



Insight

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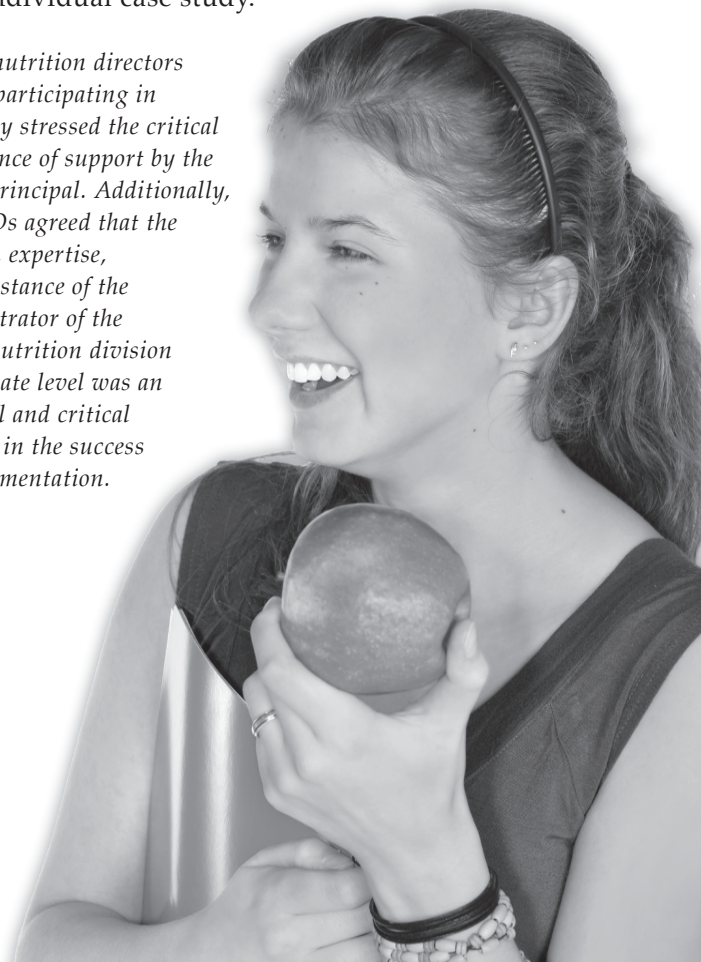
Vended Reimbursable Lunches- A New Option for Serving High School Students

O In today's environment, school nutrition professionals are constantly exploring new options to better meet diverse feeding needs through school nutrition programs (SNPs). Eating patterns during adolescence can influence long-term nutritional status and have a significant impact on the risk for developing chronic diseases of adulthood. Schools play an important role in providing healthful meals to children and teaching them lifelong healthy habits.

V Due to financial considerations and the demand from students for more variety and food choices, school districts are challenged to offer a wider range of appealing and nutritious meal choices in creative ways. In most secondary schools, the amount of time to eat lunch is a major factor in the student's meal choice. To address the issues of time and available healthy food options, some school districts are considering offering healthful vended reimbursable lunches. While non-reimbursable vended food items have been placed under the microscope in more recent times, the concept of a vended reimbursable meal is relatively new and being implemented following National School Lunch Program guidelines, serving healthful options. Research by Samuels and Associates suggests that addressing food and beverage marketing on school campuses is a key component to creating healthy school environments. The Institute of Medicine recommended engaging marketing vehicles and venues to develop and promote healthier, appealing, and affordable foods and beverages for school age children. Vended reimbursable lunch is a possible option to address these concerns.

(NFSMI), Applied Research Division, conducted a study to determine barriers to vending a reimbursable lunch to high school students. The study included direct observation, systematic interviews, and review of school nutrition program records related to the vended reimbursable lunch. Two school districts (identified as A and B) pilot testing a vended reimbursable lunch agreed to participate in the study. Prior to a site visit, each participant was mailed a questionnaire to collect demographic information about the school district and the vended reimbursable lunch. On-site data collection occurred during a one-day site visit in each participating school district. Data were organized, tabulated, and cross checked from each individual case study.

