

Modeling to Learn

Test. Don't guess.

Session 4: Combining Measurement Based Care and Stepped Care for Suicide Prevention



 **@LZPhD**

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Created by  VA Team
PSD
1

Team

Participatory System Dynamics

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This is session 4 of a four part series.

Date	Title	Focus
May 23, 2019 12noon Pacific/3PM Eastern	Putting it Together: Combining Measurement Based Stepped Care for Suicide Prevention	 mtl session 10 systems thinking

Learning Objectives: *Modeling to Learn* how to use systems thinking.

1. Describe the decisions the team experimented with and how they intertwine to influence patients' symptoms and risk.
2. Test your understanding of the "higher care quality improves recovery" system story by describing what's happening when the simulation produces a runaway increase or decrease.
3. Apply systems thinking to anticipate the long-term trend in this team's ability to reduce patients' symptoms and suicide risk.

Modeling to Learn



Test. Don't guess.

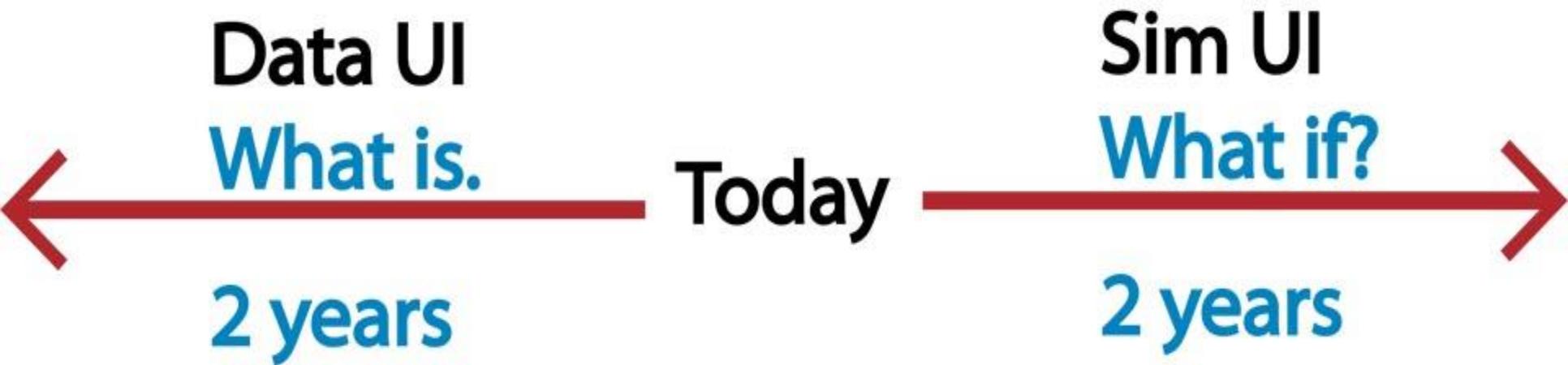
Virtual Facilitation

Transparent Local
Data

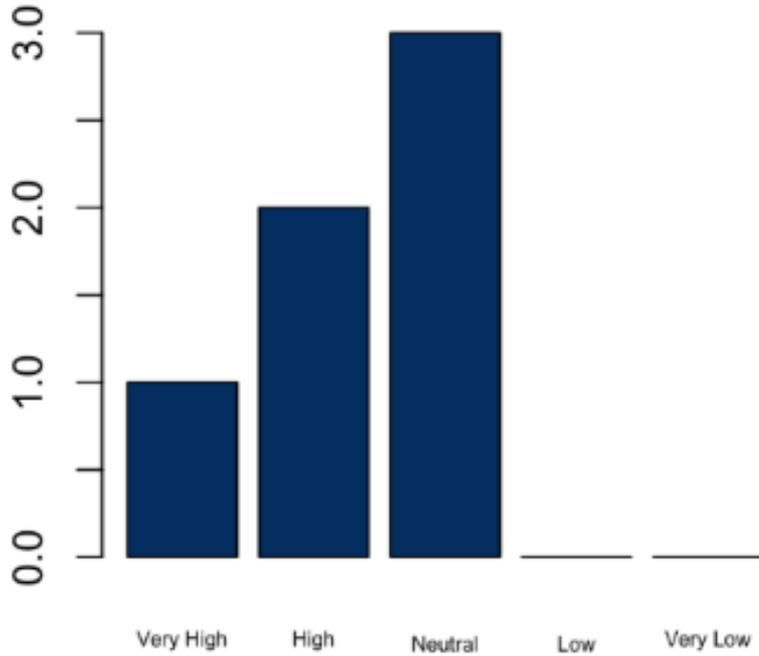
Real-time
Simulation

1. Equitable access to resources.
2. Mutual learning.
3. Shared decision-making.

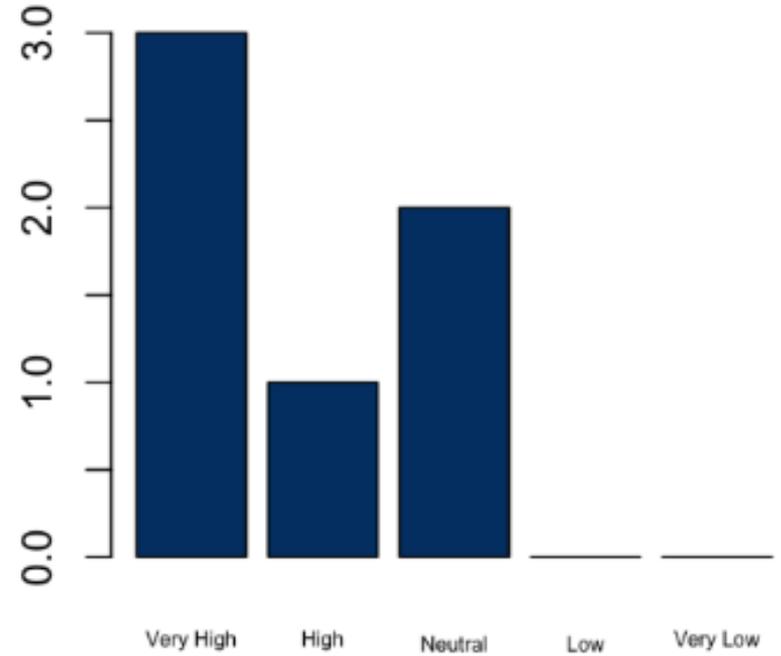
MTL resources help teams
look back two years
and look ahead two years.



Suicide Prevention - How to manage high risk patients.



Stepped Care - How to decide when to step patients up to specialty care.



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Session

Join Current Session

Suicide Prevention -- Week 104
583ge_wl_bhip2_2019_04_14.xlsx



Play

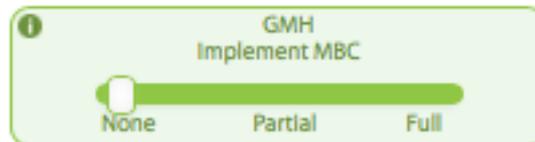
Start a New Session

- Care Coordination
- Medication Management
- Psychotherapy
- Aggregate
- Suicide Prevention

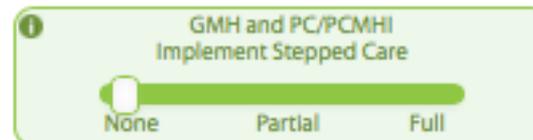
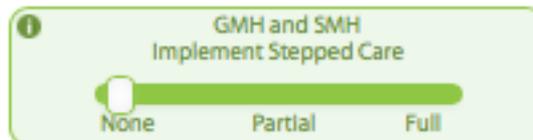
Conduct a combined experiment to reduce patient symptoms and wait times.

