Hitchhiker's Guide to System Comparative Effectiveness: Planning Mental Health System Reform and Reforming Mental Health System Planning

"Hitchhiker's Guide" because this presentation is based on ideas about mental health planning and system comparative effectiveness of some very smart people.

Hitchhiker's Guide to System Comparative Effectiveness: Planning Mental Health System Reform and Reforming Mental Health System Planning **:** "Hitchhiking" with Forward Thinking Researchers

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Disclosure of Interest: Dr. Leff is the developer of mental health operations research models which he implements in states, counties, and localities.

If we can see into the universe 12-14 billion years ago, we can see into mental health systems today. But it requires commitment to using new methods and “leaving no data behind.”

The northern Hubble Deep Field (12-14 Billion Years Ago), (For more information, look on the Web at http://www.stsci.edu/ftp/science/hdf/hdf.html.)

Understanding mental health systems requires using data base and data synthesis technologies to bring together different types of data from clinical trials, quasi-experiments, administrative data sets, and expert judgment. It is like “herding cats.”

From EDS super bowl commercial

How Clinical Trials Data Can Be Analyzed To Better Support Mental Health System Reform Planning And Systems Comparative Effectiveness Research: Transitions Between Health States

To implement operations research methods for public mental health system reform we will need clinical trial outcomes expressed as transition probabilities between mental health states and linked to treatment heterogeneity.

Hargreaves, W. A. (1986). "Theory of psychiatric treatment systems. An approach." Arch Gen Psychiatry 43(7): 701-705.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=3718171

Transition Probability Matrix for First-Order Markov Analysis of Life-Course Data From 286 Severely Mentally Disabled Residents in One Catchment Area

Previous State*	Following State 1-30	31-35	36-40	41-45	46-50	51-80	Out	Sample Size
Entry	402	164	150	105	091	087	NA	286
1-30	624	118	050	019	007	005	178	1684
31-35	099	624	129	037	003	021	106	1467
36-40	043	067	648	148	018	002	1075	1731
41-45	017	019	069	734	111	013	1037	2222
46-50	013	007	015	075	747	090	1054	1831
51-80	007	009	007	014	050	865	049	2041
Out	059	031	026	014	011	011	848	3797
Step 70	101	090	106	133	108	120	342	

*The states are defined by ranges of Global Assessment Scale scores, except for the states of "entry" and "out."

"[Outcomes expressed as transition probabilities between mental health states] allow one to make objective long-term health policy decisions by balancing treatment effectiveness against societal costs on a quantitative basis." … at least three reasons why this "provides distinct advantages over traditional univariate approaches to analyzing data for complex diseases such as schizophrenia."

1. **A convenient framework for performing longitudinal analyses.** One can estimate the long-run fraction of people in each health state in addition to the cross-sectional distributions of patients during the study period…
2. **Partitioning of the population** into health states **leads to a more richly informative analysis of the differences between populations than simply examining mean differences**…
3. **Stationary distributions can be combined with a wide variety of outcome variables such as costs or QALYS,** to calculate long-run financial or utility differences between populations...

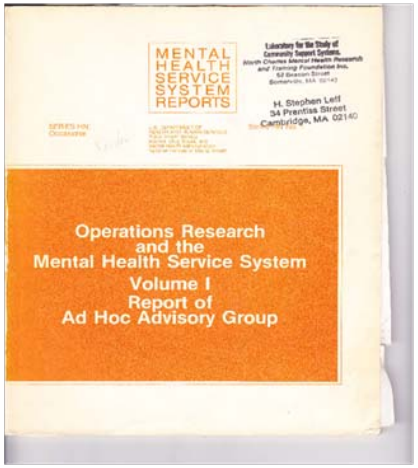
James, G. M., C. A. Sugar, et al. (2006). "A comparison of outcomes among patients with schizophrenia in two mental health systems: A health state approach." Schizophrenia Research 86(1): 309-320.
http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=16806839

- Note by SL: the number of published studies with transition probability data for mental health systems has grown. In 1986, Hargreaves was the only one of which I was aware. Currently, we are attempting a meta-analysis of studies expressing mental health outcomes as transition probabilities. We have identified 20-30 candidate studies, the James (2006) being an example. If you know of any unpublished analyses or reports that might be helpful to us, we would appreciate hearing about them. Please email: sleff@hsri.org.

In Addition To Acquiring Different Types Of Data Planning Mental Health System Reform Requires Theory and Culture Change

"To forecast, plan, implement, and manage public mental health systems under reform we need pragmatic theory of how "treatment systems interact with the life course of persons."

- To optimize treatment system effectiveness within available resources, we need some logical tools to help us calculate the implications of the knowledge gained from clinical trials.
- This logic should also tell us which of our gaps in knowledge are the most important to fill.
- This requires a theory of the way treatment systems interact with the life course of persons in major target groups. ***To be useful, such a theory of mental health services must be sufficiently detailed and valid to forecast an array of impacts of proposed system changes. Such theory would be a stimulus and guide to research, as well as a tool for program management. …***
- "The methods sometimes recommended for theoretical work on treatment systems are a group of ***simulation and optimization techniques widely used in operations research in industry***…"
- In the 80's NIMH supported work in this area. With a few exceptions, in mental health support for these approaches has not continued.