School nutrition directors (SND) participating in the study stressed the critical importance of support by the school principal. Additionally, the SNDs agreed that the interest, expertise, and assistance of the administrator of the school nutrition division at the state level was an essential and critical element in the success of implementation.



Using case study research methodology, the National Food Service Management Institute

Two vending machines in a school in each participating district successfully vended reimbursable lunches to high school students. Three considerations were critical to this outcome - regulations, technology, and support. The ability to integrate point-of-sale software, cashless and vending machine technology, and school district electronic record keeping applications was the key element in implementing electronic compliance with United States Department of Agriculture (USDA) National School Lunch Program (NSLP) regulations. This interface of technology with regulations facilitated the following: identification of legitimate reimbursable lunches, accurate provision of free and reduced price meals to eligible students, correct charges for full- pay meals, second meals and à la carte items, and maintenance of confidentiality of meal eligibility category.

Both school nutrition directors (SND) stressed the critical importance of support by the school principal. Additionally, the SNDs agreed that the interest, expertise, and assistance of the administrator of the school nutrition division at the state level was an essential and critical element in the success of implementation.

Adherence to all NSLP regulations must be demonstrated before the vended reimbursable lunch can be approved as a legitimate reimbursable menu option. The vending machine software must be integrated with point-of-sale software and the school district data base to accurately recognize reimbursable lunches and consistently vend reimbursable lunches to students who are eligible for free or reduced price meals. All others must be charged full price or à la carte for the food items. Second meals must be recognized as such and students charged accordingly. The technology must be capable of recognizing students by two dependable methods - identifying meal benefit eligibility category, and providing the Offer versus Serve option.

OBJECTIVES

Two major objectives guided this research. Each was considered equally important to contributing knowledge about implementing a vended reimbursable school lunch to high school students.

- To investigate the operational requirements for offering vending reimbursable lunches to students, AND
- To identify barriers to implementing a vended reimbursable lunch to students.

INTERVIEW TOPIC ISSUES

- Control (Menu / POS)
- Input (Resources for Implementation)
- Procurement (Special Specs / Storage)
- Preparation
- Marketing
- Equipment and Maintenance
- Distribution and Service
- Sanitation and Maintenance
- Memory (Recordkeeping)
- Output (Free / Reduced / Paid Sales)
- Training
- Procedures
- Direct Observation

METHODS

- Study design followed a case-study approach
- Site selection was dictated by the limited number of sites attempting to offer a vended reimbursable lunch and willingness to participate in the study
- Structured and informal interviews were conducted
- Observations of high school students participating in the vended lunch process occurred, as well as, technology used, food safety, preparation, service, and mechanical operations of the vending machines
- Archival records (documentation) related to implementation activities were collected, analyzed, and interpreted
- Data collection instrument, *Assessing the Feasibility of Offering Vended Reimbursable Meals to Students Study Data Collection Instrument* was developed and collected in two phases
- Phase I data collected focused on school meal participation, financial information, pre-prepared vended meal components, and ingredient and labor costs
- Phase II data collected included a structured interview with pre-determined questions to collect operational details of the vended reimbursable lunch project and identify potential barriers to success, focusing on thirteen basic topic areas
- Documents and reports were examined according to their context and purpose using content analysis techniques
- Data were tabulated and cross-checked from each individual site visit
- Comparison focused barriers to implementing a vended reimbursable lunch