Will implementing both measurement-based care and stepped care address risks associated with either alone?

GMH Measurement Based Care



General Mental Health Stepped Care



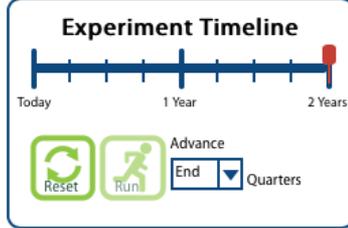
Findings from last session:

- Measurement Based Care (MBC) improved patients' symptoms and risk, but reduced new care episode starts.
- Stepped care (SC) started more GMH care episodes, but didn't improve patients' symptoms and risk.



Measurement Based Stepped Care for Suicide Prevention
This model shows the effects of measurement based stepped care on patients' symptoms and risk. It allows you to explore the impacts of implementing measurement based care to reduce delays in detecting patients at high risk for suicide, and to improve the quality of care by making better team decisions about when to step patients up to a higher level of care, or step them down to a lower level of care. It is also possible to experiment with team decisions related to new patient wait-times and access, the use of community care, and the impacts of provider overwork and burnout on the quality of care.

Our Question
Briefly describe what your team wants to learn from this experiment.
Does implementing Stepped Care (SC) improve care quality without increases in wait times for GMH care and for stepping down from GMH to PC/PCMHI?



Our Hypothesis
Outline the systems story your team believes will cause the outcomes your team expects to observe.
If we implement Stepped Care (SC) between GMH and PC/PCMHI, then it will reduce care transfer confusion and care delays, resulting in more patients being stepped between those settings faster. GMH should have more openings for new care episodes.

Our Findings
Describe your team's findings, insights and conclusions from this experiment.
GMH starts more new care episodes, but the ratio of high to low symptom patients increases, and patients w/high risk flags stay the same. Rates of patients stepping between our two settings increases, but step down wait times from GMH to PC increase.

Our Decisions
Based on what was learned in this experiment, what changes is the team ready to make in their practice?
Measurement Based Care improved patients' symptoms and risk, but reduced new care episode starts. SC started more GMH care episodes, but didn't improve patients' symptoms and risk. Explore what will happen if we combine MBC and SC between GMH and PC/PCMHI.

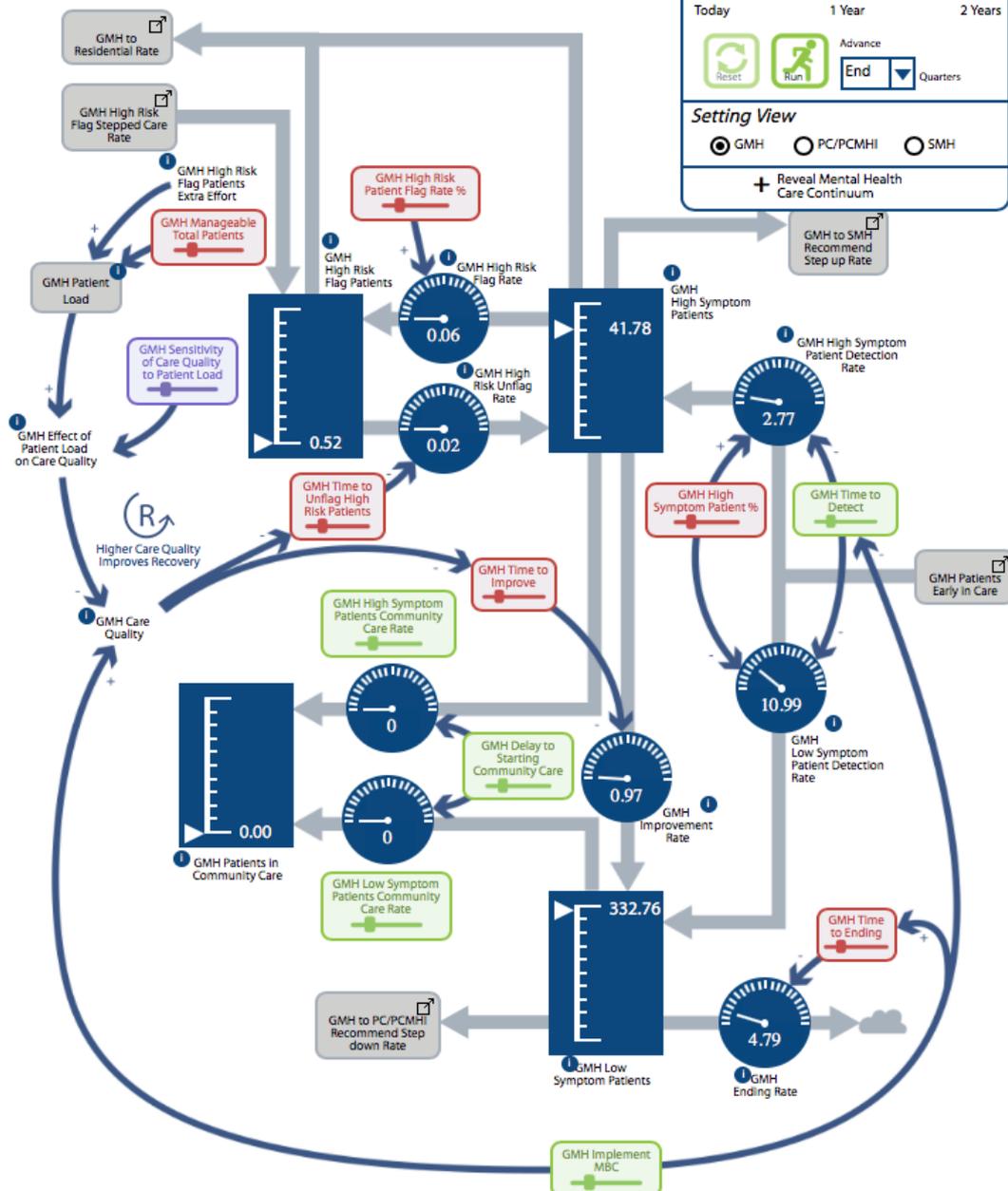
MTL focuses on improving systems thinking among frontline teams making care decisions.

Systems Thinking	Definition
Complex	Forest not trees. Relationships among two or more variables (wait times, improvement rate), or two or more settings (primary care, general mental health).
Feedback	Loop not line. Not simple cause and effect. The end of the story often influences the beginning, and is strengthened (reinforcing) or reduced (balancing) around the loop.
System Behavior	
Time	Short <i>and</i> long term. Better understanding of change over time (e.g., worse before better, better before worse). ⁹

