

Abstract

Healthcare delivery systems are also record-keeping systems. The record of an encounter with a consumer is essential for payment, referral, coordination, communication, etc. Integration. . . Most organizations are oriented to their electronic medical record (EMR) as their record-keeping system. Certain HIV programs will also document their patient’s data in CAREWare, which often requires manual entry or duplicative record keeping. Two arithmetic equations framed the evaluation. First, we asked how much time is lost to duplicative record data entry. We used the following formula to determine time lost: $x*y*(z/60) = t$, where x = number of consumers requiring manual data entry, y = number of encounters per year that require record entry, z = number of minutes to duplicative enter record per encounter, and t = time in hours spent on duplicative data entry. Second, we asked how much labor cost is expended to duplicative record data entry. We used the following formula $t(z/2200) = c$, where t = time in hours spent on duplicative data entry, a = annual salary, and c = estimated labor cost for duplicative data entry. The methodology to accomplish this plan and outcome was a time study. Case managers and Data specialist were observed in standard service protocol and amended service protocol with data integration.

Background

•Effective healthcare delivery requires robust record-keeping of consumer encounters which are the bases for payment, referral, coordination and communication. While most ambulatory health settings utilize electronic health records, certain HIV programs must also document consumer data in CAREWare.

•Maintaining two record-keeping systems requires intensive manual labor and duplicative data entry by core service personnel who could otherwise see patients during that time. An alternative protocol was proposed to utilize a data-service partner’s (Epididian) Ryan White Data Service (RWDS). To metricize benefits and determine feasibility, we employed three arithmetic equations.

Materials and Methods

Formulae

- Time lost to duplicative data entry was calculated using: $xyz/60=t$
- Financial cost incurred by duplicative data entry was assessed using the formula $t*c=a$
- The ratio to determine savings was obtained for costs for each protocol. The time cost is the ratio $(t_c-t_i)/t_c$, where subscripts indicate control and intervention.
- The above ratio must account for the cost of Epididian's services: $(t_c*a_c-(t_i*a_i-p*x))/(t_c*a_c)$

Variables

- x =number of consumers requiring manual data entry
- y =number of encounters per consumer per year that require record entry
- z =time in minutes to enter duplicative record per encounter
- t =time in hours spent on duplicative data entry
- a =hourly wages of personnel assigned to perform redundant data entry
- c =estimated labor cost for duplicative data entry
- p =financial cost for any charges by the outside service

Study Results

Ingham County achieved **TIME COST SAVINGS** of staff interfacing with Ryan White data of 75% by using Epididian’s services.

FIGURE 3

Ingham County, utilizing Epididian’s Ryan White Data Service achieved **FINANCIAL COST SAVINGS** of 75% per participating patient.

FIGURE 4

Discussion

SECTION 1

Many fields require manual data entry, consuming valuable time that could and should be reallocated to time spent in front of patients. While developing personnel to specialize in managing Ryan White data worked in the past, automation offers a solution that prevents siloing of clinical and administrative staff.

SECTION 2

As more and more demand constrains hospital budgets, finding any opportunity to alleviate financial and human resource expenditures becomes paramount. The values used for the variables are the most conservative from among the selection. We wanted to present the minimum reasonable benefit to a clinic that works with Ryan White data.

SECTION 3

Through this analysis, some light has been shed on how to improve healthcare systems. We believe we need to: Apply rigorous analytical methods like time studies to improve specific protocols in RWHAP-funded programs, quantify and eliminate duplicative processes in HIV healthcare management, and apply thorough methodology to other data interface challenges.

