Using Incentives to Improve Quality in Health Care: Theory, Literature Review, and Ongoing Research

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Outline of Talk

- (Brief) description of a conceptual model of how incentives might work
- Literature review: What is known now?
- Research in progress: What will we know soon?
- Issues with outcomes reports: Can we believe them?
- Conclusions

Value-Based Purchasing: A Definition

- Value-Based Purchasing includes tactics that purchasers adopt with the goal of increasing the quality of care received by their beneficiaries
- These tactics could include:
  - Using financial or non-financial incentives to directly reward improved provider behavior
  - Incorporating provider quality information into the selection of providers or plans offered to beneficiaries
  - Using financial and other incentives to encourage beneficiaries to select higher quality providers

Value-Based Purchasing: A Definition

- The above VBP tactics do not cover all approaches to improving quality, but include those that purchasers could plausibly implement or cause to be implemented
- The goals of VBP tactics are to:
  - Promote value-based competition among providers
  - Where competition is not feasible, provide a direct stimulus to improve quality and value

Value-Based Purchasing: A Definition

- There are other quality improvement approaches beyond a purchaser's direct control:
  - E.g., introducing guidelines for diabetes or disease management programs for heart failure
  - Studies of these approaches are numerous and are NOT included in this review
    - Purchasers might encourage such efforts, however, by agreeing on uniform standards, or supporting processes that consolidate conflicting guidelines

Value-Based Purchasing: A Definition

- In the review of the literature, we are NOT addressing interventions directed at patients/consumers (e.g., tiered pricing based on quality of provider)
  - However, there is very little literature here

Conceptual Considerations: Characteristics of the Incentive

- Characteristics of the incentive are likely to influence providers' response. Some are obvious, such as:
  - the magnitude of a financial incentive
  - proportion of a provider's practice to which the incentive is applicable

Conceptual Considerations: Characteristics of the Incentive

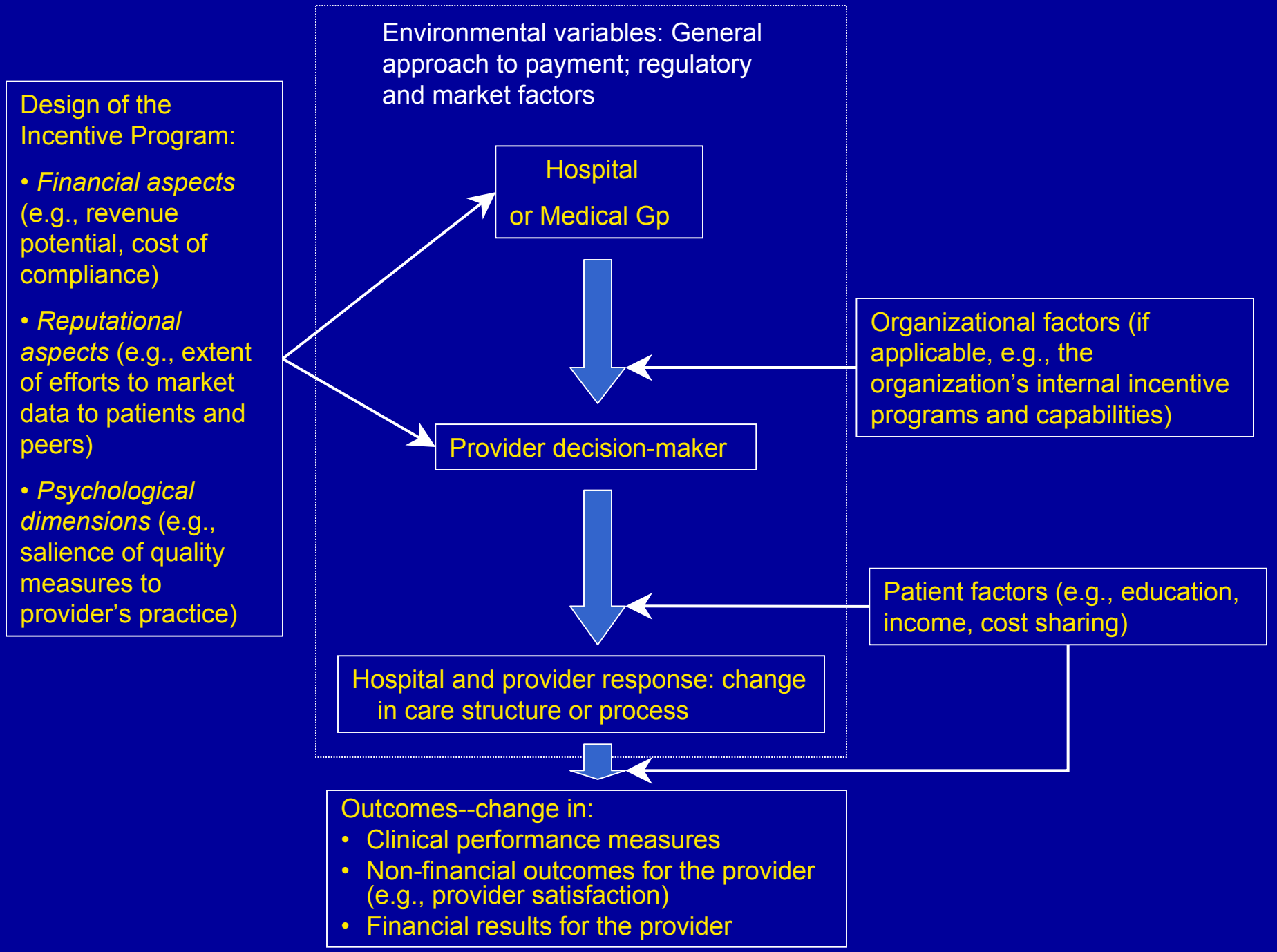
- Other characteristics of the incentive may be critical, but have received little attention, e.g.:
  - the direct cost of complying
  - the opportunity costs of complying
  - non-financial factors (e.g., reputational effects)
  - the presence of competing incentives or guidelines
  - expected timeframe for performance and stability of the incentive program

