

# Profound Lack Non-Clinical Healthcare Aptitude Across a Range of Healthcare Providers and Students

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## Introduction

American healthcare continues to undergo profound changes at a breakneck speed. Future challenges show no signs of abating. We feel the next generation of healthcare providers and administrators should be well informed on the many facets of non-clinical healthcare science (regulation, delivery, socioeconomics, etc.) in order to guide healthcare systems and public servants towards better more efficient care. We suspect that few possess even rudimentary knowledge in these fields.

## Methods

We constructed a 40 questions "Non-Clinical Healthcare Delivery" aptitude test covering diverse subjects such as economics, finance, public health, governmental oversight, insurance, coding/billing, study design and interpretation, and more. Questions were framed around fundamental and basic concepts in these various domains. The test was administered to over 150 medical students, residents, practicing physicians, nurse practitioners, nurses, physician assistants, and administrators from diverse clinical departments in south-western Virginia; and the results tallied. Questions were based on key and basic concepts from courses and texts from the Dartmouth Institute/Tuck School of Business Masters of Health Care Delivery Science Program at Dartmouth.

## Results

Participants demonstrated limited facility with non-clinical healthcare topics. No participant scored over 50% on the overall test with average score of all participants below 25%.

**Finance:** Participants answered 10-40% of simple finance questions correctly. 21% knew what was balanced on a balance sheet. 40% recognized what were considered "fixed assets." 30% knew what the "bottom line" represented. 10% understood the concept of cash flow. A section on higher-level finance was eliminated from the first version of the test due to uniformly abysmal performance on the questions.

**Medicare:** 17% of participants recognized principle benefits of Medicare A coverage, 2% Medicare B.

**Burnout/Resilience:** 50% of participants knew principle elements of Occupational Burnout, 15% Compassion Fatigue.

**Malpractice:** 50% knew principle components of medical malpractice.

**Public Health:** Public health question scores ranged from 0 to 24%. 7% knew approximately how many physicians practiced in the united states. 7% knew approximately how many nurse practitioners and physician assistants practiced in the U.S.. 0% recognized the percentage of healthcare dollars spent on administrative services. 5% knew what percent of medical expenditures are spent in the last year of life. 9% recognized approximately what percentage of Americans are overweight.

**Ethics:** 30% of participants answered medical ethics questions correctly.

**Medical Education:** 23% of participants knew approximately how many osteopathic medical students there are in the U.S. (with prompting). 21% recognized the principle funding source of graduate medical education. 6% recognized how much money was spent yearly on graduate medical education.

**Medical Statistics:** 50% of participants knew the basic concepts of p values, 30% knew Confidence Intervals, 50% knew of Confounders, 13% of Lead Time Bias.

**Medical Economics:** 18% of participants recognized the basic concepts of Opportunity Cost, 17% Moral Hazard, 18% Adverse Selection. 30% knew the principles behind a non-profit designation.

## Results ctd.

**Negotiations:** 0% were able to answer basic negotiation concept question.

**Government:** 45% recognized the role of CMS. 30% knew the principles behind EMTALA. 40% recognized the principles behind a Certificate of Need. 10% recognized the role of the IPAB.

**Insurance/Payers:** 10% of participants recognized what was meant by co-insurance, 3% ASO (administrative Services Only), 7% Capitation. 4% recognized the largest payers in healthcare.

**RVU's:** 4% recognized the role of the RUC in establishing RVU values. 2% knew that RVU valuation for outpatient visits did not differ between specialties.

**Medical Home:** 18% of participants recognized the concept of Medical Home.

**Dartmouth Atlas:** 6% of participants recognized that the Dartmouth Atlas demonstrated significant geographic variance in procedural delivery.

Overall no single group of healthcare workers substantially (significantly) outperformed the other groups. Medical students demonstrated an edge particularly with Medical Statistics questions.

## Conclusions

We found that aptitude for fundamental non-clinical healthcare subjects was profoundly lacking across all major groups of healthcare providers and administrators. We feel this indicates a need for a far more robust curriculum in healthcare delivery and socioeconomics. Failure to elevate the educational standards in this realm will jeopardize healthcare providers' "seat at the table" in changes in healthcare public policy.

## Learning Objectives

Recognize the general lack of aptitude in non-clinical healthcare delivery subjects in healthcare providers. identify key areas of need in healthcare delivery and socioeconomic education