

**POSTER SESSION 1 ABSTRACTS**  
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**Information Technology/Medical Informatics**  
**PS1-63**

**Improving Organizational Performance through Integrated Accountability**

Nurit L. Friedman<sup>1</sup>; E. Kokia<sup>1</sup>; J Shemer<sup>1, 2</sup>

<sup>1</sup>Maccabi Healthcare Services

<sup>2</sup>Sackler School of Medicine Tel Aviv University

**Background:** The challenges facing healthcare organizations are difficult and complex. In a highly competitive environment with continually rising costs, HMOs must define a strategy that provides their members with high quality and cost-effective care. Managing these demands requires tools that enable organizations to continually monitor progress towards their strategic goals. In particular, they require tools for both focusing their efforts and for determining the extent to which specific actions and processes contribute to strategic goal achievement.

"Health Value Added" (HVA), is an innovative management tool for assessing an HMO's ability to improve the health of its members while keeping within budgetary constraints was developed by Maccabi Healthcare Services, Israel's second largest HMO. HVA is based on theory and methods from strategic management and performance measurement and makes use of the organization's computerized information systems in order to enable decision makers to evaluate, in real time, both overall organizational performance and the performance of semi-autonomous units.

The impact of HVA on managing the quality and cost of care will be demonstrated by using the example of diabetic care at Maccabi.

**Methods:** We followed HMO members with diabetes from 2001 through 2004. The study population ranged in size from 37,019 in 2001, to 49,525 in 2004. Data on costs per diabetic member and services provided were extracted from Maccabi's computerized database. Demographic information, such as age, gender and socio-economic status allowed for adjustment for case-mix.

The quality indicators examined included measures of performance (percent of diabetics tested for HbA1c, LDL etc.) as well as outcome measures (HgA1C <7% or >9.5% and LDL<100mg/dl). The costs measure was defined as Maccabi's mean total annual expenditures per diabetic patient per year.

We examined the changes over time in both quality and cost measures, using univariate and regression analysis with inclusion of demographic covariates. Costs were not normally distributed; therefore the cost variable was included in the regression analysis using a logarithmic transformation.

We devised a CE (cost-effectiveness) measure to gauge increments of improved performance per 1000 Israeli shekels (NIS). The measure was calculated separately for each quality measure as follows:

$CE = (\%performance) \div (costs \text{ per patient}) * 1000$  where performance = percent of the target population receiving the service specified by the measure, and cost per patient = mean total Maccabi expenditures per diabetic patient in a given year. The purpose of this measure was to provide a method for estimating level of performance on quality measures as a function of resources invested.

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**Information Technology/Medical Informatics**  
**PS1-63 (continued)**

**Results:** Between 2001 and 2004 we observed improvement in all measures studied while average cost per person dropped during the same period. These findings remained unchanged after adjustment of demographic factors and case mix. The results for HbA1c control show that the percent of 'controlled' patients (HbA1C <7) went from 37% in 2001 to 50% in 2004 and percent of patients 'controlled' for LDL (<100) went from 26% in 2001 to 31% in 2004. Calculations for CE for percent of diabetic patients 'controlled' for LDL went from 2.82 in 2001 to 3.44 in 2004.

**Conclusions:** In healthcare organizations there is a growing gap between the espoused mission of promoting health and actual management practice. Costs are monitored in a systematic, on-going way whereas quality of care is monitored sporadically through specific research projects initiated without an overall strategic view. As a result, management focuses primarily on financials and not on their core business, which is promoting health. HVA offers a means for overcoming this separation by requiring management to translate the organization's strategic goals into specific performance measures that integrate quality of care, and costs. The existence in healthcare organizations of computerized medical and financial systems provides the bridge from research to the real-life population as a basis for decision making. We believe that the way to bring quality of care into center stage is to help management more fully understand the relationship between the investment of resources and the "added value" to health.