RESULTS AND DISCUSSION

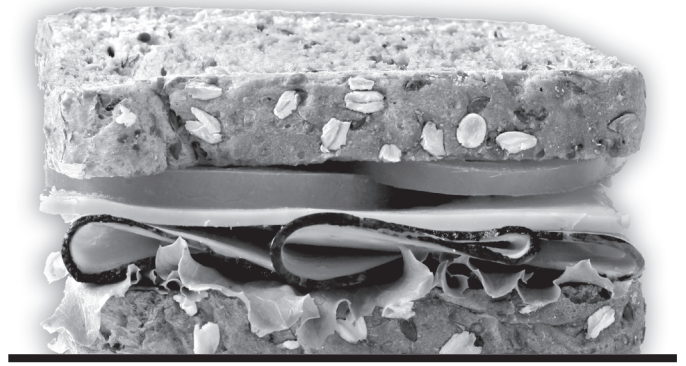
A vending consultant with expertise in school foodservice was hired by both districts to provide advice on vending processes, recommendations for purchasing vending machines, supplies, and required technology. In both districts, project leaders worked closely with and coordinated the vended reimbursable project with the administrator of the school nutrition division of the state Department of Education (DOE) and the Director, Child Nutrition Division, Food and Nutrition Service, USDA. Sites were visited to inspect the menu, machines, sanitation, production, operations, reporting capabilities, and procedures for meeting all USDA requirements for the National School Lunch Program (NSLP.) The administrator of the school nutrition department of the state DOE communicated often with the district to assure that all requirements were met before the projects could be approved. It is important to note that the sale of reimbursable lunches from vending machines makes each machine a point-of-service (POS) and subject to the federal Coordinated Review Effort (CRE) and ACCUCLAIM regulations.

In both districts, the school nutrition program owns and operates the machines vending reimbursable lunches. District A utilized refrigerated open-faced machines that display all items at once. District B selected refrigerated, carousel type machines. In both categories of machines, individual sectors can be adjusted to display and vend varying sizes and numbers of selections.

District A students enter individual personal identification numbers (PIN) in a keypad on the face of the vending machines. Students can use any in the following methods in any combination for identification: PIN, student identification number, biometric finger imaging, and identity card readers (either magnetic strip reader or bar coded). A photo of each customer and transaction is retained on tape for future reference.

The machine accepts cash and the electronic technology has the capability to recognize selections that create a reimbursable lunch. It also can access the district data base of students, their financial records, and meal eligibility category. The confidentiality of the customer is assured and food items are vended according to student eligibility and NSLP regulations. Parents have the option to prohibit their children from using their meal accounts to purchase from vending machines.

District B established an interface to integrate the cashless technology in the vending machines with the lunch accountability point-of-sale software was



required to ensure that each sale was conducted and recorded correctly according to NSLP regulations. Each machine was equipped with a biometric reader to scan the index finger of users and a keypad for students to enter their PIN. The fingerprint technology and PIN are tied to the school data base to ensure that only qualified students purchase meals at a reduced price or receive a free lunch from the vending machines. When the machine does not recognize the fingerprint as that of a free or reduced price eligible students, these patrons are charged the full à la carte price. Second meals are recognized as such and the buyer is charged accordingly.

SELECTION FACTORS FOR VENDED REIMBURSABLE LUNCH FOOD ITEMS IN DESCENDING ORDER OF IMPORTANCE

Rank	District A	District B
1	Food Safety	Student Preference
2	Cost	Nutrition Value
3	Student Preference	Food Safety
4	Labor	Cost
5	Nutrition Value	Labor
6	Pre-packaged Portion	Packaging Requirements
7	Packaging Requirements	Pre-packaged Portion
8	Temperature Requirements	Temperature Requirements

District A used the traditional food-based menu planning option with the menu developed by the director and field manager. Sandwiches, salads, fruit drinks, milk, and side items such as fruit are prepared on-site and loaded into the vending machines. Each food item category is displayed on a separate tier and the machine software identifies selection combinations that qualify as a reimbursable meal.

District B used the food-based menu planning option and vended lunches were prepared on-site. All components required for a reimbursable lunch were packaged together in a clear, plastic container. Meals that meet school nutrition program requirements are prepared from a rotating menu of sandwiches, yogurt, fruits, salads, juices, and milk choices. To fulfill the Offer versus Serve requirement, some lunches contain three items, some four items, and some five items. Within these categories, additional choices are offered. The machines automatically cease operation if options are not available. Each machine vending a reimbursable lunch is considered a point-of-sale and the same information generated by the point-of-sale software for regular serving lines is generated for each vending machine.