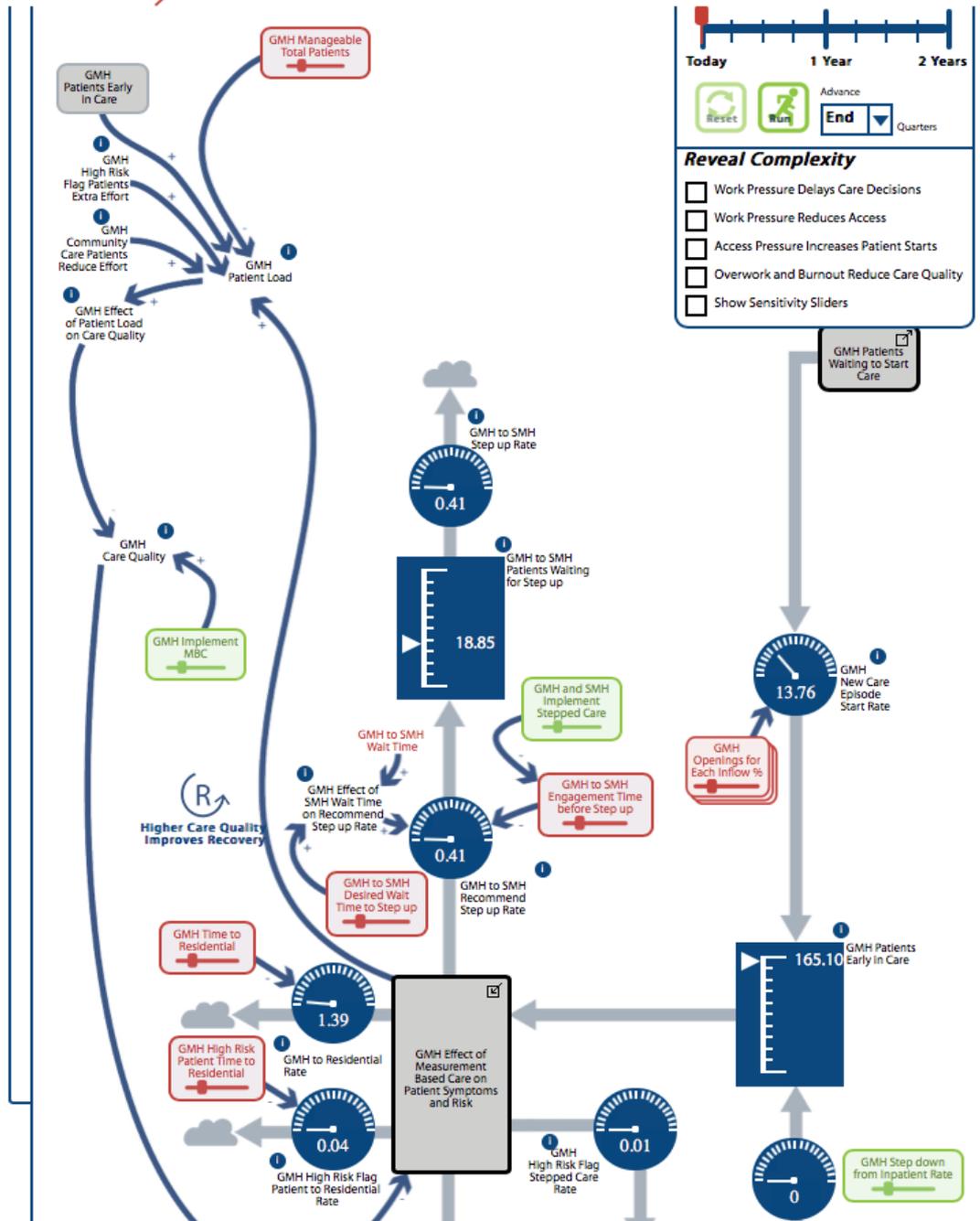
Higher Care Quality Improves Recovery: *why*

MBC reduced GMH patients' symptoms and suicide risk. (zoom in)

Effects of Measurement Based Stepped Care on Patients' Symptoms and Risk



Higher Care Quality Improves Recovery: *why* SC to address wait times is also needed. (zoom out)



Timeline: Today, 1 Year, 2 Years

Buttons: Reset, Run, Advance, End, Quarters

Reveal Complexity

- Work Pressure Delays Care Decisions
- Work Pressure Reduces Access
- Access Pressure Increases Patient Starts
- Overwork and Burnout Reduce Care Quality
- Show Sensitivity Sliders

Poll 1:

If we combine Measurement Based Care and Stepped Care, then will it most improve...

Select one.

- A. Patients waiting to start care
- B. Detecting changes in patients' symptoms
- C. Wait times to transfer patients' care across settings
- D. Managing our patient load
- E. Care for patients at high risk for suicide

Dynamic Hypothesis: Combining MBC and SC will...

- **MBC** reduce patients' symptoms and risk
- **SC** reduce wait times in GMH, and from GMH to SMH
- **COMBINED** will mitigate the *risks* of either alone.

 Table
  Save
  Copy
  Export

Measurement Based Stepped Care for Suicide Prevention

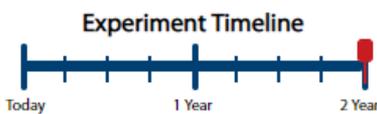
This model shows the effects of measurement based stepped care on patients' symptoms and risk. It allows you to explore the impacts of implementing measurement based care to reduce delays in detecting patients at high risk for suicide, and to improve the quality of care by making better team decisions about when to step patients up to a higher level of care, or step them down to a lower level of care. It is also possible to experiment with team decisions related to new patient wait-times and access, the use of community care, and the impacts of provider overwork and burnout on the quality of care.

Our Question

Briefly describe what your team wants to learn from this experiment.

Does implementing BOTH measurement-based care and stepped care allow us to get more high symptom patients into the right care at the right time WITHOUT unintended high wait times for our patients to Primary Care?

Experiment Timeline



Today 1 Year 2 Years

 Reset
  Run
 Advance
 End

 Quarters

Our Hypothesis

Outline the systems story your team believes will cause the outcomes your team expects to observe.

If we more readily detect our patients symptoms AND reduce transfer delays, then we expect to improve care quality AND step more patients down to PC, kicking off a virtuous cycle of improved care quality leading to recovery.

Our Findings

Describe your team's findings, insights and conclusions from this experiment.

Our Decisions

Based on what was learned in this experiment, what changes is the team ready to make in their practice?

Pull up prior work to save time.



Outputs and Text

Experiments

Select Previous Experiment to Set Experimental Values to a Former State

Select Experiment Go

Team Data Table

Measurement Based C

Select Experiment

bc_2019_5_14

gpisc_F_2019_5_14

gim_F_2019_5_14

New Care Episode Start Rate (mean)(pts/wk)	8.34	0.67	0.17
New Patient Wait Time (median) (wks)	2	5	4



Outputs and Text

Experiments

Select Previous Experiment to Set Experimental Values to a Former State

Review Previous Settings

gim_F_2019_5_14 Go

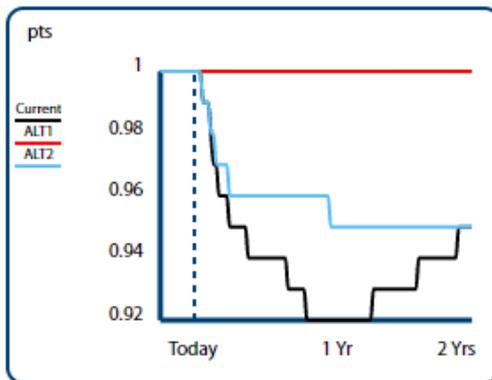
Include text from this session in Expanded Outputs text fields?

Experimental Values

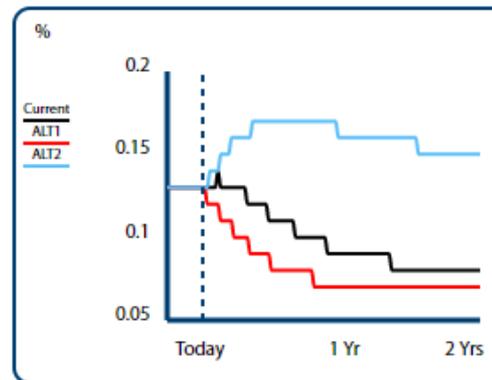
0	GMH Manageable Total Patients
BC	GMH Recommend New Care Episode Rate
Full	GMH Implement MBC
BC	GMH Time to Detect
0	GMH Low Symptom Patients Community Care Rate

What if we combine Measurement Based Care and Stepped Care?