Hargreaves, W. A. (1986). "Theory of psychiatric treatment systems. An approach." Arch Gen Psychiatry 43(7): 701-705.

Public mental health system reform requires forecasting and planning for how systems will change as consumers and services change. Typically, you can't change the shape of one piece of a puzzle without altering the shape of others.

- If [a] "system" [reflected] the substitution of one treatment for another as … in a cost-effectiveness study, it would behave in a fashion described in the cost-effectiveness analysis.
- But systems typically do not work like this. When a new treatment option is added, many actors will reconsider their decisions, and the overall value of spending in the system will be altered in ways that a cost-effectiveness analysis cannot foretell.

Frank, R. G., T. G. McGuire, et al. (1999). "The value of mental health care at the system level: the case of treating depression." Health Aff 18(5): 71-88.
http://content.healthaffairs.org/cgi/content/abstract/18/5/71

So since the 1980s we have known that mental health system reform would benefit from mental health system theory, forecasting tools (particularly operations research models) and data that allow for estimating system comparative effectiveness. However, mental health planning efforts typically have not moved in this direction.

Pirkis et al. study:

- **In total, 32 current mental health plans were identified from 32 jurisdictions:**
- Australian states/territories
- New Zealand
- England (Department of Health, 1998, 1999, 2000)
- Canadian provinces
- **Nineteen US states (2002-2006)**

- Only four of the identified mental health plans cited **specific resource targets** regarding 'core' components. **None of the US plans** did.

- This situation would appear to be less than ideal… **Until [plans] begin to routinely set resource targets it is difficult to see how…mental health service reform can occur in a strategic manner**.

Pirkis, J., M. Harris, et al. (2007). "International Planning Directions for Provision of Mental Health Services." Administration and Policy in Mental Health and Mental Health Services Research 34(4): 377-387.
http://dx.doi.org/10.1007/s10488-007-0116-0

If There Were An FDA For Mental Health System Plans, It Would Find Very Few Safe And Effective

"The failure to adequately plan puts consumers and the public at risk. "The concept of community care and treatment and the corresponding attack on institutional care - all of which played significant policy roles during the last half century were not inherently defective…But states, communities, and policy advocates lacked the foresight or commitment to ensure [plan] adequate financing and to provide adequate services. …"

"To dismiss rhetoric and ideology [aspirational plans] as simply forms of public posturing is to ignore their consequences… Rhetoric and ideology [aspirational plans] shape agendas and debates; they create expectations that in turn mold policies; and they inform the socialization, training, and education of those in professional occupations."

Grob, G. N. (2008). "Mental health policy in the liberal state: The example of the United States." International Journal of Law and Psychiatry 31(2): 89-100.

- http://www.sciencedirect.com/science/article/B6V7W-4S1BX35-1/2/f8d7ad09428cbfa2505207e3be52e428

So why don't we have more adequate mental health planning?

The lack is "related to contextual factors associated with political will and accountability. There is a clear risk for governments in identifying 'core' services and their associated resource targets, because it 'locks them in' to delivering services at a certain level and leaves them open to scrutiny by setting benchmarks against which they can be held accountable."

Pirkis, J., M. Harris, et al. (2007). "International Planning Directions for Provision of Mental Health Services." Administration and Policy in Mental Health and Mental Health Services Research 34(4): 377-387.
http://dx.doi.org/10.1007/s10488-007-0116-0

"Given the inherent difficulty of making significant improvements by the means usually provided and given the discrepancy between promise and possibility, most administrators wisely prefer [ambiguity]. Ambiguity, lack of truly comparable comparison bases, and lack of concrete evidence all work to increase the administrator's control over what gets said, or at least to reduce the bite of criticism in the case of actual failure. **There is safety under the cloak of ignorance…The public availability of such facts reduces the privacy and security of at least some administrators**."

Campbell, D. T. (1969). "Reforms as experiments." American Psychologist 24(4): 409-429.
http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1969-17253-001&site=ehost-live&scope=site

CONCLUSIONS:

So for mental health system policy and planning reform we need more than just more pragmatic data from clinical trials research. We need a culture of safe and effective mental health systems planning. To create this culture, we need:

- **Federal mental health agencies to return to supporting the development and use of operations research** forecasting and planning tools tailored to mental health system applications

- **The Federal Government, especially in its capacity as customer for State Mental Health Block Grant and other plans, to require accountable plans** that are not just "aspirational." These plans should be required to forecast and take into account resource needs for safe and effective reform

- **State, county, and local administrators and planners who are willing to be accountable and deliberative leaders** making plans that can be safely and effectively implemented. This means going beyond aspirational (sometimes referred to as "transformational") planning designed primarily to enlist stakeholder support

- **Deliberative planning methods for involving stakeholders** in even highly technical planning

- And, of course, **data, including and especially administrative data systems that support monitoring and managing plan implementation**.

And We Need Monitoring Systems To Track Whether Plan Implementation Is On Course And To Make Course Corrections And Changes When Necessary

The best-laid schemes o' mice an' men
Gang aft agley,
And lea'e us nought but grief an' pain
For promised joy!

Robert Burns

No battle plan ever survives contact with the enemy

Murphy's Military Law #2

Plans will go awry.

We need plans and data that can assist us in charting an initial course and making **course corrections** along the way: GPSs rather than compasses, maps, or blueprints.

Recalculating

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