

hold components, in-process materials, and dietary supplements under conditions that will protect them against mixups and physical, chemical, and microbial contamination. Packaging materials must also be protected against deterioration. Establishments that do not now perform these requirements and the other provisions associated with holding will incur a compliance cost.

iv. *Consumer complaints.* The quality control unit must review all consumer complaints involving the failure of a dietary supplement to meet any of its specifications, or the failure to meet any other requirements under proposed part 111, including those specifications and other requirements that, if not met, may result in possible illness or injury. In addition, the quality control unit must investigate such a consumer complaint where there is a reasonable possibility of a relationship between the consumption of a dietary supplement and an adverse event. The complaint and report of the investigation results should be reported to FDA when there is a possibility of a serious adverse event.

c. *Major costs by type of activity.* Within these four categories (sanitation, production and process controls, holding and distributing, consumer complaints), the major costs of the proposed rule are recordkeeping (except for sanitation), capital costs for physical plant and equipment, finished product quality testing (part of production and process controls only), labor costs for certain required tasks, and some other costs that were not easily classified.

i. *Recordkeeping.* We used a study of a medical device CGMP regulation to estimate the costs of recordkeeping (Ref. E44). We request comments on the applicability of a study of the medical device CGMP's to dietary supplements.

The compliance cost of recordkeeping is the sum of both the initial design and printing of the recordkeeping documents and the recurring costs of maintaining the records. The cost of training personnel to use mandatory records is a recurring cost that depends on how frequently records are modified, the frequency of personnel turnover, and how complicated the tasks are that are being recorded. The recurring costs

are measured by the workers' wage rate, which we assumed is \$15.65 per hour based on the average manufacturing wage, multiplied by the expected labor hours necessary to perform a written or electronic record and the time necessary for management to review the records to see the actions are documented accurately. For electronic records, the recurring time is the time necessary to ensure that the equipment is serviced and maintained properly.

ii. *Capital costs for physical plant and equipment.* We estimated capital costs for physical plant redesign at \$50 per square foot (Ref. E45). For establishments with inadequate facilities, we assumed that between 0 and 20 percent of the physical plant would have to be renovated, with 10 percent the most likely. For equipment costs, we assumed that very small establishments would on average spend 0 to \$1,000, with \$100 the most likely amount. Small establishments would bear costs 3 times that of very small establishments, which is the ratio of the size of the physical plants of small establishments to the size of the physical plants of very small establishments. We assumed that large establishments would bear (if necessary) costs 20 times that of very small establishments, which is the ratio of the size of the physical plants of large establishments to the size of the physical plants of very small establishments. In other words, we assumed capital costs for physical plant and equipment would be proportional to facility size, as measured in square feet.

iii. *Testing.* Establishments that do not already conduct the required product quality tests of each batch of dietary ingredients or dietary supplement produced would incur the cost for those tests. Under the option for more restrictive CGMP rules, each lot of components would also be tested. The costs per establishment depend on both the number of tests and the costs per test. We did not estimate the cost of developing new, validated tests methods because we lacked information about the costs for this requirement and the number of such tests that need to be developed. We ask for comments on the

costs to develop tests, for the number of tests and the costs for performing each test to comply with this requirement.

- *Number of tests: Model.* To estimate the costs of testing, we first estimated the number and costs of individual tests, without adjusting for the amount of testing already being done. In this section we show how we estimated the likely number of required tests, unadjusted for current voluntary testing. For a representative manufacturer, the annual number of tests would be the number of new tests per batch multiplied by the number of batches produced in a year.

The proposed rule requires only tests for identity, purity, quality, strength, and composition of the final product. The option for stricter CGMP regulations would also require tests of components. Estimating the number of component tests per batch is complicated, because component tests are made on the shipment lots, rather than on the parts of the lots that actually go into the final product. For example, if a lot of some ingredient is used in 6 batches of final products, it would probably be tested only once.

The establishment itself may test the shipment lots, and during inprocess stages for identity, purity, quality, strength, and composition, unless final product testing is done.

The number of component tests per batch of final product would equal the number of tests per component, multiplied by the number of components per batch, divided by the batches per shipment lot (to account for the production of multiple batches of dietary supplements from single lots of components).

The option for stricter CGMP regulations options would also require some inprocess tests upon receipt. The number of inprocess tests per batch is the same as the number of potential inprocess product defects. The estimated number of inprocess tests counts only tests for defects that can occur during production, not tests for the defects of dietary ingredients and components supplied to the producer.

We used the following formulas to estimate the number of tests:

$$\text{Component test per batch} = \left[\sum_j m_j (I_j \times R_j) + \sum_k^n (U_k \times R_k) \right] \times (S/B)$$

$$\text{Inprocess quality tests per batch} = \sum_i^o (H_i \times R_i)$$

Quality tests per batch of final product
= max [m × (1/z), 1]

Where:
I_j = jth listed ingredient;

m = number of ingredients per batch;
R_j = required tests for ingredient j;