

$$\text{ROI} = \frac{(\text{Gain from Investment} - \text{Cost of Investment})}{\text{Cost of Investment}}$$

Return On Investment (ROI)

for the Ambulatory Electronic Medical Record

What is ROI? ...It's Not Release Of Information.

ROI can stand for Release of Information, but in the financial world it stands for Return on Investment.

ROI is used to evaluate the efficiency of an investment or to compare the efficiency of a number of different investments. In other words, how well do the measurable benefits of the project stack up against the project costs?

To calculate ROI, the benefit (return) of an investment is divided by the cost of the

Financial Basics

Other financial ratios to consider when performing investment analyses include:

Net Present Value (NPV) compares the value of a dollar today to the value of that same dollar in the future. The future value of the dollar takes inflation and future returns into account (also known as the opportunity cost of capital).

NPV is used to analyze the profitability of an investment or project.

It is sensitive to the reliability of future cash flows that an investment or project will yield. If the NPV is positive of a prospective project, it should be considered for acceptance. Conversely, if the NPV is negative, the project should probably be rejected since future cash flows will be negative.

Internal Rate of Return (IRR) is defined as the rate of interest at which the present value of expected cash inflow from a particular project equals the present value of the expected cash outflow of the same project. In other words, it is the rate of interest at which the net present value (NPV) equals zero or the return rate that can be earned on the invested capital.

Assuming all other factors are equal among various projects, the project with the highest IRR would probably be considered the best. IRR's can also be compared against current rates of return in the securities market.

Payback Period measures the time required for the project's cash inflows to equal the original outlay. Time can be measured in weeks, months or years. It does not measure return, but risk.

Formula:

$$\text{NPV} = \sum_{t=1}^T \frac{C_t}{(1+r)^t} - C_0$$

Why use the ROI Metric?

Return On Investment is a relatively simple way to determine if an investment has a positive ROI. If it does not, or if other opportunities have a higher ROI, then the investment should not be undertaken.

Benefits of performing an ROI calculation on an Ambulatory EMR implementation include:

- Provides a baseline measurement of the estimated implementation costs and anticipated benefits

- As the implementation progresses, anticipated benefits and expenses can be refined and benchmarked against the baseline

- After system usage begins, capture real world costs and savings experienced by the organization to compare to what was anticipated

- Standardized methodology allows for comparisons over time, across organizations, and with shifting assumptions

Expenses to Capture:

- Software costs including third party license fees

- Hardware costs / ASP costs

- Interface expenses

- Maintenance expense

- Installation expense

- Operating expense

Benefits to Capture:

- Increased revenue from improved physician productivity resulting in new visit capacity

- Increased revenue from improved coding and recovered lost billings

- Decreased costs from shared staffing – billing and medical record staff

- Decreased transcription costs

- Decreased records supply expense

- Decreased AR days

- Decreased record storage expense

- Reduced malpractice premiums for physicians that utilize electronic medical records

- Decreased costs associated with duplicate or redundant orders (for capitated patients)

- Decreased costs due to increased productivity of nursing and support staff

- Decreased costs for medical audits due to the reporting capabilities of an EMR

- Increased revenue from preventative care services

due to the institution of health reminders

- Future savings can be realized from the administration of preventative measures

- Decreased costs associated with the avoidance of adverse events through the use of drug-drug, drug-allergy, and drug-laboratory alerts.

Incremental Costs:

Internal support staff costs
Transitional staffing costs
Physician lost revenue

Intangible Benefits:

Improved quality of patient care is achieved through chart accessibility and integrity.
Adherence to clinical practice guidelines is achieved through system alerts.
Disease prevention and HEDIS compliance is achieved through system flags.
Drug interaction screening is achieved through the EMR's drug database.
Clinical reporting and the associated research and publishing opportunities are achieved through the system's reporting tools.

Improved patient satisfaction is achieved through patient educational materials, including summary reports of their visits.

Improved retention and recruitment of clinicians is achieved by improving the quality of work life through the electronic access of patient information at the office and at home.

Management reporting capabilities enhance the ability to contract with managed care organizations or directly with employers.

[Use our new EMR/ROI Calculator](#) (Created by HIMformatics)