Conceptual Considerations: Factors External to the Incentive

- There may also be factors external to the incentive that influence providers' responses
  - Some may predispose a provider to respond (or not), such as:
    - The general characteristics of the environment (e.g., FFS vs. capitation, number of other incentive programs offered, past relations between providers and plans or purchasers)
    - The specific characteristics of the physician (e.g., age, work load, income relative to target)

Conceptual Considerations: Factors External to the Incentive

- There may also be factors external to the incentive that influence providers' responses
  - Some may enable or facilitate a provider's response (or prevent response), e.g.:
    - Organizational characteristics of the provider's group (e.g., IT capabilities, interest in improving performance)
    - Patient factors (e.g., education level, willingness to take on self-care)


Environmental variables: General approach to payment; regulatory and market factors
Design of the Incentive Program:
• *Financial aspects* (e.g., revenue potential, cost of compliance)
• *Reputational aspects* (e.g., extent of efforts to market data to patients and peers)
• *Psychological dimensions* (e.g., salience of quality measures to provider's practice)
Hospital
or Medical Gp
Organizational factors (if applicable, e.g., the organization's internal incentive programs and capabilities)
Provider decision-maker
Patient factors (e.g., education, income, cost sharing)
Hospital and provider response: change in care structure or process
Outcomes--change in:
• Clinical performance measures
• Non-financial outcomes for the provider (e.g., provider satisfaction)
• Financial results for the provider

The Conceptual Model: Implications

- In designing VBP strategies, one must consider not only the obvious issues about revenue potential of financial incentives, but also:
  - Costs of complying with performance goals
  - The potential of non-financial incentives (esp. public reporting and consumer education programs)
  - Predisposing and enabling factors external to the incentive: general financial environment, provider traits, organizational effects, patient factors
- The same considerations are necessary when interpreting the literature on VBP

The Literature On VBP: What is Already Known?

- In general, there is very little literature:
  - Only 9 randomized trials of any kind of incentive strategy in which the impact on quality is actually measured.
  - Other randomized trials of incentives to reduce utilization, but with no corresponding determination of whether the care eliminated would have been appropriate or not (so these are not studies of incentives for *quality*)

The Literature On VBP: Results

- First two caveats:
  - Since so many crucial variables are left out of all studies, conclusions cannot be firm
  - Since several important variables are not included in any study, the potential for these factors to change the observed results of these studies is unknown
  - This means users of this data must be cautious and rely on their judgment in drawing lessons

The Literature On VBP: Results

- Two general findings:
  - In some circumstances, providers respond appropriately to financial incentives
  - In some circumstances, providers respond appropriately to public release of performance information

- The precise details of when and how to use these approaches remain murky, however

The Literature On VBP: Incentives Can Work

- In some circumstances, providers respond to financial incentives: Hickson et al. Pediatrics 1987;80(3):344
  - Paid residents their salary plus $2/visit scheduled vs. $20/month for attending clinic
  - FFS-incentivized residents did better complying with well-child care recommendations and continuity…for $2!