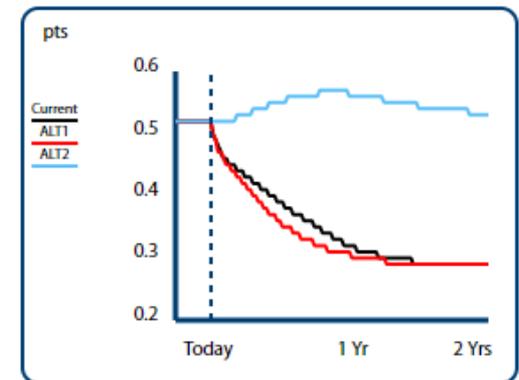
vs implementing each one individually



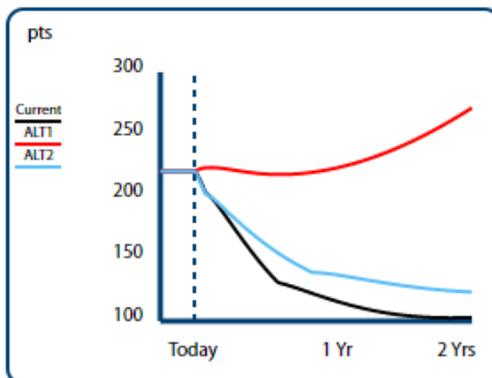
▼ GMH Patient Load



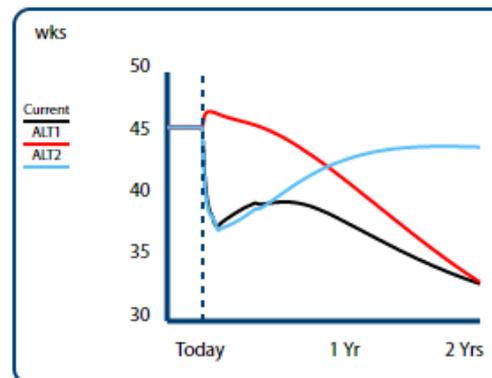
▼ GMH Ratio of High to Low Sympto...



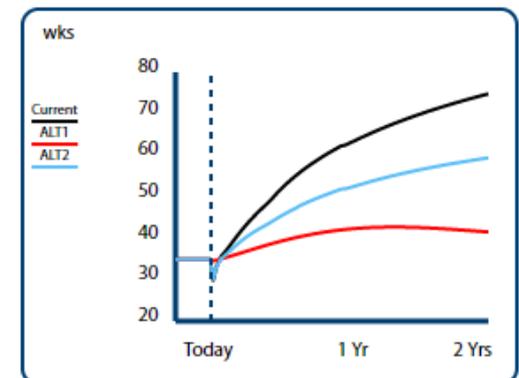
▼ GMH High Risk Flag Patients



▼ GMH Patients Waiting to Start



▼ GMH to SMH Wait Time for Step up



▼ GMH to PC/PCMHI Wait Time to St...

Decisions:

We should implement MBC *and* SC with Primary Care.

Because **higher quality improves recovery**, when we...

1. reduce patients' symptoms and risk, *and*
2. get patients to the right level of care at the right time.

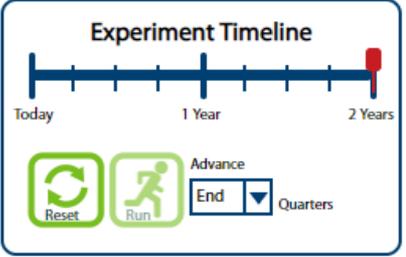


Measurement Based Stepped Care for Suicide Prevention

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Our Question *Briefly describe what your team wants to learn from this experiment.*

Does implementing BOTH measurement-based care and stepped care allow us to get more high symptom patients into the right care at the right time WITHOUT unintended| high wait times for our patients to Primary Care?



Our Hypothesis *Outline the systems story your team believes will cause the outcomes your team expects to observe.*

If we more readily detect our patients symptoms AND reduce transfer delays, then we expect to improve care quality AND step more patients down to PC, kicking off a virtuous cycle of improved care quality leading to recovery.

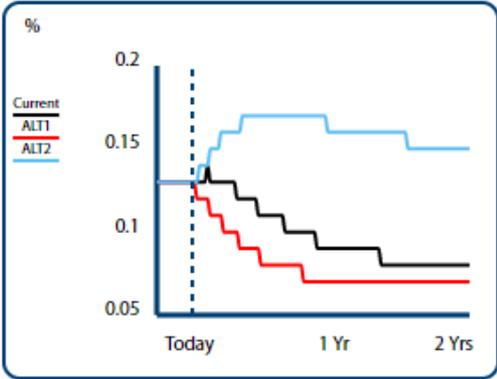
Our Findings *Describe your team's findings, insights and conclusions from this experiment.*

We cut wait times to SMH immediately AND reduced the ratio of high symptom patients in care, all without increasing wait times for our team. We achieved the largest drop in patient load and patients waiting for GMH.

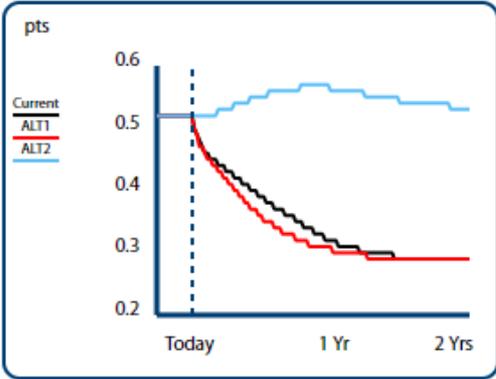
Our Decisions *Based on what was learned in this experiment, what changes is the team ready to make in their practice?*

All our experiments have improved quality and increased wait times to PC. We will show Primary Care our findings and use this knowledge together to work with leadership to address this unintended consequence.

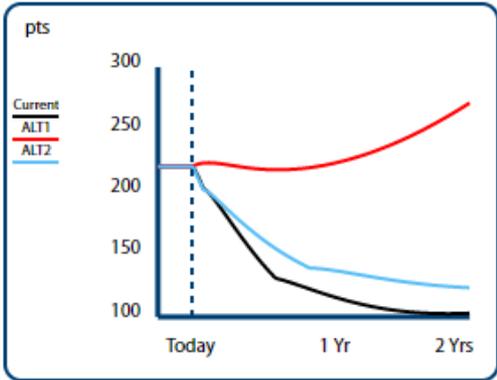
Only the combination of MBC and SC increases patients getting better and reduces GMH and SMH wait times.



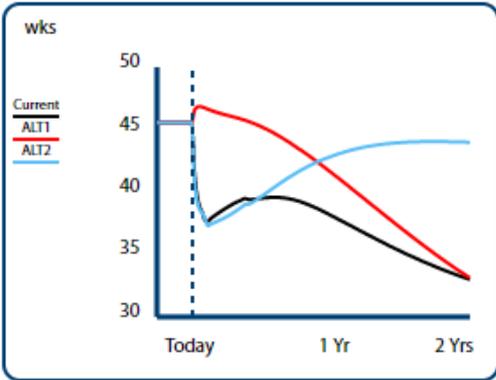
▼ GMH Ratio of High to Low Sympto...