District A reported participation of the vended lunch sold approximately 100 reimbursable lunches a week. District B increased lunch participation through the sale of vended reimbursable lunches, providing a 20-25% increase from an earlier decline in participation due to a

drastic schedule change. In both schools, sales of the reimbursable lunch currently involve small numbers, but with expansion of the program, longer operation, and increased marketing, the number of students purchasing a nutritious reimbursable lunch is projected to increase. Within the year, the vended reimbursable lunch program will be expanded to all high schools in both districts. This will demand greater marketing efforts to introduce the new meal option and encourage students to select a nutritious, reimbursable lunch from a vending machine.

Each district faced barriers to implementing the vended reimbursable lunch. Some obstacles were common to both and some were unique to the particular situation or district. The negative features identified of vending include the maintenance and upkeep required (especially currency and product malfunctions), vandalism/theft, energy consumption, and trash from bottles and packaging.

BARRIERS TO IMPLEMENTING A VENDED REIMBURSABLE LUNCH

- Scarce to non-existent written information about vended reimbursable meal options
- Lack of experienced individuals to mentor and share knowledge and experiences
- Insufficient time anticipated and designated to investigate, plan, and implement a vended reimbursable lunch
- Lack of support by school, district, or state agency personnel
- Insufficient time, labor, or financial resources available/dedicated to project
- Myriad regulations
- Prior contractual obligations
- Lack of access to marketing techniques and skills
- Inadequate technology in existing vending equipment
- Scarcity of expertise to integrate/interface new and existing technology
- Few packaging options appropriate for use in vended lunches
- Expense of customized vending technology
- Inappropriate menu for vended reimbursable lunch
- Many prepackaged vending food items incompatible with nutritional requirements for a reimbursable lunch
- Inadequate site evaluation for vending machine placement
- Employee training required for the vended reimbursable lunch project

PRACTICAL USE OF THIS INFORMATION

This qualitative study following case study design provided useful information for school nutrition program and school personnel, administrators, district financial personnel, and state agency professionals when considering innovative vending practices. The information in this case study research can be used to assist SNP directors when planning a vended, reimbursable lunch and the results offer guidance in implementing a vended reimbursable lunch that provides an additional menu option and the potential for increasing participation and revenue.

Despite the drawbacks inherent in vending, substantial benefits can be derived from a well-administered vending program. Income is typically seen as the greatest benefit but other advantages include labor savings, line speed, convenience, after-hour sales, and enticement to keep students on-campus. Commitment and enthusiasm are needed to guide a vended reimbursable lunch project to completion. In both districts,

THREE KEY FACTORS FOR IMPLEMENTING HEALTHFUL REIMBURSABLE LUNCHES:

- Support
- Regulations
- Technology

motivated individuals took action to initiate and lead the process of change while gaining support from those affected in the school and district. Many factors are crucial to accomplishing the aims of the vended reimbursable lunch project.

As the technology becomes more available, vending machine prices will decrease making the sale of vended reimbursable lunches more financially advantageous for school nutrition programs. School nutrition program directors are advised to become more aware of trends associated with vending machines and to conduct comparative reviews to ensure their decisions are based on sound logic and technology needed to vend a reimbursable lunch.

FACTORS SIGNIFICANT IN THE SUCCESS OF OFFERING A VENDED LUNCH TO STUDENTS

- The SNP Director is committed to the concept of the vended reimbursable lunch.
- An enthusiastic “champion” is eager to lead the project and work through all barriers to achieve success.
- Participating school principals understand the vended reimbursable concept and support its implementation and continued operation.
- The school nutrition administrator at the state agency provides support and guidance to the school district.
- Reliable and task appropriate electronic software and hardware provide the essential structure to offering vended reimbursable lunches to students in accordance with USDA regulations.
- The technology representative provides guidance, assistance, and flexibility in meeting district vending objectives.
- SNP directors possess a thorough knowledge and understanding of program regulations and ensure they are correctly expressed in operating the vended reimbursable lunch.
- A vending consultant and vending machine sales representatives facilitate planning and implementing and provide solutions to problems encountered.
- Prompt technical maintenance and repair is available for continuing operation.
- The physical security of the vending machines is ensured.
- Vending machine placement is carefully evaluated with the aim of enhancing participation.
- The vended reimbursable lunch is marketed to students, parents, teachers, school administrators, and other interested parties to attain the aims of the program.

For More Information

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