

Capital Equipment Investments in Diabetes Care

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Many health professionals involved in diabetes care have little or no experience in the acquisition of capital equipment. Until recently, there were few pieces of capital equipment that could be used in diabetes care, except for those in commercial laboratories. Diabetes health professionals who do not manage a commercial laboratory now have the opportunity to consider the use of a number of pieces of equipment that are designed for the medical office and not the laboratory environment. In this discussion, we consider the evaluation, purchase, and application of capital equipment for the office environment, or, capital equipment management for the neophyte.

There are a variety of devices available for use in diabetes. This article considers equipment that meets the following criteria:

1. It is used by a health professional in a medical office or is applied and removed in a medical office;
2. There is an intention to bill and the expectation to collect ethical charges from third-party payers for the use of the equipment;
3. The equipment is sold on the premise that the reimbursements for its use will financially benefit the provider; and
4. There is usually the expectation that the equipment will enhance the perceived excellence of the diabetes care rendered by the practitioner.

Capital Equipment for Use in Diabetes Care

Although the number of items for use in diabetes care that fulfill the above criteria

is not large, the list is certainly growing (Table 1). The items include desktop devices to measure hemoglobin A1c (A1C), glucose monitoring sensors, devices to assess neurological defects in diabetic patients, ultrasound devices to measure carotid wall atherosclerosis, and various cameras for assessment of retinopathic changes in diabetic people.

These devices vary in size, cost, and potential reimbursement; however, they all meet the criteria enumerated above. They are used or applied and removed in the medical office. They are all advertised as items for which third-party payors may be billed. The vendors of these items strongly suggest that their use entails the generation of a positive financial return on their cost. And these items offer the possibility of enhancing the sophistication of the care experience in the office or outpatient setting.

Fiscal Assessment of Prospective Capital Equipment

To determine whether a particular piece of capital equipment should be acquired, health care organizations should first do a set of basic fiscal assessments of the equipment costs and expected use (Table 2). Usually, vendors will present equipment costs in a very positive manner based on the expected reimbursement to be gained by the use of the devices they

are selling. The data equipment vendors present are almost always more optimistic than what the actual real-life use of the equipment will bear out.

A vendor will present the acquisition cost for the piece of equipment in question. This may also be called the "capital equipment cost." The vendor will then suggest some arrangement to lease or purchase the equipment, if it is an item of sufficient cost to warrant payment over time. This cost will be presented as a periodic, usually monthly, payment plan. The monthly cost will be compared to the expected monthly income generated by use of the piece of equipment.

Less expensive equipment that is purchased by a one-time payment should also be analyzed on a monthly basis. For such items, health professionals should map out the expected life of the equipment. (Three years is a standard time frame.) The initial cost of the equipment is then divided into 36 months of use for purposes of fiscal analysis. The costing of the equipment in equal parts over its expected longevity is called "amortization."

Health care providers should *not* use the capital equipment cost for any item to assess its profitability. Instead, providers should add space costs (if the equipment will require a consequential amount of space), supplies, personnel costs, and the costs of billing and collecting for the tests the equipment performs. The calculation of these individual cost factors should be based on the fractional use of space, resources, or personnel the equipment will require. If the equipment will require a dedicated space in the office, the monthly cost of that space should be added to the monthly

Table 1. Capital Equipment for Use in the Diabetes Care Office Environment

- Continuous glucose sensor devices
- Desktop A1C machines
- Neurological testing equipment
- Retinal cameras

Table 2. Vendor Predictions of Expenses and Revenue Versus Actual Expenses and Revenue From Capital Equipment

	Monthly* Costs (\$)	Space Costs (\$)	Personnel* Costs (\$)	Supply* Costs (\$)
Glucose sensor				
Vendor prediction	56	0	N/A	35
Actual	56	0	40	35
A1C machine				
Vendor prediction	56	0	0	8
Actual	56	0	2	8
Neurological testing equipment				
Vendor prediction	556	0	0	0
Actual	612**	80	10	30***
Retinal camera				
Vendor prediction	556	0	0	0
Actual	612**	40	10	30***

*Cost per test
 **Includes interest charges on lease or purchase loan
 ***Charge from vendor for interpretation of test results

capital equipment cost. The personnel time required to run the equipment should be calculated in minutes per test and then multiplied by the expected number of tests per month. Health professionals should also calculate and add any *indirect* costs the equipment will consume. These would include any repair or maintenance costs, special costs (such as payment for phone or modem line connections), and service contract fees. The total of these costs are the *real* costs. This figure should be the one providers use to judge profitability.