▼ GMH High Risk Flag Patients

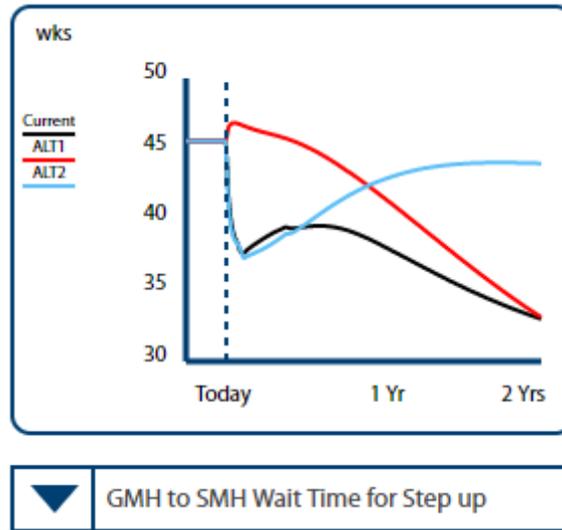


▼ GMH Patients Waiting to Start



▼ GMH to SMH Wait Time for Step up

Implementing MBC alone, or SC alone, is not effective for getting local patients to the right treatment at the right time.



MBC

Without improvement for more than 6 months, we may lose faith and abandon the change.

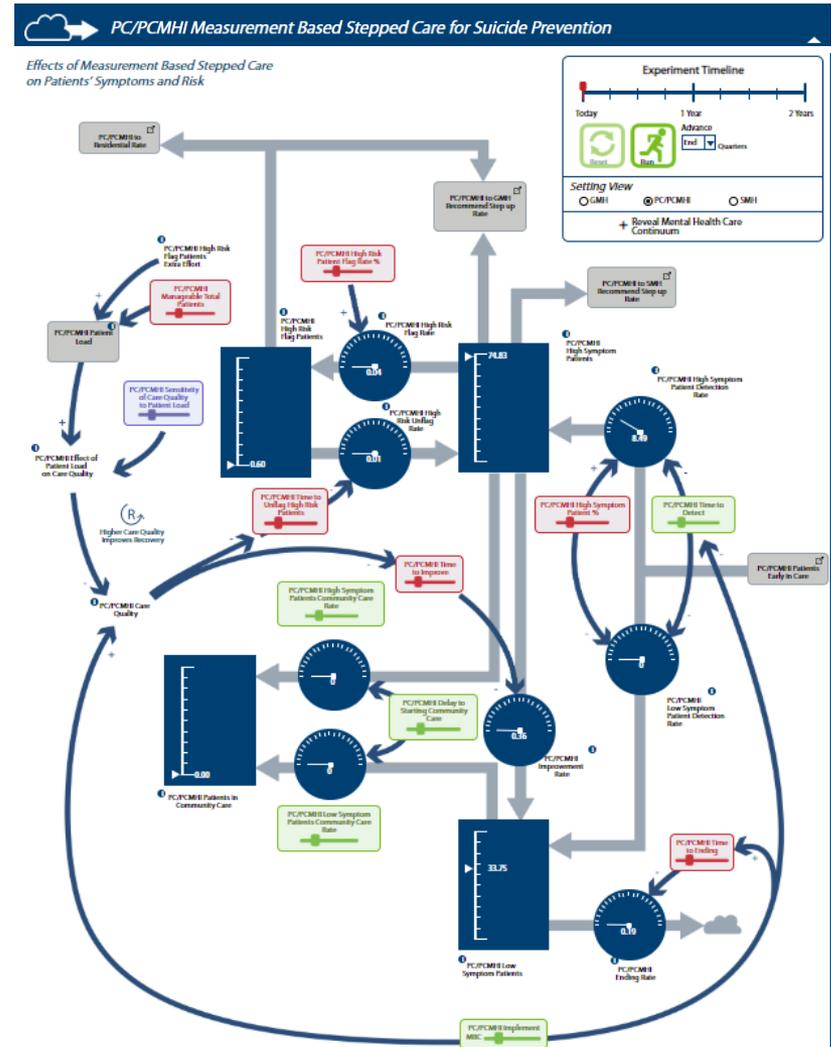
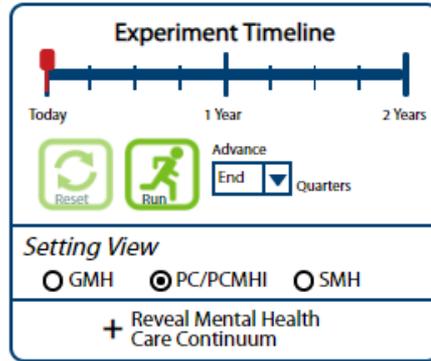
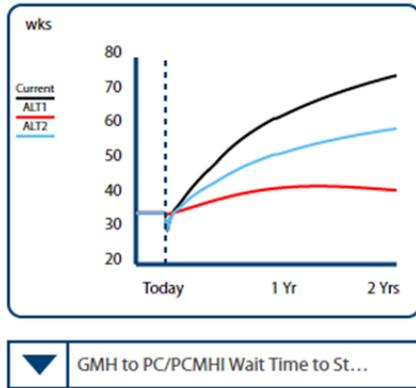
SC

We see immediate improvement, but then we slowly go back to business-as-usual in two years.

COMBINED

"Virtuous Cycle" - We see immediate improvement in wait times, that continue to get better over the next two years.

"Vicious Cycle"- wait-times keep growing for primary care, due to increased patient load, an unintended effect of improving general mental health care quality.



COMBINED

1. GMH to PC/PCMHI wait times increase as GMH patients get better and are stepped down to Primary Care.
2. Toggle to PC/PCMHI to see it has the same **Higher Care Quality Improves Recovery** feedback.
3. PC/PCMHI has made no new decision to implement MBC in their setting....

Use Modeling to Learn in partnership with Primary Care:

PC, like the other settings, has many options for working with the **Higher Care Quality Improves Recovery** systems story.

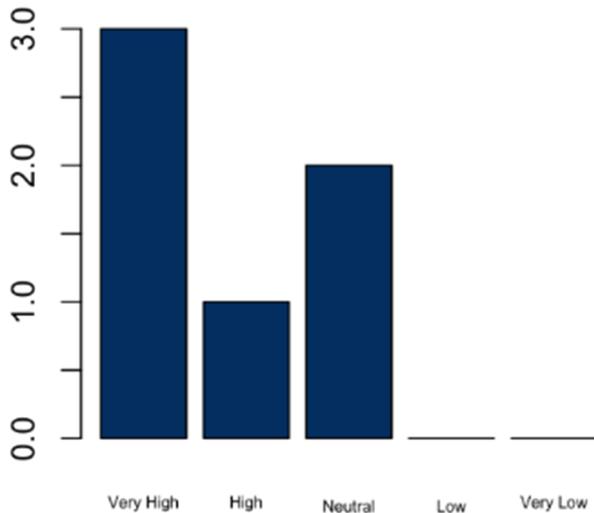
Experiments

The experiment interface contains 20 sliders, each with an information icon (i) and a refresh icon (BC). The sliders are as follows:

