain menu entrees.

For example, given the March calendar included here, the forecast for Friday, April 6 might be calculated as: $(100 + 125 + 65 + 55 + 130) / 5 = \underline{95}$ - for congregate meals and $(75 + 80 + 78 + 85 + 80) / 5 = \underline{80}$ for home delivered meals.

However, that is likely not to be a good forecast for April 6 as two "bad", or skewed numbers are included in the average. The low attendance on the 16th might reflect the St. Patrick's Day holiday the next day as people may be doing something with their families that weekend. The low attendance on the 23rd is almost certainly to be a result of the snow storm that day and people being unwilling to come to the center. So, skewed numbers such as those should be eliminated, and the forecast for congregate meals for April 6 would be better calculated as: $(100 + 125 + 130) / 3 = \underline{118}$. Since there are no "bad", or skewed numbers for the home delivered meals, that forecast would remain at 80 meals.

Assuming that meatloaf would be the menu entree on April 6, you might want to check the forecast of 118 congregate meals by calculating the moving average for the days that meatloaf is served. That average would be calculated as: $(100 + 75 + 140) = \mathbf{105}$. The moving average for home delivered meals would be calculated as: $(75 + 78 + 80) / 3 = 78$. Here, too, the Tuesday number (March 13) is an "outlier" for congregate meals compared to other meatloaf days. The home delivered meal numbers, though, are relatively constant. Maybe Tuesdays always have low numbers for congregate meals. In that case, you would always want to forecast for a Tuesday using only Tuesday figures, or maybe it rained heavily that day, and people did not want to come out to the center. If Tuesdays are always low numbers or there was bad weather on the 13th, then that number should be eliminated and the meatloaf moving average should be recalculated as: $(100 + 140) / 2 = \mathbf{120}$. The forecast for home delivered meals would not change. This number would be close to the forecast number of 118 congregate meals calculated using the Friday numbers. So, it seems likely that a good congregate meal forecast for April 6 would be 120 meals. The 120 congregate meals plus the forecasted 80 home delivered meals would mean that the **total forecast for the meatloaf meal on April 6 would be for 200 meals.**

Problem:

Assume that the number of congregate meals served on April 6 was 115 and the number of home delivered meals served was 82, what would the forecast be for both congregate and home delivered meals be for April 13?

The weather was warm and sunny on April 6th, and there were no known factors (holidays, local events, etc.) that might have influenced attendance on April 6th.



MARCH 2012

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	2 100 Cong. 75 Home D. Meatloaf	3
4	5	6	7	8	9 125 Cong. 80 Home D. Baked Chicken	10
11	12	13 75 Cong. 78 Home D. Meatloaf	14	15	16 65 Cong. 78 Home D. Baked Fish	17 St. Patrick's Day
18	19	20	21	22	23 55 Cong. 85 Home D. Snow Storm Chicken & Dumplings	24
25	26 140 Cong. 80 Home D. Beautiful Day - Sun Meatloaf	27	28	29	30 130 Cong. 80 Home D. Beef Pot Roast	31

Exercise 2: Calculating Cost - Usable Yield

Problem 1:

A case of iceberg lettuce = 25 lbs AP*.
The trim & waste = 5 lbs.
The amount of usable lettuce = 20 lbs.
2 oz. of trimmed lettuce is used in a salad.
The AP cost/case = \$30.00

Note: AP costs means As Purchased*

*Note**: EP costs means Edible Portion*

Calculate:

- The % yield
- The cost per pound of trimmed lettuce
- The portion cost for the 2 ounces of lettuce in the salad

Problem 2:

A #10 Can of cream corn = 7 lbs & has an AP cost of \$5.00.
Cream corn is 100% usable from the can, but there is some production loss during heating and portioning – about 3%.

Calculate:

- The EP** cost per can
- The EP cost per ounce
- The portion cost of a 3 ounce portion

Problem 3:

A 25lb bag of dry rice costs \$20.00 AP, or 1 lb costs \$0.80 AP.
Rice absorbs water in a 2:1 ratio when cooked.

