

# Challenges with Integrating Data-Driven Approaches to Reemployment Service Delivery

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Scott Gibbons

[gibbons.scott.m@dol.gov](mailto:gibbons.scott.m@dol.gov)

+1 202 693 5075

Chief Evaluation Office / Analytics Team

United States Department Of Labor

# Presentation Outline

- **Very Brief History of Worker Profiling in the US**
- Evidence Framework for Profiling
- Key Implementation Challenges to Profiling
  - Challenges with the Fundamental Program Design
  - Challenges with Program Changes
  - Challenges with the Profiling Process
  - Challenges with rigorous measurement of program impacts.

# Brief History: Worker Profiling in U.S.

- Law passed in [1993](#) requiring activity
- Modeled on Job Search Assistance Demos and a “profiling” model built for Maryland.
- Models built 1994-1998, considerable variation in form, content, accuracy
- Great degree of experimentation with models
- Great degree of variation in the services
- **No substantive changes** in program until 2016

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# Evidence Framework for Profiling

- Early and ongoing research of worker profiling
  - Profiling models among US states ([link](#))
  - Reemployment Service Impacts ([link](#)) & ([link](#))
  - Evaluation of broader profiling systems ([link](#))
- A number of studies looking at profiling-like systems have shown positive impacts
  - [Nevada REA](#)
  - Front Line Decision S

# Evidence Framework for Profiling

Note that not all of the evidence is favorable

- Highly varied impacts by state from programs during the great recession ([link](#))
- Mixed evidence from evaluations of workforce development programs
  - WIA Adult and Dislocated Worker ([link](#)) & ([link](#))
  - Veterans ([link](#))

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# Context for Presentation

- Worker Profiling is well established in the US, but not well accepted.
- Ironically, the largest challenge we experience is developing buy-in with front line staff
  - Low receptivity to the concept of the program
    - Don't want to be told who to serve, how to serve
  - Low willingness to serve people involuntarily
  - Very low willingness to take adversarial action
- Presentation describes challenges, and offers some promising practices

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# Recent Audits

- Government Accountability Office 2007
- [Report](#), [Highlights](#), [Executive Summary](#)
- Findings:
  - “Many states have not regularly maintained their models”
  - “only 1 of the 7 states (studied in depth) provided individualized needs assessments, and developed service plans, as recommended”
  - “Little is known about the effectiveness of the worker-profiling initiative as it is currently operating”
  - “some of the program data collected by Labor are not reliable, and the data are not being used by Labor or states to evaluate the initiative”
- A current audit (2018 in draft) has the same findings

# Is the Fundamental Idea Flawed?

[https://www.ssc.wisc.edu/~scholz/Teaching\\_742/Black\\_Smith\\_Berger\\_Noel.pdf](https://www.ssc.wisc.edu/~scholz/Teaching_742/Black_Smith_Berger_Noel.pdf), Section IV, paragraph 4, page 1325.

“Finally, the underlying assumption of the WPRS program is that those with the longest expected UI spell durations would benefit the most from the requirement that they participate in reemployment services in order to continue receiving their UI benefits. It is also assumed that treating these claimants will result in the largest budgetary savings for state UI systems. Our results provide little justification for either assumption, as we do not find a monotone relationship between the profiling score and the impact of treatment. If the goal of profiling is to allocate the treatment to those claimants with the largest expected impact from it, or to save the state UI system the most money, then our findings call into question the wisdom of using the expected benefit duration as a means of allocating treatment. They also suggest the value of further thought and study before extending profiling to other programs.”

