



THE PRIMARY CARE COMPANION FOR CNS DISORDERS

Supplementary Material

Article Title: Bridging Community Mental Health and Primary Care to Improve Medication Monitoring and Outcomes for Patients With Mental Illness Taking Second-Generation Antipsychotics—HDC/DFMC Bridge Project, Phase 1: Group Concept Mapping

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Appendix 1. Group Concept Mapping Process and Analysis

On par with GCM sample size recommendations (minimum: 10-12), 13 participants were recruited.¹ The inclusion criteria included clinic staff members who played a role in either direct patient care or managed the information documented from patient visits. Participants were encouraged, but not required, to participate in every step of GCM. Concept Systems Global MAX software² was used for this GCM project, which took place from March to May 2018.

For step 1, participants brainstormed in response to a focus statement prompt at in-person meetings (two brainstorming sessions were held to allow as many participants to participate as possible). The focus statement was, “To effectively monitor patients taking second generation antipsychotics (SGAs), we (HDC and DFMC) need...” Participants were invited to share as many ideas as possible, and generated a total of 205 statements. Following brainstorming, the GCM facilitator and project leaders combined or reduced statements that were identical or represented the same idea into one representative statement (99 final statements).

For step 2, each participant was given a unique username and password to use for the Concept Systems Global MAX software. The sorting and ranking process was completed by each individual online at their own pace and timing. Each participant individually grouped the 99 statements according to their similarity³⁻⁵ “in a way that makes sense to [the participant].”⁶ Participants also ranked the statements according to two prompts: “Rate each idea individually on the level of priority that you think it should be given in the planning process.” The ranking of “1” indicated “lowest priority in the planning process” and “10” indicated “highest priority in the planning process.” The second prompt was “rate each idea individually on how easy you think it would be to implement.” The ranking of “1” indicated “impossible to implement” and “10” indicated “extremely easy to implement. Participants were encouraged to use the full range of the scale (“1” to “10”) when ranking the list of statements.

The GCM facilitator followed three main steps,⁶ to analyze data with the use of Concept Systems Global MAX software: 1. A similarity matrix was created based on sorting data, representing the number of times each pair of statements was sorted together. 2. Using multidimensional sorting, a two-dimensional map of points was created, in which each point represented a separate statement^{7,8} and a stress value was calculated. 3. Hierarchical cluster analysis was utilized through the use of Ward's algorithm to divide the multidimensional scaling coordinates into clusters.⁹

The facilitator analyzed the ranking data and a mean value for each item was calculated. In addition, a mean value for each cluster was calculated based on the mean values of all items contained within the cluster. The result of these analyses produced a visual concept map representing the focus: what HDC and DFMC need to effectively monitor patients taking second generation antipsychotics (SGAs). Each cluster was also compared based on the relationship between priority and ease of implementation through the use of pattern matching, which allows for a quantitative comparison of cluster ratings. A Pearson product moment correlation coefficient for this relationship was calculated.

Prior to the interpretation meeting, the facilitator, project leaders, and project stakeholders met to share their interpretations of the content of each cluster in the form of titles, representative statements, or phrases. Each cluster was given a preliminary name through this process.

During step 3, which was held in-person, participants interpreted the maps by discussing the content of the clusters as well as the relationship(s) between clusters. They gave feedback on the overall content of the map, the ratings of each cluster, and the potential utility of the results. Participants were also guided through analysis focusing on the relationship between "priority" and "ease of implementation" rankings, with a focus on identifying clusters and statements that received high priority and high ease of implementation ranking. There were 28 items that received high priority and high ease of implementation ranking. At HDC, the medical director and clinical pharmacist most closely involved in the project came to consensus on their top 7 priority items. At DFMC, each participant was asked to pick