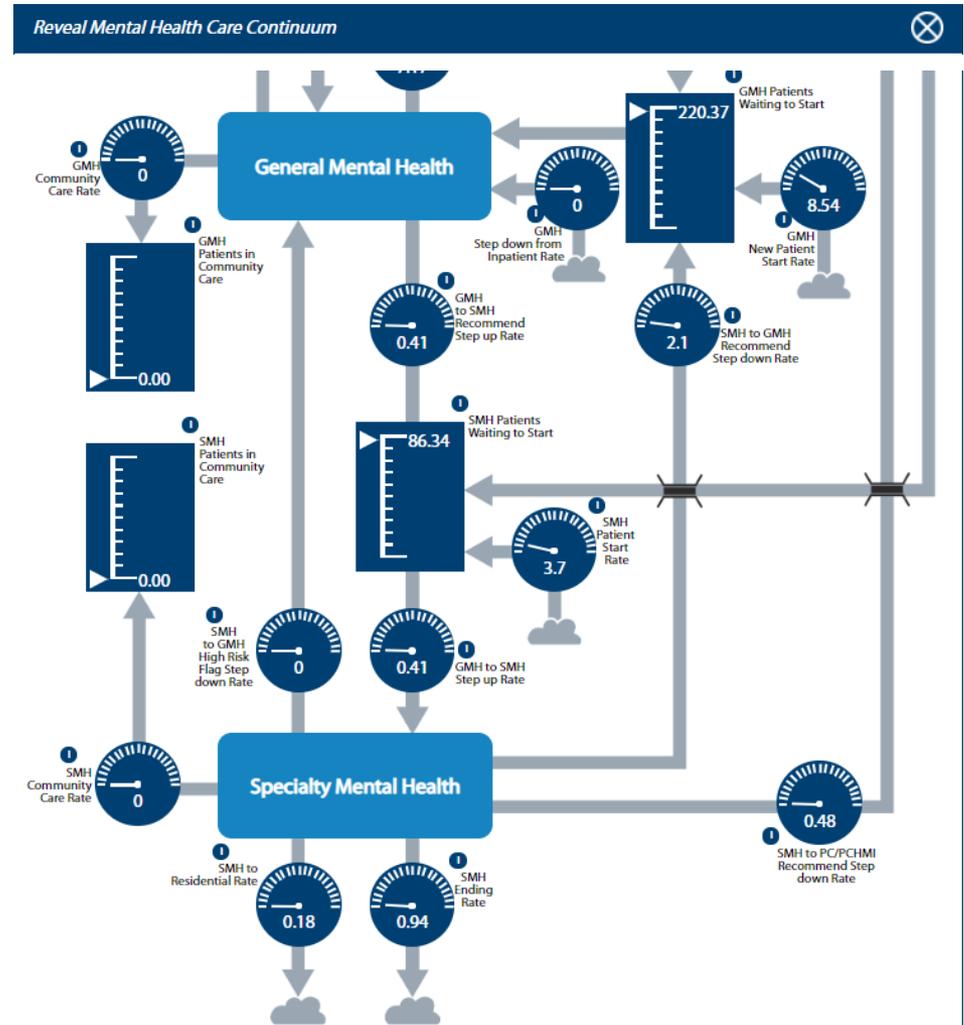
- PC/PCMHI Manageable Total Patients:** Slider from -8000 to 8000, +/- pts. Value: 0.
- PC/PCMHI Low Symptom Patients Community Care Rate:** Slider from 0 to 200 pts/wk. Value: 0.
- PC/PCMHI High Symptom Patients Community Care Rate:** Slider from 0 to 200 pts/wk. Value: 0.
- PC/PCMHI Delay to Starting Community Care:** Slider from 0 to 36 wks. Value: 0.
- PC/PCMHI Step down from Inpatient Rate:** Slider from 0 to 20 pts/wk. Value: 0.
- PC/PCMHI Time to Improve:** Slider from BC to 104 wks. Value: 1.
- PC/PCMHI Time to Ending:** Slider from BC to 104 wks. Value: 1.
- PC/PCMHI Time to Unflag High Risk Patients:** Slider from BC to 104 wks. Value: 1.
- PC/PCMHI High Risk Patient Flag Rate %:** Slider from BC to 1 %/wk. Value: 0.
- PC/PCMHI High Symptom Patient %:** Slider from BC to 100%. Value: 0%.
- PC/PCMHI to SMH Desired Wait Time to Step up:** Slider from BC to 36 wks. Value: 1.
- PC/PCMHI to GMH Desired Wait Time to Step up:** Slider from BC to 104 wks. Value: 1.
- PC/PCMHI to SMH Engagement Time before Step up:** Slider from BC to 104 wks. Value: 1.
- PC/PCMHI to GMH Engagement Time before Step up:** Slider from BC to 104 wks. Value: 1.
- PC/PCMHI Time to Residential:** Slider from BC to 104 wks. Value: 1.
- PC/PCMHI Desired Wait Time:** Slider from BC to 36 wks. Value: 1.
- PC/PCMHI Openings for New Care Episodes %:** Slider from BC to 100%. Value: 0%.
- PC/PCMHI Openings for New Care Episodes from PC/PCMHI %:** Slider from BC to 100%. Value: 0%.
- PC/PCMHI Openings for New Care Episode from SMH %:** Slider from BC to 100%. Value: 0%.

Counterintuitive fix for team's need to reduce long GMH -> SMH wait times: Improve GMH care quality via MBC and coordinate SC with PC (not SMH).

Stepped Care - How to decide when to step patients up to specialty care.

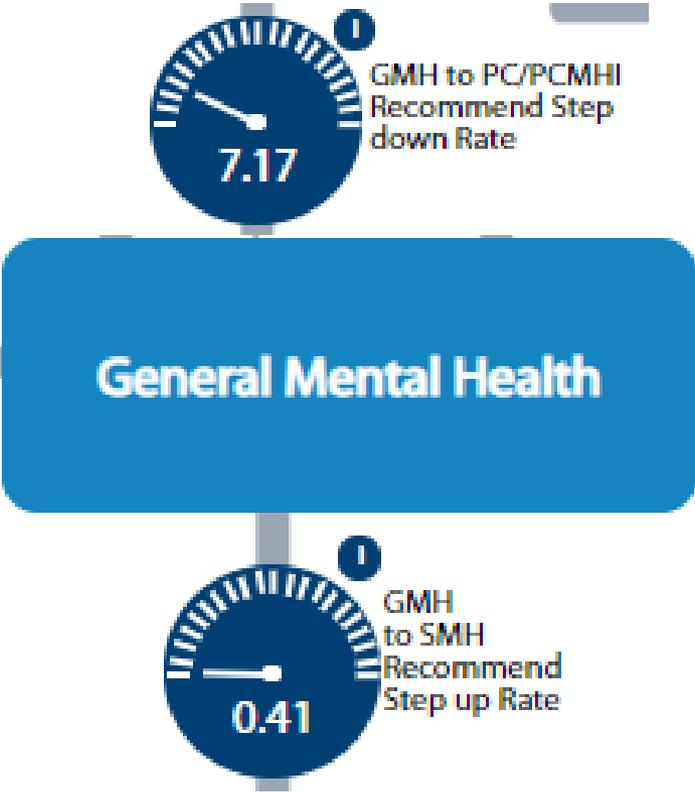


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Coordinating stepped care *with PC* (not SMH) will have a stronger effect because there more patients.

This is because the GMH to PC/PCMHI Recommend Step down Rate is higher than the GMH to SMH Recommend Step up Rate (patients/week).



MTL focuses on improving systems thinking among frontline teams making care decisions.

Systems Thinking	Definition
Complex	Forest not trees. Only the combination of MBC and SC increases patients getting better and reduces wait times.
Feedback	Loop not line. Increased wait-times for primary care, due to increased patient load is an unintended consequence of improving general mental health care quality.
System Behavior	Movie not snapshot. Counterintuitive fix long GMH->SMH wait times: Improve GMH care quality via measurement based care and coordinate stepped care <i>with PC</i> (not SMH).
Time	Short <i>and</i> long term. With delayed improvement we may lose faith. Immediate improvements may not be sustained.

Our GMH team's data for High Risk Flag Rates and Symptom Proportions:



Lindsey Zimmerman



HOME



PLAY



CHAT



HELP



LOGOFF



Lindsey Zimmerman

Outputs and Text

Experiments

Select Previous Experiment to Set Experimental Values to a Former State



Select Experiment

Go

Team Data Table

Measurement Based Care

	GMH	PC/PCMHI	SMH
New Care Episode Start Rate (mean)(pts/wk)	8.54	0.67	0.17
New Patient Wait Time (median) (wks)	2	5	4
High Risk Patient Flag Rates (mean)(pts/wk)	0.06	0.04	0.06
Time to Unflag High Risk patients (median)(wks)	24.14	43.57	22
Engagement Time before Ending (median)(wks)	81.43	204.86	68.64
Symptom Proportions (High Symptom %)	0.11	0.69	0.15
Time to Improve (wks)	43	32	28

Stepped Care

A different team in our GMH setting, with more acute patients, stepping up/down to the same SMH and PC settings.