The Literature On VBP: Incentives Can Work

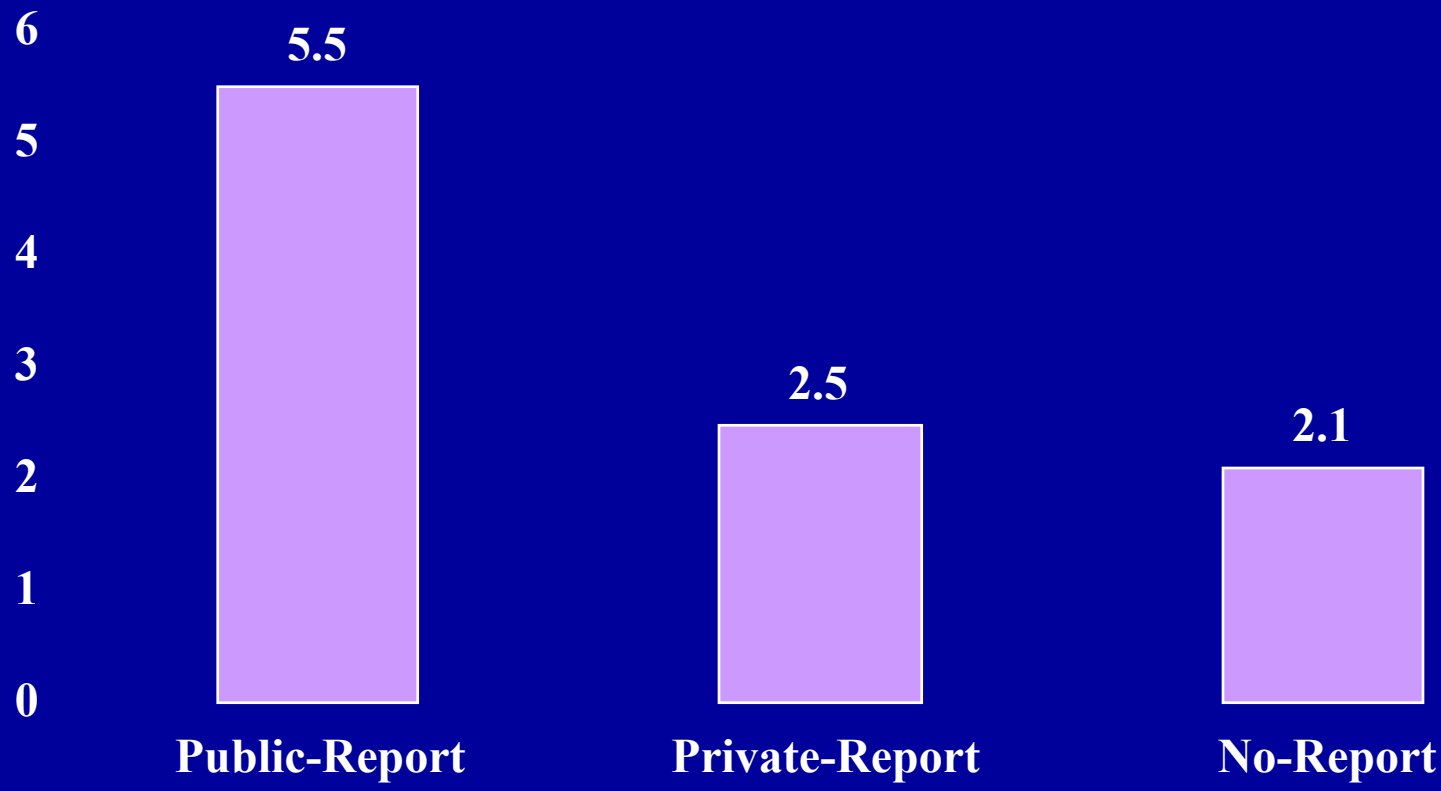
- In some circumstances, providers respond to non-financial incentives:
  - Hibbard et al. Health Affairs 2003;22(4):84
  - Highlighting this study because it is unique