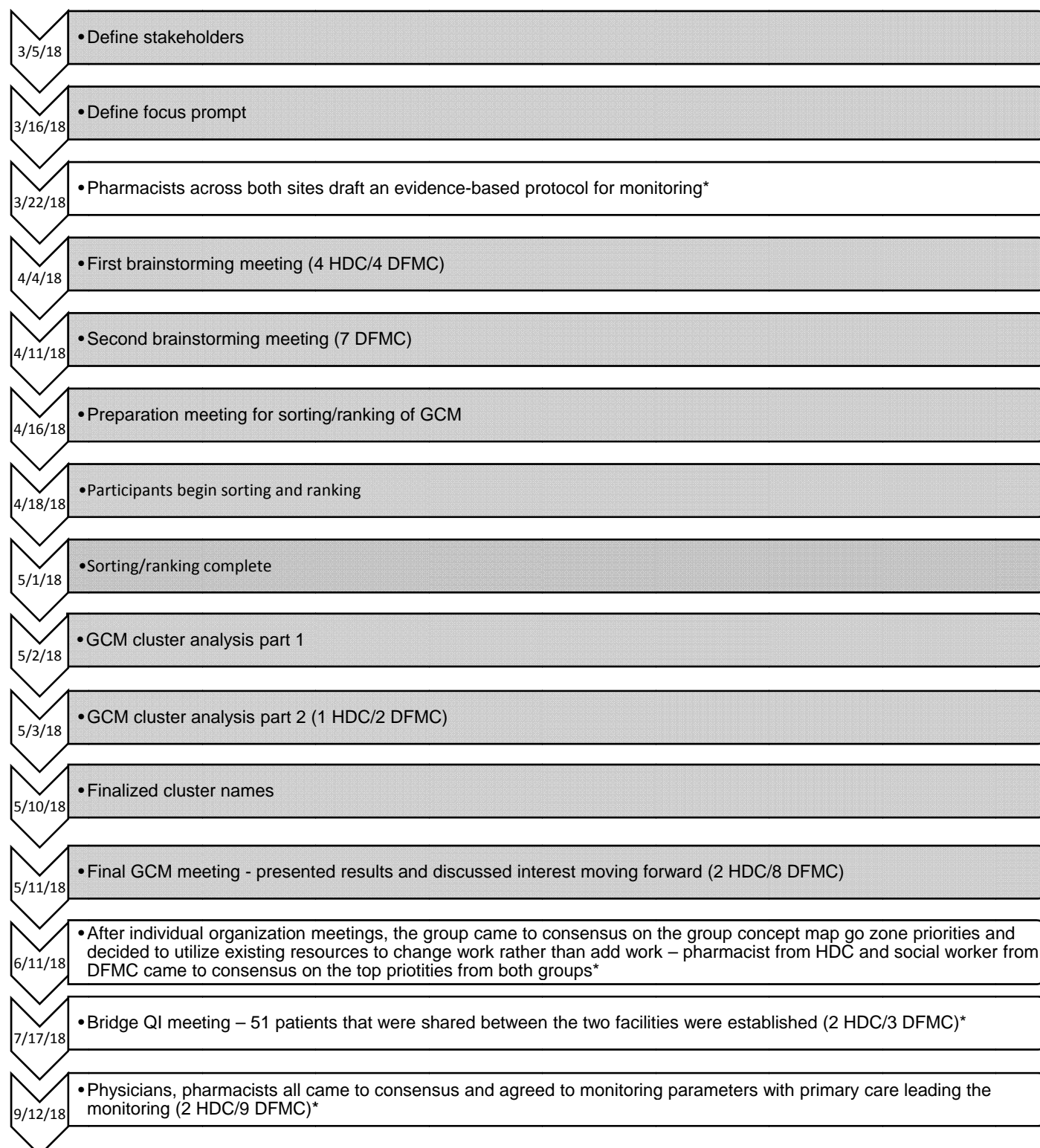
their top 5 items of those 28 that they perceived to be the most important. All of their responses were analyzed to find the top common responses among the participants.

All in-person meetings were recorded.

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Appendix 2. Visual Depiction of Group Concept Mapping (GCM) Process



*Figures in white were not part of the GCM process, but were part of our process to develop solutions to improving transitions of care across organizations

Appendix 3. List of Statements Organized by Cluster

Cluster 1: Standardization of process and protocols	
Statement #	Statement
1	to know how other clinic manages frequency of follow up
10	to have a process/protocol for medication reconciliation
13	one person at each clinic who takes charge of communication/collaboration process between clinics
20	a prompt to reestablish care with patients who are not current with follow up
25	to have a protocol for who monitors and follows up on labs
29	to have a person who is responsible for medication reconciliation
63	to know how often labs are checked
75	to have a standard protocol for release of information
83	automatic protocols that are triggered when specific medications are prescribed
93	an automatic process that triggers a follow-up visit and monitoring protocol when specific medications are prescribed
Cluster 2: EHR Optimization	
2	a way to communicate between different EHR systems
3	to flag prescribers if a medication requires monitoring
7	to have behavioral health data be reportable from EHR
8	to be able to look at past medication history
11	to scan information into the EHR.
14	to have necessary shared patient information immediately available in the medical record at point of care
24	medical records to be transferred/shared quickly
36	to have access to a patient portal so patients can print off and bring their patient portal records to clinic appointments
38	an easily accessible EHR list/tab that shows the care team providers (e.g. HDC provider, DFMC provider, pharmacy provider, ARMHS worker, etc.)
44	to ensure that a monitoring checklist from the other clinic is scanned into the EHR.
48	a tab in the EHR where information relevant to monitoring of SGAs is found
50	to ensure that the diagnosis codes are easy to find
52	Epic analyst support to build needed EHR improvements
67	a way to easily view hospital patient records (including medication lists)
69	a way to flag prescribers that won't lead to "alert-fatigue"
70	an efficient way to find pertinent information in the EHR
77	to have a tab/location for behavioral-health specific information in the EHR.
80	VPN access to the patient care record in real time
87	to have a way to easily see in the EHR which patients are co-managed
88	to have the same medical record system