Calculate:

- The yield percent
- The EP cost of 1 pound of cook rice
- The portion cost of a 3 ounce serving of cooked rice

Problem 4:

Ground beef A costs \$2.95/lb AP – cooked yield = 85%
Ground beef B cost \$2.65/lb AP – cooked yield = 76%
Ground beef C cost \$3.10/lb AP – cooked yield = 94%

Calculate:

- The EP cost per pound for each of the 3 ground beef alternatives
- Determine which of the 3 products you should purchase, based on the EP costs per pound

Exercise 3: Product Specifications

Using the sample product specification form, write a specification for a product such as canned green beans or fresh tomatoes. Briefly discuss specifications written.

Product Name: _____

Quality: _____

Style/Variety: _____

Packing Medium: _____

Count Size: _____

Condition: _____

Description: _____

NOTE: There is no one right answer for this exercise. Each program would determine what products should be used in that program and what would be appropriate specifications for those products, given the programs goals and constraints.

Standardized Cost Sheet Data For Use in Exercises 4 & 5

Description	Congregate Meals	Home Delivered Meals	Total for Programs	Management Costs/% of category as mgmt costs
Total Number of Meals Served	346,017	212,665	558,682	
Total Annual Revenue	\$2,375,021	\$1,356,878	\$3,731,899	
Total Annual Food Cost	\$979,170.80	\$445,187.20	\$1,424,358.00	\$0.00
Food Cost Percent as a Percent of Total Revenue for Each Meal Type and Program Total	41%	33.8%	38%	
Proportion of Total Food Cost Allocated to Each Program	69%	31%	N/A	
Total Annual Labor Cost	\$1,021,338.05	\$613,415.91	\$1,634,753.96	\$302,912/18.5%.
Labor Cost Percent as a Percent of Total Revenue for Each Meal Type and Program Total	43%	45.2%	43.8%	18.5%
Proportion of Total Labor Cost Allocated to Each Program	62%	38%	N/A	
Other Costs:				
Annual Supplies	\$73,882.70	\$85,339.14	\$159,221.84	\$23,746/14.9%
Proportion of Total Supplies Allocated to Each Program	46%	54%	N/A	0.6% of total revenue
Annual Transportation	\$110,035.05	\$12,606.95	\$122,642.	\$0.00
Proportion of Total Transportation Allocated to Each Program	90%	10%	N/A	
Annual Travel	\$25,548.55	\$43,895.45	\$69,444	\$69,444/100%
Proportion of Travel Allocated to Each Program	37%	63%	N/A	1.9% of total revenue
Annual Equipment	\$21,850.80	\$11,219.20	\$33,070	\$0.00
Proportion of Equipment Allocated to Each Program	66%	34%	N/A	
Annual Building Costs and Utilities	\$43,188.10	\$73,835.90	\$117,024.	\$117,024./100%
Proportion of Building Costs and Utilities Allocated to Each Program	37%	63%	N/A	3.1% of total revenue
Annual Communications	\$54,208.15	\$12,376.85	\$66,585.	\$66,585/100%
Proportion of Communications Allocated to Each Program	81%	19%	N/A	1.8% of total revenue
Annual Operating Costs	\$29,530.	\$40,035.	\$69,565.	\$69,565/100%
Proportion of Operating Costs Allocated to Each Program	42%	58%	N/A	1.9%
Annual Conferences and Meetings	\$634.80	\$766.40	\$1,401.20	\$1,401.20/100%
Proportion of Conference and Meetings Allocated to Each Program	45%	55%	N/A	0.048 % of total revenue
Annual Volunteer Recognition	\$15,634.	\$18,200.	\$33,834.	\$33,834/100%
Proportion of Volunteer Recognition Allocated to Each Program	46%	54%	N/A	0.91% of total revenue

Exercise 6: Labor Cost Identification and Allocation

Consider the different categories of labor costs listed here. Discuss which ones should be considered fixed costs that should be allocated among all the programs and which ones should be considered to be variable costs charged 100% to a program.