Select Previous Experiment to Set Experimental Values to a Former State



Select Experiment

Go

Team Data Table

Measurement Based Care

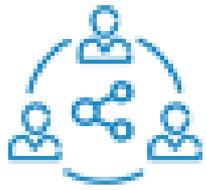
	GMH	PC/PCMHI	SMH
New Care Episode Start Rate (mean)(pts/wk)	8.54	0.67	0.17
New Patient Wait Time (median) (wks)	2	5	4
High Risk Patient Flag Rates (mean)(pts/wk)	0.23	0.04	0.06
Time to Unflag High Risk patients (median)(wks)	24.14	43.57	22
Engagement Time before Ending (median)(wks)	162.86	204.86	68.64
Symptom Proportions (High Symptom %)	0.45	0.69	0.15
Time to Improve (wks)	43	32	28

Poll 2

If a **New Team** from the same GMH setting with more acute patients ran this same combined MBC and SC experiment, then they would find that it would most improve...

Select one.

- A. Patients' symptoms and suicide risk will get better faster than in our original team.
- B. Patients' symptoms and suicide risk will get better slower than in our original team.
- C. Patients' symptoms and suicide risk will get worse faster than in our original team.
- D. Patients' symptoms and suicide risk will get worse slower than in our original team.
- E. Patients' symptoms and suicide risk will change in the same way across the two GMH teams over the next two years.²⁶



Our Hypothesis

Outline the systems story your team believes will cause the outcomes your team expects to observe.

If the **New Team** with

- more high symptom patients, and
- more high risk flag patients,

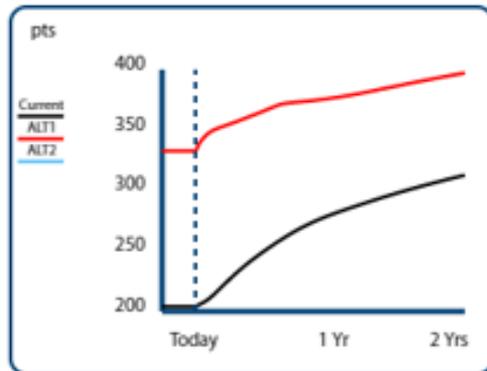
implements both MBC and SC combined...

then, it will lead to even greater benefits than

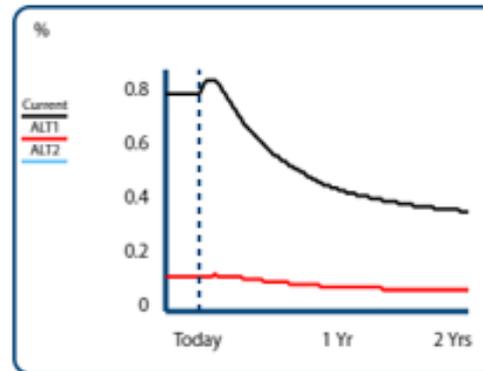
Our Original Team because...

the **Higher Care Quality Improves Recovery** story will apply to more patients in the **New Team**.

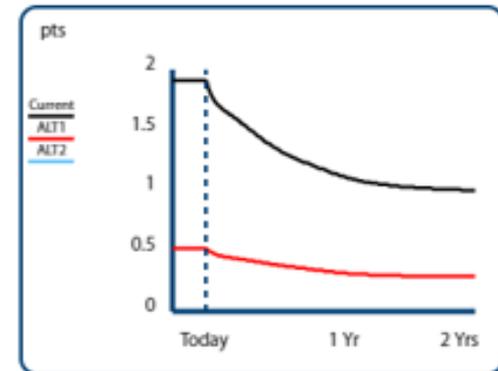
Comparing combined experiments across two different GMH teams in the same setting shows big differences in patients' symptoms and risk.



▼ GMH Low Symptom Patients



▼ GMH Ratio of High to Low Sympt...



▼ GMH High Risk Flag Patients

In our **New Team**, *from the same setting*, the GMH Ratio of High to Low Symptoms drops *faster* and the number High Risk Flag Patients is reduced more due implementing MBC and SC than in our **Original Team**.

Five ways to help improve *MTL* usefulness.

Email: **mtl.info@va.gov**

Subject line: **Learning**

1. *MTL* Live Team/Clinic
2. Pilot Review EES materials (e.g., Video, Guides)

Design

3. Data User Interface (mtl.how/data)
4. Simulation User Interface (mtl.how/demo)

Research

5. Advisory Board and other opportunities



Team

Participatory System Dynamics

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Georgia Health Policy Center

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Takouba LLC

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Thank you, Team PSD!

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MTL Resources and Help



Session guides, links, and cheatsheets.

Self-registration for simulation demo. *Course code: cybersem*



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National Center for PTSD, Dissemination & Training Division



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Office of Healthcare Transformation

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<https://www.hsrp.research.va.gov/cyberseminars/catalog-archive.cfm>

Modeling to Learn

Test. Don't guess.

[mtl.how/quick overview](https://mtl.how/quick%20overview)

You can review *Modeling to Learn* session guides at mtl.how

mtl

mtl.how

Session guides,
links, and
cheatsheets.

mtl1.7_models	Update README.md
mtl1.8_models	Update README.md
session01	Update README.md
session02	Update mtl_session02_see.md
session03	Update mtl_session03_see.md
session04	Add files via upload
session05	Update mtl_session05_see.md
session06	Update mtl_session06_see.md
session07	Update mtl_session07_see.md
session08	Update mtl_session08_see.md
session09	Update mtl_session09_see.md
session10	Update mtl_session10_see.md
session11	Update mtl_session11_see.md
session12	Add files via upload
LICENSE	Initial commit
README.md	Update README.md

Download 1-page *Modeling to Learn* Cheatsheets at mtl.how



Data UI Cheatsheet (Updated 2019_05_09)

Learning Objectives

Modeling to Learn

Test. Don't guess.

MTL objectives include activities and competencies that...

1. Are meaning for you and align your learning goals with your team.
2. Develop systems thinking skills to help you see how several things fit together, and understand causes hard to see without data and modeling resources.
3. Make VA data, initiatives, and standards transparent to you.
4. Empower you to realize ongoing improvements in team quality of care & work life.

Timesavers

1. Explore trends on SplashPage
2. Use most recent data ui file
3. Save a team_data_sim_ui file w/ preferred filters

Login: Open mtl.how/data from Internet Explorer. Select VSN & Facility

1. Click on facility # at top left for larger view of splashpage
2. Use arrows & funnels to filter by location, grids, etc.
3. Click on View dropdown to switch between different charts and tables

Note: Splashpages typically show 2 years of prior data, but if your facility is too large, it will only show 1 year.

Acronyms

AGG: Aggregate
 CC: Care Coordination
 Count: Aggregate Data for Viz
 Diag: Diagnostic data
 Data: Sortable report of data
 Enc: Encounter types of visits
 HF: Health Factors data of visits
 Meas: Measures or flag names
 MM: Medication Management
 MTL: Modeling to Learn
 PSD: Participatory System Dynamics
 PSY: Psychotherapy
 SP: Suicide Prevention
 UI: User Interface
 Viz: Visualization of trends

Data UI

- 1) Find data ui folder
- 2) Open most recent data ui file using Excel Workbook not web app.
- 3) Click on "Control" sheet. Choose 3 digit station # from dropdown. Click "Get Clinic List"

- 4) Choose grids by clinic names, location, etc. Click on arrow in Column B to add grids to Column A. Make Column B wider to the right for hidden grids. Note: "ZZ" Clinic Names = Deactivated clinics
- 5) Choose a) "Get Patient-level Data" (shows data derived from charting) or b) Choose module & "Create Team Data table for Sim UI" (shows parameters for each module from team data)
- 6) Explore different tabs in the file saved. Note: Restricted Patients = Patient identifiers asterisked out w/ last initial & last 4 of SSN in Column B.

