

# Management of Food Composition Databases in Foodservice Settings

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Food composition databases serve important functions in foodservices. If the operation supports patient foodservice in a healthcare setting, clinical staff need estimates of the nutritional content of the foods served to their patients as they plan modified diet menus or tailor menus for a particular patient. In other foodservice settings, nutrition-conscious clients are requesting information about the nutrient composition of menu offerings. Often the food products offered are mixed dishes prepared on-site from a variety of ingredients. Some of the ingredients may be formulations developed specifically for quantity food production operations and not included in standard food composition databases. Other ingredients may be foods in an unprocessed form requiring pre-preparation and estimation of weight changes prior to incorporation in mixed dishes. Foodservices are not likely to have the nutrient composition of recipes analyzed in a chemical laboratory; estimation of nutrients in recipes with a computerized database system is the most common method for determining nutrient profiles. Thus, access to a food composition database facilitates operations in the foodservice setting.

Management of a food composition database in the foodservice setting involves some of the same considerations encountered in other settings. Although not concerned with preservation of previous editions of the database, the database manager in a foodservice setting is concerned about maintaining an up-to-date database that reflects ingredients and ready-to-serve foods used in the operation. The updating activity requires effective quality control procedures and well-designed software to accomplish the maintenance functions. In organizations providing both foodservice and patient/client care, integrated applications eliminate the ex-

pensive and time-consuming tasks of maintaining multiple data bases. These considerations are addressed more thoroughly in the following sections.

## *Establish a method for identifying added nutrient profiles*

Multiple sources of data are often maintained for the same food item in a food composition database and require methods for identifying and organizing supplemental data. If additions are necessary to identify a particular ingredient used in the foodservice operation, some system is needed to position the profile for that item in the database so that it will not be lost when the standard items in the database are updated. Numbering systems or qualifiers are techniques for protecting these additions in a database over time. When the new data are for the brand name version of a generic item listed in the food composition database, a source qualifier could be coded as a part of the data record to distinguish that food item from the one in the standard source database (eg. 06253 00 for a USDA record for the generic food item; 06253 01 for an added record for brand specific data ). When a corresponding generic item is not present in the food composition database, one is challenged with positioning the new profile in the database so that subsequent updates from the standard source will not result in "over-writing" of that data record. In positioning the new data record, some system is desirable so that new items are in logical locations in the database or on listings of the nutrient database (NDB).

## *Integrate applications so only one NDB is required*

Maintenance of a food composition database can be centralized in an organization if applications are inte-

grated. Thus, the duplicative efforts of database maintenance can be avoided. However, if both foodservice and other uses will be made, the requirements of all applications must be considered when the database structure is designated and the software applications are developed. With careful system design, a foodservice operation can utilize the same food composition database used to support research or patient care functions. Centralized management of the updating process with strict quality control procedures will probably result in a more reliable and economical source of data for all aspects of an organization.

*Coordinate NDB with ingredients in a recipe data base*

Food production practices influence what nutrient profiles will be required in a food composition database. Also, the nutrient calculation method will influence what food composition data are used to estimate nutrient profiles for a mixed dish. Frequently foods are served with non-edible parts (eg. bone in a pork chop); the non-edible portion needs to be included in the portion weight in order to monitor recipe yield and portion control. However, the nutrient values for the portion should correspond to only the edible portion. Thus, for foodservice operations, intermediate and finished recipe and portion weights are useful.

*Develop output or applications to support menu planning and/or menu tailoring*

Nutrient databases and recipe databases provide the infrastructure in a foodservice system and support menu management functions. Once the databases are loaded with data that accurately reflect the foods served in an organization, software applications can be developed to facilitate both strategic and tactical aspects of foodservice planning and service. Cross-references of ingredients and recipes can be useful to identify recipes containing specific ingredients. On-screen analysis of menus can be used to determine if a specific combination of foods contain nutrients at specified levels. The applications can extend the functionality of the database system.

*Use yield factors to reflect cooking/preparation loss and facilitate purchasing activities*

Yield factors are especially important in a database system supporting food production activities. Foods may be purchased in bulk in an unprocessed form but stated according to some processed amount in a recipe. In these instances, a yield factor is necessary in the database system to convert the amount stated in the recipe to the amount that must be purchased for the

recipe. This yield factor is not involved in computing the nutrient profile for the recipe but is required to correctly cost the ingredient in the recipe when some pre-preparation occurs in the foodservice facility.