The American Economic Review, Vol. 93, No. 4 (Sep., 2003), pp. 1313-1327

# REA: Innovating the Service Model

- Grants to ~42 states (2005-2016) to provide:
  - Services for people within profiling scores ranges
  - Eligibility review (enforcement of work search)
  - Expected impacts from threat, enforcement, service
- States could choose the range of scores to serve
- States could align activity to characteristics
  - Most recent implementation study and extended background/literature review ([link](#))
  - Multiple impact studies, some with very good results
- In 2016, REA became the profiling service model

# Profiling Scores

**LOW**

**HIGH**

Minimal Barriers to  
Reemployment

Significant and  
Complex Barriers to  
Reemployment

WPRS  
Services

# Profiling Scores

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**HIGH**

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Significant and Complex Barriers to Reemployment

REA Service Region (3)

REA Service Region (2)

REA Service Region (1)

WPRS Services

Compliance and enforcement, nudge to those who are more work ready

Combination of compliance, assessment and services

Extra Capacity for those with significant barriers to employment

# Recent Laws on Tiered Evidence

- With 2018, requirement for Tiered Evidence
  - <https://www.congress.gov/115/bills/hr1892/BILLS-115hr1892enr.pdf>,
  - page 65, section 306 (2)(A): “for fiscal years 2023 and 2024, use no less than 25 percent of the grant funds awarded to the State under this section for **interventions with a high or moderate causal evidence rating that show a demonstrated capacity to improve employment and earnings outcomes** for program participants;
  - For later years, a higher proportion of evidence-based service delivery methods must be used.

# Future Evidence on Service Model

- Current evaluation of the REA program
  - ~300k randomized across range of profile scores
  - Getting inside the black box, not just does it work but what parts of it work, why does it work
  - Highly precise estimates of impact from referral, service, enforcement, across broad populations
  - **NOTE: Will include specific analysis of who benefits most, characteristics and profiling scores**
  - Implementation study [published](#)
  - Final Report in Spring of 2019, [CEO web page](#)

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    - **Data Quality**
    - **Building Support for Profiling,**
    - **Making optimal Use of data**
  - Challenges with rigorous measurement of program impacts.

# Overcoming Data Quality Issues

- Practically a universal problem
  - Omitted variable bias, high false positives and false negatives, inability to assess performance
- Suggestions (focus on improving support)
  - Identify projects (i.e. fraud identification) that require good data and elicit better cooperation
  - Use the data generated by the programs regardless of data quality to incentivize quality
  - Provide tools to support front line staff such as occupational coding support systems:  
[Example 1](#), [Example 2](#)

# Building Support for Model Outputs

- Build trust relationships, communicate
- Utilize feedback loops, solicit observations from staff who see results of predictions
- Report model performance where it matters
- When modifying models, make tables showing who is likely to be referred, discuss with staff, make sure there are suitable services
- Provide plain and clear explanations to front line staff of what factors the model uses so they can explain it in non-technical ways

# Technical Issues in Profiling

- Statistical mods are easy, IT mods are hard.
  - Coefficients in lookup table, add placeholders for variables you may use later to programming.
- Use open source software
  - We favor R for capability, transparency, repeatability
- Pick the right time period
  - Models encapsulate prior trends and patterns
  - Rebuilding models at economic inflection points
- Use interaction variables, build model on multiple years of data, use out of sample validation
- Monitor forecast performance once implemented due to upstream/downstream dependencies

# Optimizing Use of Data

- Using exogenous variables in models
  - Industry: drop categorical, use industry growth rate
  - Occupation: drop categorical, use employment projections or ratio of worker wage to median wage
- Identifying clear, logical relationships
  - Strong proxies for job search (wage replacement rate)
- Using data to optimize treatment decisions
  - Find variables to categorize profiling scores and map to optimize services and personal characteristics

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**HIGH**

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Significant and  
Complex Barriers to  
Reemployment

REA Service  
Region

WPRS  
Services



Eligibility Review  
(Enforcement and Compliance)

Light REA Services

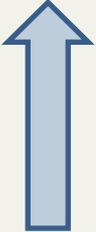
WPRS Services

Assessment

Heavy REA Services

Labor Exchange  
(Job Referral)

Self Directed Services



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