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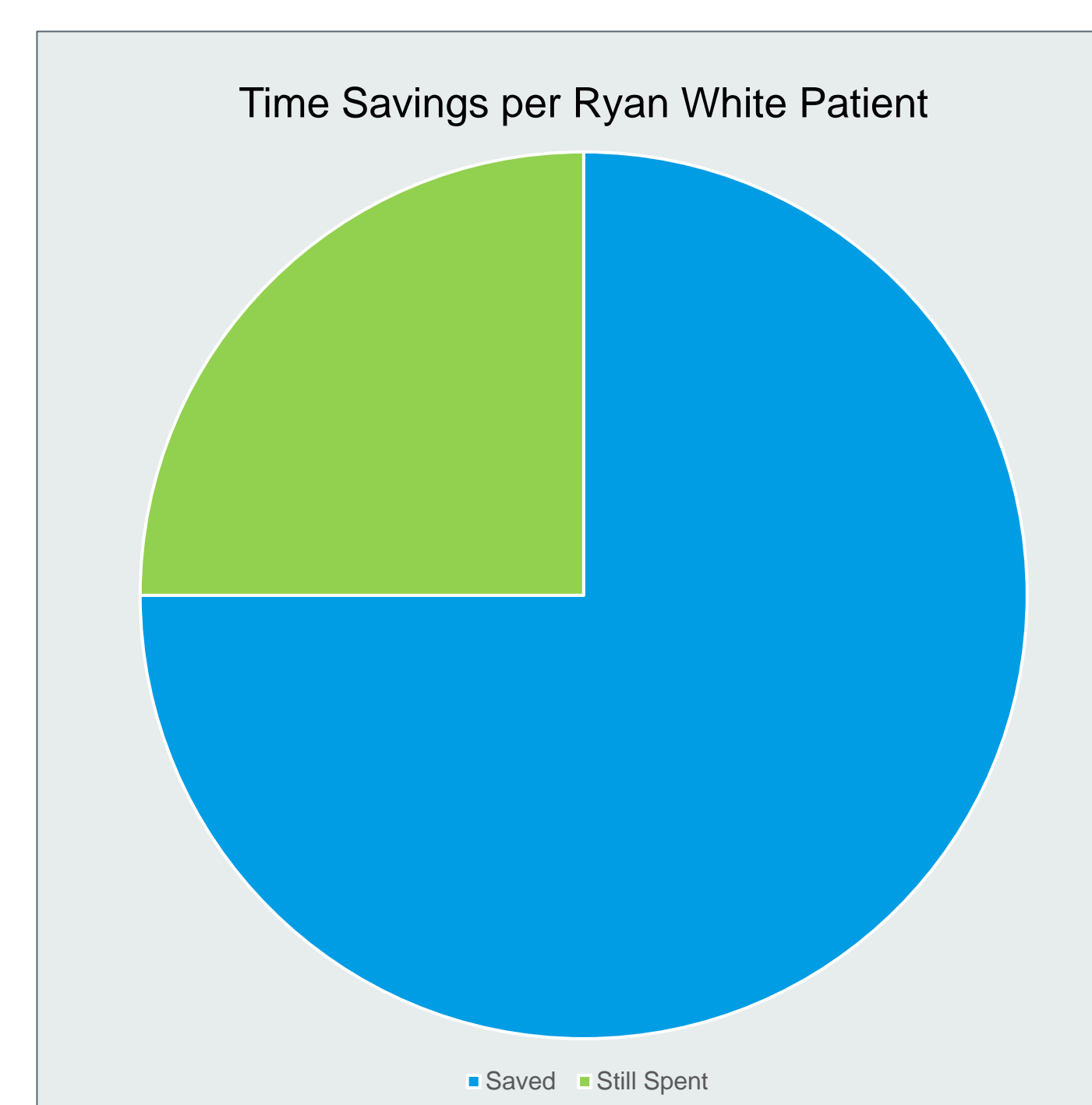


FIGURE 2A CAPTION

Approximately 9 months of labor productivity can be recaptured by implementing this solution.