Average number of quality improvement activities to reduce obstetrical complications: Public report group has more QUALITY IMPROVEMENT ($p < .01$, $n = 93$)

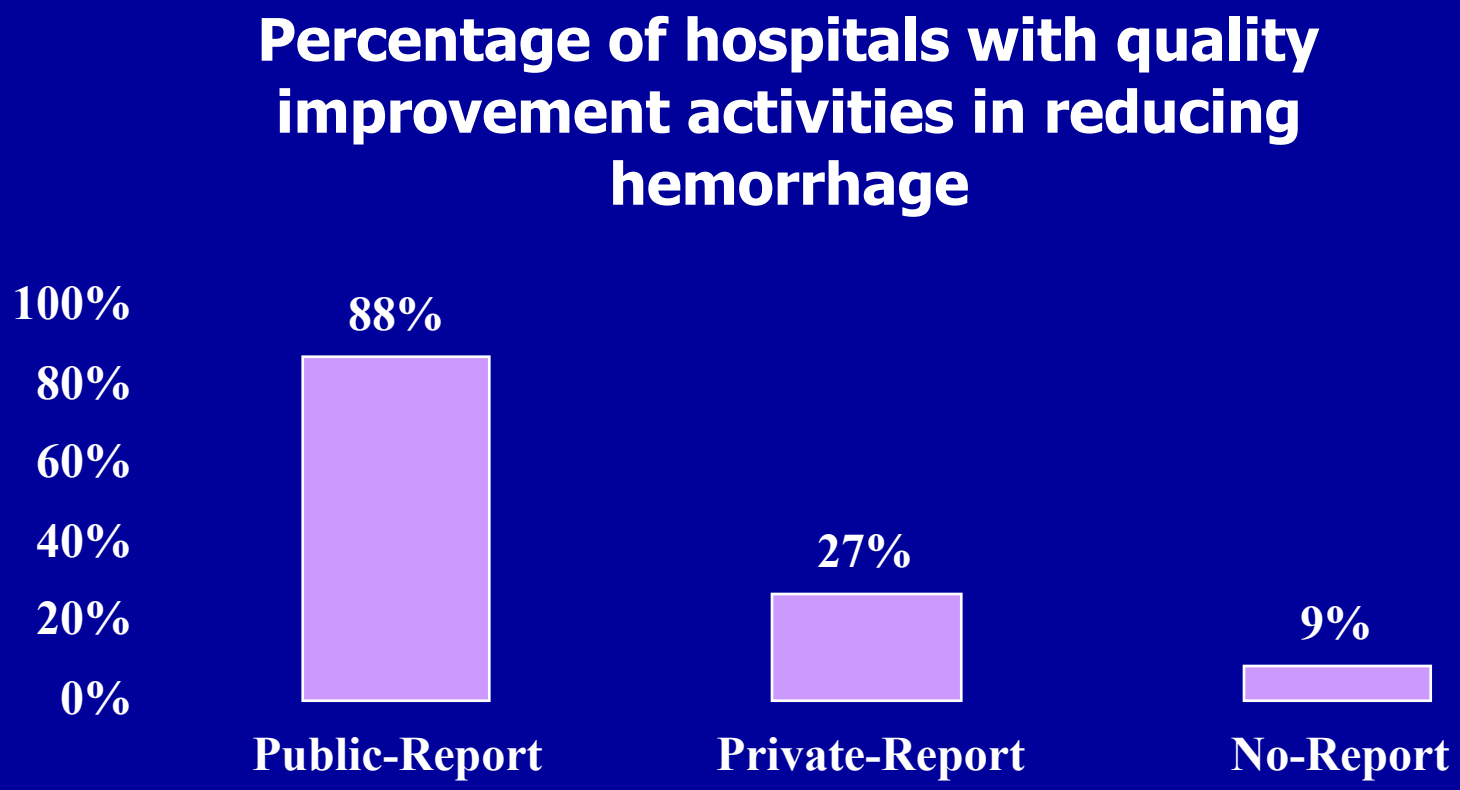
Best practices around c-sections
Best practices around v-bacs
Reducing 3rd or 4th degree laceration