To Save: Click on Browse & Save. This will automatically save back to the SharePointSave file to 1) data_ui or 2) team_data_sim_ui folder by clicking on BrowseAdd team name (facility # & date will auto-populate). Note: This is PHI. Save back to SharePoint or PHI-safe places. Encrypt for emails.

Troubleshooting

- Missing data? Check filters at top of columns or legends
- PivotTable refresh error? Click on Data tab & Refresh



Sim UI Cheatsheet (Updated 2019_05_09)

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1. Team Name (team world) or Your Name (ind world)
2. Navigation Menu - Home: You are here! - Play: Run experiments - Chat: Chat w/ team or facilitator - Help: MTL sim resources - Logout: Always logoff via button
3. Your Name & Photo - To add your image: Create a [gravatar.com](http://www.gravatar.com) account w/ VA email & upload photo

4. Session

Session: Click on circle & Play - Start New Session: Choose new module, select Team Data, & Play

Note: For CC & MM modules: Learning Mode

5. Experiment Maintenance**

- Delete incorrect runs
- Rename runs as necessary
- Export ≤ 10 runs in Excel file

6. Team Data Menu Maintenance**

- Delete old files
- Rename incorrect files
- Add files: Copy & paste team_data_sim_ui file name from mtl.how/data

** Panels 5 & 6 are only visible for individual worlds or team leads in team worlds, and are NOT available in mtl.how/demo mode

Login

Modeling to Learn

1. Open mtl.how/sim in Chrome. Use lowercase for username (VA email) & password
2. Choose team world for experimenting as a team or individual (find) world for learning on your own

1. Module name
2. Team data uploaded for current sim
3. Experiment Timeline
Run experiment for 0-2yrs & show feedback stories.

4. Outputs & Text

View $s6$ variable trends over time. Click on expand icon for full functions.

5. Experiments

- Select any previous run to set experimental sliders & Q/H/F/D text to that run.
- Team data table shows starting values for variables from your data.
- Move sliders from initial values to test a hypothesis.

6. Text

Enter Question, Hypothesis, Findings, & Decisions text. Click on expand icon in blue bar for full functions.

- Questions on variables? Click on "I" icon for variable info or "BC" for basecase values.

- Data not loading? Make sure .xlsx extension is included. - Rendering issues? Log-off completely and log back in. - What do the colors mean? Red means read in from team data. Green is for experiments that are important that we do not have team data for. Purple is for experiments on sensitivity. - Questions? Visit Help page on the Sim UI at mtl.how/sim or visit mtl.how.

Modeling to Learn

You can review data at within VA at mtl.how/data.

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mtl.how/data

You can self-register and use the demonstration simulation to explore the suicide prevention module.

mtl
→
mtl.how/demo

- Self-register
Course Code: cybersem
- Once registered go to:
mtl.how/demo_login

Modeling to Learn →
Test. Don't guess.

Username

Password
Internet Explorer is not supported by Modeling To Learn For best results, please use Chrome, Edge, Firefox, or Safari

Login

Version 1.8 (DEMO)

Run Your Test



Click the icon to run your own simulation.

Please provide some information
so we can send you a login

Please note that your name, email and password will only be used to create your login credentials. You will have access to the simulation for 5 days, unless you were given a Course Code. Unless you choose to continue to receive updates about the Modeling to Learn program, the system will erase your information after 5 days.

*First Name?

*Last Name?

*Your email?

*Create a Password?

*Confirm your password?

*Your Institution?

If other please specify >

*Your Role?

If other please specify >

*Your Discipline?

If other please specify >

*How did you find us?

If other please specify >

Enter your course code >

You do not need a course code. However, some users may have course codes for specific trainings.

Yes No Would you like email updates about *Modeling to Learn* quick tips and new releases?



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mtl.how/demo

*Once registered go to:
mtl.how/demo_login

 Save Experiment 

MTL Module: Suicide Prevention   

Last Save Date / Time: - Save Copy Export

Sim Parameters File: 583ge_wl_bhip2_2019_04_14.xlsx

Team: Lindsey Zimmerman

It may be helpful to write down which experimental variables you changed, and the values you applied before saving. Then name your experiment by choosing variable descriptions from the drop-down menus below. If a selection is not supported by the model, it will be grayed out. Multiple variable, cohort and service descriptions may be added to the end of the experiment name by clicking the "ADD" button. When finished, click on the "Save" icon above.

Experiment Name

Variable	<input type="text" value="Base Case"/>	<input type="button" value="ADD"/>
Number	<input type="text" value=""/>	<input type="button" value="ADD"/>

Select Variable

- Base Case
- Decimal

Help is available in top navigation bar.



Lindsey Zimmerman



HOME



PLAY



CHAT



HELP



LOGOFF



Lindsey Zimmerman



Model Diagram	Experiment Timeline	Outputs	Experiment
<p>The blue header at the top shows the module and data file chosen.</p> <p>The rates (circles) and stocks (rectangles) update dynamically with changes in the experiment variables.</p>  <p>Throughout the model diagram, there are "i" icons to explain how the variable is calculated.</p> 	<p>Use reveal complexities to look at balancing and reinforcing feedback systems stories.</p>  <p>In the systems stories, there are two kinds of arrows. Plus signs mean trends move in the same direction. Minus signs mean trends move in the opposite direction.</p> 	<p>View trends over time for ≤ 6 variables</p> <p>Text or Q/H/F/D Enter Question, Hypothesis, Findings, and Decisions text for each experiment.</p>  <p>Expanded Outputs View Q/H/F/D Text and Results Dashboard at once</p>  <p>Results Dashboard View trends over time for ≤ 6 variables. Compare ≤ 2 experiments against current run.</p>	<p>Select Experiment Select previous experiments to cue up experiment values and q/h/f/d text from previous experiments.</p> <p>Team Data Table Shows initial starting values of experimental variables based on team data.</p> <p>Experiment Adjust experiment sliders to test different values in the sim by dragging the slider.</p> 

Session 4 Bibliography

- **Barlas, Y.** (1996). Formal aspects of model validity and validation in system dynamics. *System Dynamics Review*, 12(3), 183–210.
- **Hovmand, P. S.** (2014). *Community Based System Dynamics*. Retrieved from <http://link.springer.com/10.1007/978-1-4614-8763-0>
- **Sterman, J. D.** (2006). Learning from evidence in a complex world. *American Journal of Public Health*, 96(3), 505–514.
- **Zimmerman, L., Lounsbury, D. W., Rosen, C. S., Kimerling, R., Trafton, J. A., & Lindley, S. E.** (2016). Participatory System Dynamics Modeling: Increasing Stakeholder Engagement and Precision to Improve Implementation Planning in Systems. *Administration and Policy in Mental Health and Mental Health Services Research*, 43(6), 834–849. <https://doi.org/10.1007/s10488-016-0754-1>

Additional Suicide Prevention Resources

https://www.mentalhealth.va.gov/suicide_prevention/resources.asp

Twenty helpful resources are available at the link for:

- Veterans and their Loved Ones
- Community Providers and Community Members
- VA Providers and Teams