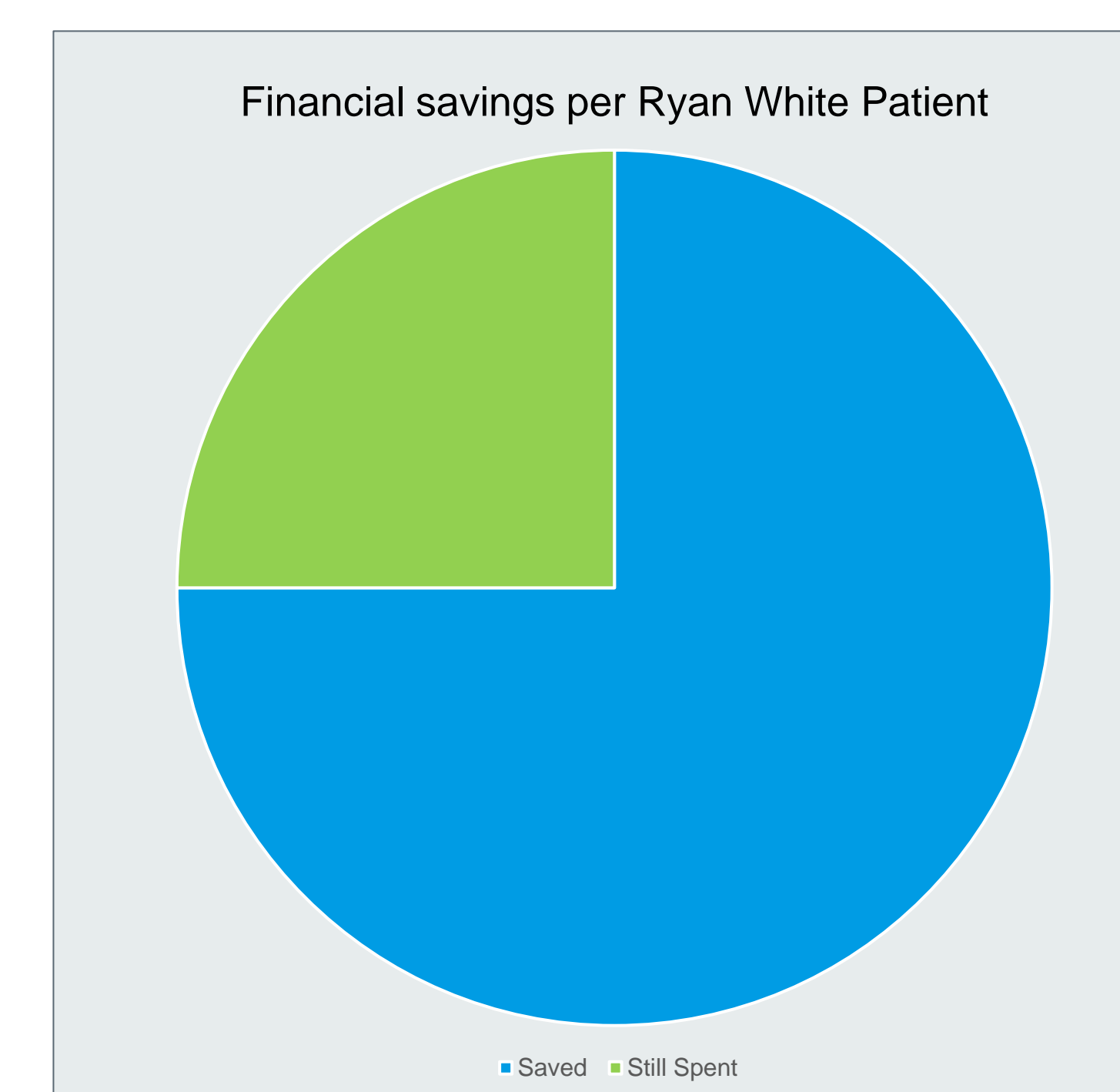


FIGURE 2B CAPTION

Averting 75% of the cost empowers clinics to reallocate funds to hiring staff and focusing efforts on patient care.

Subscripts c and i denote control/standard protocol and intervention (Epididian) respectively. Variables a_c and a_i have the same value as there is no change in the salary the healthcare workers were paid during this time.