Reducing hemorrhage
Reducing pre-natal complications
Reducing post-surgical complications
Other

Hospitals with poor OB scores: Public report group have the most OB QI activities (p = .001, n = 34)



Hospitals with poor OB score: Public report group have more QI on reducing hemorrhage —a key factor in the poor scores ($p < .001$, N=34)



The Literature On VBP: Results by Topic

- Magnitude of incentive:
  - $2 /visit incentive worked for residents with relatively few other costs, incentives, or income opportunities
  - Others have shown small incentives (e.g., $0.80/flu shot) can have an effect for vaccines (low costs of compliance)
  - Incentives of $10,000 ineffective for tobacco cessation (high costs of compliance)
  - Certainty may matter: only negative immunization study was one in which the incentive was a 15% chance of getting a bonus of $500-2,000

The Literature On VBP: Results by Topic

- Structure of the incentive
  - FFS: 4 positive studies, one negative
  - Bonus for hitting a compliance rate target: two positive, three negative (two negative were for a ~15% chance of getting a bonus if performance better than other groups)
  - Non-financial incentives
    - Public report: one positive study

The Literature On VBP: Results by Topic

- Recipient/Targets of Incentive:
  - Physicians (7 studies, 9 dependent variables)
    - 5 positive
    - 4 negative
  - Pharmacists: one positive study
  - Hospitals: one positive study

  - (Other factors seem more important)

The Literature On VBP: Results by Topic

- Preventive care (7 studies, 9 dependent variables)
  - 5 positive (3 immunizations, 1 well-child, 1 tobacco screening)
  - 4 negative (1 cancer screening, 1 well-child, 1 immunizations, 1 tobacco cessation)
- Chronic care: one positive study
- Acute care: one positive study

The Literature On VBP: Results by Topic

- Patient factors:
  - Goals likely to encounter fewer patient barriers (immunizations, asking about smoking): mostly positive
  - Goals that required modest patient cooperation (e.g., well child visits and cancer screening): mixed
  - Goals that require significant patient cooperation (e.g., smoking cessation): negative

The Literature On VBP: Topics NOT! Covered

- For determining revenue potential: % of providers' income from study patients
- The direct, opportunity costs of complying (or not)
- Most potentially predisposing factors, such as:
  - general mix of reimbursement providers faced (e.g., % FFS vs. % capitation, number of other incentive programs offered)
  - individual characteristics of the provider
- Organizational enabling/inhibiting factors

The Literature On VBP: Summary

- Fairly difficult to interpret and generalize

- However, some factors identified in the conceptual model do seem to matter
  - Revenue potential (and certainty of gain)
  - Costs and difficulty of meeting goals
  - Enabling/inhibiting factors at the patient level

The Literature On VBP: Summary

- Other potentially important factors have not been studied
  - Predisposing factors (general financial incentive environment, physician factors)
  - Specific of costs and difficulty of meeting goals
  - Enabling/inhibiting factors at the organizational level

The Literature On VBP: Summary

- Non-financial incentives, esp. public reports, seem as worthy of further consideration as financial incentives
  - Caveat: provider interviews suggest that, without subsequent use of payment incentives, the response to public reports may wane; the positive studies reported here measured short term responses
  - (Mehrotra et al, Health Affairs, 2003; 22(2):60)

- Even these tepid conclusions reflect our judgment and extrapolation, to some extent

The Literature On Financial Incentives: Summary

- Repeat for emphasis:
  - There has been *no research* on the impact of organizational factors
  - Why this is so important: Much of the priority setting for providers and most investments to improve come from the organization

Reasons for Optimism about VBP and VBP Research

- The system environment and physician expectations are changing
  - Using incentives to encourage quality (and measuring quality) was unacceptable a few years ago; resistance seems lower now
  - Information systems are still crude, but becoming better
- You'll hear in subsequent talks about some ongoing research

Summary

- Literature on VBP is weak and incomplete
- This reflects the historical difficulty of initiating projects…but it's now easier and interesting studies are ongoing

Summary

- From every other business arena, we know incentives work
- Three missing ingredients before today:
  - Political will
  - A conceptual model to guide users to look for opportunities and pitfalls (test the one you saw today)
  - A wide variety of valid performance indicators