90	to ensure that lab orders are easy to find
91	to ensure that the patient's updated/reconciled medication list is generated prior to their clinic visit
Cluster 3: Effective inter-clinic communication strategies	
4	to ensure that patient information is being shared in both directions
12	to communicate about non-mental health health issues
15	to know what kind of information the other clinic needs
18	to clarify who is responsible for ensuring patient information is shared
19	to share medication list updates when they occur
21	a safe/secure way to communicate
27	to know if labs/monitoring has occurred
28	to have a complete medication list for each patient
40	to communicate after each patient encounter
56	to be able to share information face-to-face with other healthcare providers
57	a timely process for sharing patient information
58	to send lab results to both the ordering provider as well as the provider who cares for the patient at the other clinic
66	a consent form to allow information to be shared between the two clinics
72	a way to ensure faxes are noticed
76	to request updated medication lists from the other clinic regularly (for medication reconciliation)
82	to know which medications each clinic is managing
84	to know if other clinic receives lab data/monitoring information after it is sent
98	to know which medications each clinic is prescribing
Cluster 4: Care team member roles & responsibilities, workflow, and care coordination	
23	to know who is responsible for monitoring and following up on labs
26	to know which clinic/provider is following up on behavioral health meds
30	to know if a patient was admitted to the hospital
33	shared personnel (people who work at both clinics)
34	a point person at DFMC to be a person on the HDC patient team
35	to determine if patients have a case manager/ARMHS/ACT person at HDC
41	a workflow so staff know what to do with patient information
42	an automatic process that triggers a referral for case management when specific medications are prescribed
47	an automatic process that triggers a referral for health coaching/dietician when specific medications are prescribed
61	to have agreement on expectations for monitoring
62	interaction between both clinic's case management
71	to meet the prescribers at the other clinic
74	prescribers to know when they should feel empowered to make medication changes (and when to defer to other prescribers)

78	mental health providers, ARMHS workers, and primary care to be located in the same place
85	a specific point person to be responsible for ensuring that the checklists and protocols are followed
89	an understanding of who "owns" which pieces of a patient's care (to have agreement on ownership of patient care between primary care and behavioral health)
94	to know baseline labs
96	to know which patients have case management
97	to know the scope of practice/strengths of each clinic so we can provide complimentary (not duplicative) care
Cluster 5: Patient advocacy and access to behavioral health care	
5	to know the financial impact of collaboration between clinics
9	to involve national patient advocate organizations in lobbying for change at state/federal level to integrate healthcare to improve patient care
17	consumers (patients) to advocate for change in the healthcare system
45	to acknowledge the social determinants of health for this population
46	a way to bill for reimbursement for not currently reimbursable providers (e.g. RNs, RPhs)
51	to help patients get health insurance
55	to petition city council to mandate that organizations that provide healthcare in Duluth have a shared medical record
59	to reduce stigma for patients
60	an integrated health care system
68	funding for community mental health centers for comprehensive psychiatric care in non-metro areas
81	grassroots efforts to advocate for an integrated EHR.
92	adequate funding for coordination activities
Cluster 6: Patient-centered care and education	
6	case managers to let patients know that they need to get lab work done
16	education surrounding monitoring for all involved in patient care
22	to meet monthly/quarterly with the patient's care team (which can include community services/law enforcement/ARMHS/social workers, birch tree, etc. as well as healthcare people)
31	to provide health coaching
32	to have a "check out sheet" to give patients that covers referrals, follow-up instructions, upcoming visits, education, etc.
37	to know which shared patients are in the CHUM Community Intervention Group
39	to educate patients about follow up monitoring
43	to explore ways to contact patients who are not reachable by phone
49	to have knowledge of how to access community services designed to improve

	adherence (e.g. pharmacy bubble packs)
53	to keep the patient in the center
54	to have pharmacists provide patient education in clinic
64	to educate patients about risk
65	to identify other people who might be involved in patient care (e.g. ARMHS workers)
73	to ensure patients are regularly followed up on
79	to include ARMHS workers in contacting patients
86	ARMHS workers to assist in getting patients to appointments
95	to ensure the patient has a voice/ownership in their care
99	to identify unmet patient needs that the other clinic could address

Appendix 4. Endorsed Second-generation Antipsychotic Metabolic Monitoring Protocol: A1C/fasting glucose and fasting lipid panel (FLP) monitoring

A1c / fasting glucose:

- Baseline, at 3 months in the first year
- If no pre-diabetes or diabetes (DM) or significant risk factors (e.g. weight gain >5%) then annually
- If pre-DM or DM or significant risk factors (e.g. weight gain >5%) then per American Diabetes Association (ADA) standards – If pre-DM or significant risk factors = annually (ADA states annually if on SGA). If DM = every 6 months if at goal and every 3 months if not at goal.⁴⁴

FLP:

- Baseline, if start treatment, then per the American College of Cardiology/American Heart Association guidelines (4-12 weeks after initiation of statin)⁴⁷
- Annually (most variable amongst resources) supported by HEDIS, Stahl's, ACC/AHA⁴⁵⁻⁴⁷