The monthly equipment cost may then be compared to the expected income from the equipment. Predictions of monthly income are often based on the vendor's model for probable reimbursement and the vendor's prediction of expected monthly usage. These figures are frequently optimistic. A healthy dose of realism is always beneficial in assessing expected income.

The first question is whether insurers will pay for the tests run by the equipment at all. The citation of a billing code

and suggested billing amount by the vendor does not mean that insurers will pay on that code or will pay the amount the vendor suggests. Health professionals should directly inquire of their key insurance contractors whether a billing code merits reimbursement and what the usual reimbursement is.

Vendor models for monthly usage often assume a use that would require every possible patient to be subjected to the test procedure. This rate of use may exceed what health providers would usually order for their patients if they did not own the test equipment themselves. Such excessive use might be audited by insurers.

Income is also dependent on reliable reimbursement for the test by insurers. With some capital equipment for diabetes, insurers have reimbursed only a fraction of all tests billed to them. Also, some test procedures may be disqualified by insurers if the practitioner does not have specialty credentials to qualify for payment for the test in question. Therefore, health professionals should always

confirm that the equipment does not require any special arrangements mandated by credentialing, legal, or licensure codes. For example, certain types of desktop equipment to measure A1C are exempt from requirements for laboratory certification, whereas others are not. A provider who does not have such certification and purchases one of the units in the latter category may find that insurers will not honor bills for that test.

Examples of Capital Equipment Assessment

Example 1: Desktop A1C machine.

There are at least two major vendors attempting to sell desktop A1C machines to medical offices and organizations. These machines are exempt from special certification for laboratory status. Thus, the tests can be billed to insurers, and third-party payers will reimburse for the test. The most common initial cost for such devices is ~\$2,000. The list price for the supplies for each test is \$8.

To assess the real cost, then, divide \$2,000 by 36 months (assuming a 3-year life for each machine) and add the result (\$55) to the expected number of tests per month multiplied by \$8 per test for supplies. For an office that expects to perform 50 tests per month, this would be \$55 + (50 × 8), or \$455. To that, add personnel time. Assuming the machine requires 5 minutes of personnel time per test, the machine would require 250 minutes or slightly more than 4 hours of personnel time per month. Assuming a personnel cost of \$ 20 per hour, this equipment would require \$80 in personnel time per month. This figure would be added to the cost of the equipment and supplies, bringing the total to \$535. Because the machine occupies little space, there is no significant space cost to also add into the calculation.

Thus, the actual cost of this device to perform 50 tests per month would be \$535. The usual reimbursement for an A1C measurement from insurance companies is \$12 per test. At 50 tests per month, the diabetes care organization

would bring in \$600 per month. The gross profit margin would be \$65 per month, or a gross margin of ~10%. This is a very small profit margin. So, although this device may have other benefits to the practice, such as point-of-service testing, claims about its fiscal benefits should be considered carefully.

Example 2: Retinal camera. A retinal camera usually costs ~\$20,000. When amortized over 3 years, the monthly equipment cost would thus be \$556.

The camera will require some space, costing an average of \$100 per month. It will also require ~20 minutes of personnel time per test. For 20 tests per month, the camera will take ~6.5 hours, or \$130, of personnel time per month. Thus, the real monthly cost of this equipment is \$786. If the equipment were leased or purchased with a loan, the monthly interest costs should be added to that. Usual-

ly, vendors will encourage practitioners to lease the equipment from their corporate lease partner. These leases carry a much higher interest rate than simple bank loans. Also, if a service outside of the camera owner's office must read and interpret the pictures, the costs for that should be added to the monthly cost as well.

When reimbursement for this testing is considered, the camera may not be as profitable to use as many suspect. The average insurance reimbursement ranges from \$51 to \$100 for retinal photos of both eyes. Depending on the insurance profile of the patient population, between 8 and 16 studies per month may be required to cover the monthly costs of the equipment. If the provider pays an outside service to interpret the photographs, the additional cost will increase the number of tests necessary to break even each month.

Summary

Fiscal assessments of capital equipment should be carried out before any items are purchased. The real costs of these devices are usually much higher than the costs presented by equipment vendors. Reimbursement for these devices should always be confirmed, and the amount of reimbursement should be compared to the real operating costs of the equipment on a monthly basis. Such analyses will prevent health professionals from encountering nasty surprises once they have invested limited resources in such devices.

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