Labor Cost Categories to Consider:

Hourly Wages for:

- Cooks
- Kitchen Aides/Staff
- Other Kitchen Workers
- Meal Drivers
- Passenger Drivers
- Contract/Temporary Workers
- Janitors/Cleaning Staff
- Clerical Staff
- Bookkeepers
- Other Support Staff

Salaries for:

- Food Service Supervisor/Director
- Outreach Workers
- Program Coordinators
- Registered Dietitian
- Nutrition Program Director
- Site Managers
- Center Directors

Fringe Benefits for Eligible Personnel

Professional Fees for Eligible Personnel

Volunteer Stipends

Exercise 7: Calculation of Actual Monthly Food Costs

Use the data listed below to calculate the actual monthly food cost for this program.

Remember, the formula for calculating the actual meal cost is:

$$\begin{aligned} & \text{Opening Inventory at the Beginning of the Month} \\ + & \text{ Purchases During the Month} \\ - & \text{ Ending Inventory at the End of the Month} \\ = & \text{ Cost of Food Consumed the Month} \\ - & \text{ Adjustments (Food provided to volunteers, used for other programs, etc. -- food usage} \\ & \text{that must be charged to other accounts than program meal costs)} \\ = & \text{ Actual Food Costs for the Month} \end{aligned}$$

Food Cost Data:

Opening Inventory:	\$ 5,435.
Closing Inventory:	\$ 4,650
Dry Store Purchases:	\$11,780
Perishable Food Purchases:	\$ 9,225
Paper Supplies:	\$ 3,565
Value of Meals Served to Volunteers	\$ 1,800
Value of Food Served at Board Meeting	\$ 425

Exercise 8: Calculation of Actual (Total) Meal Costs

Standardized Cost Sheet Data For Use in Exercise 8

Description (Average Monthly Cost for Budget Items)	Congregate Meals	Home Delivered Meals	Total for Center
Total number of meals served	28,835	17,722	46,557
Total Revenue	\$197,918	\$113,074	\$310,992
Total Food Cost	\$81,598	\$37,099	\$118,697
Total Labor Cost	\$85,112	\$51,118	\$136,230
Food Service Labor Costs	\$41,719	\$27,808	\$69,527
Professional Labor Costs	\$30,507	\$17,343	\$47,850
Center Management Labor Costs	\$12,886	\$5,967	\$18,853
Other Costs:			
Annual Supplies	\$6,157	\$7,112	\$13,269
Kitchen Related Supplies	\$4,860	\$6,430	\$11,290
Office Supplies	\$879	\$306	\$1,185
Printing and Publications	\$322	\$125	\$447
Books, Subscriptions, & Education Supplies	\$95	\$251	\$346
Annual Transportation	\$9,169	\$1,052	\$10,221
Meal Van Expenses	\$1,367	\$947	\$2,314
Passenger Van Expenses	\$75	\$42	\$117
Meal Transportation Contract	\$7,727	\$63	\$7,790
Annual Travel	\$2,129	\$3,658	\$5,787
Staff Mileage Reimbursement	\$1,172	\$1,119	\$2,291
Volunteer Mileage Reimbursement	\$957	\$2,539	\$3,496
Annual Equipment	\$1,821	\$935	\$2,756
Capital Equipment Purchases	\$528	\$201	\$729
Repairs and Maintenance	\$753	\$339	\$1,092
Other Equipment Expense	\$540	\$396	\$936
Annual Building Costs and Utilities	\$3,599	\$6,153	\$9,752.
Rental/Lease Expense	\$845	\$983	\$1,828
Depreciation	0	\$2,065	\$2,065
Utilities	\$2,281	\$2,549	\$4,830
Pest Control and Maintenance	\$201	\$212	\$413
Annual Communications	\$4,517	\$1,032	\$5,549.
Annual Operating Costs	\$2,461	\$3,336	\$5,797.
Insurance	\$819	\$607	\$1,426
Accounting and Audit Costs	\$801	\$373	\$1,174
Indirect and Other Costs	\$842	\$2,356	\$3,198
Annual Conference & Meetings	\$53	\$64	\$117
Annual Volunteer Recognition	\$1,303.	\$1,517	\$2,820

Given the data in the table above, on page 11, calculate the following:

- A. The actual (total) meal cost for the Congregate Meals Program
- B. The actual (total) meal cost for the Home Delivered Meals Program