Innovations Physical Health Integration Project: ICARE
Final Report
September 2014

County of San Diego **HHSA** — HEALTH AND HUMAN SERVICES AGENCY | **LIVE WELL SAN DIEGO**
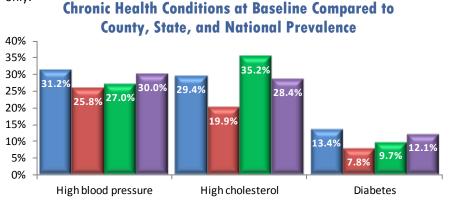
The Innovations Physical Health Integration Pilot project, "ICARE," is one of five Mental Health Services Act (MHSA) components designed to foster new approaches to increasing knowledge about serving the mental health needs in San Diego County communities. The focus of the ICARE program is to enhance mental and physical wellness through a holistic and collaborative continuum of care between primary care and mental health clinics.
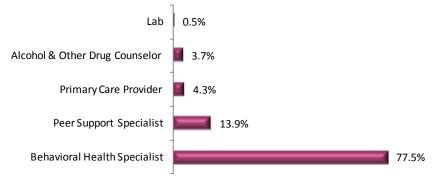
Originally, three Family Health Centers of San Diego (FHC) were chosen as ICARE program sites to serve as "person-centered medical homes" (PCMH) for persons with severe mental illness (SMI) who have reached a certain level of stability. Two additional FHC sites and one additional community mental health program were added later. Since the program's implementation in March 2011, 227 participants have been enrolled in the ICARE program across these five FHC sites. Demographic data and group characteristics of those participants are displayed in the table to the right.

Participants completed follow-up measures every 6 months. The current report includes demographics for 227 participants and outcomes for those who completed baseline, 6-month, 12-month, and 18-month follow-up assessments as of June 30th, 2014; therefore, outcomes data are included for those participants only.

Participant Demographics and Group Characteristics

Demographic Characteristics	# of Clients	% of Clients
Age (Mean=46.3)		
18-25	6	2.6%
26-49	111	48.9%
50+	102	44.9%
Not Reported	8	3.5%
Gender		
Male	109	48.0%
Female	107	47.1%
Other	1	0.4%
Not Reported	10	4.4%
Race		
White/Caucasian	97	42.7%
Black/African American	32	14.1%
Hispanic/Latino	76	33.5%
Asian	4	1.8%
Multiracial	2	0.9%
Other	3	1.3%
Not Reported	13	5.7%
Served in the Military	12	5.3%

Chronic Health Conditions at Baseline Compared to County, State, and National Prevalence

High blood pressure: ICARE 31.2%, SD County 25.8%, California 27.0%, U.S.A. 30.0%
High cholesterol: ICARE 29.4%, SD County 19.9%, California 35.2%, U.S.A. 28.4%
Diabetes: ICARE 13.4%, SD County 7.8%, California 9.7%, U.S.A. 12.1%

Legend: ICARE, SD County [a], California [b], U.S.A. [b]

Note: 20.6% of ICARE paritipants reported "Other"

Who Did Participant See During Initial Visit at FHC?

- Lab: 0.5%
- Alcohol & Other Drug Counselor: 3.7%
- Primary Care Provider: 4.3%
- Peer Support Specialist: 13.9%
- Behavioral Health Specialist: 77.5%

Note: some participants saw multiple staff during initial visit.

Clinic Location

- City Heights: 6.6%
- Logan Heights: 15.0%
- North Park: 29.5%
- Downtown: 16.7%
- Chula Vista: 28.6%
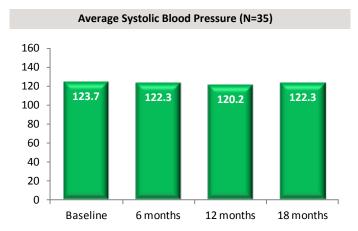- Not Reported: 3.5%

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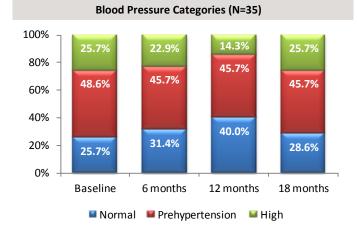
Self-Reported General Health

Possible scores on a self-reported general health measure completed by ICARE participants ranged from 0-100, with 0 indicating the poorest possible health and 100 indicating the best possible health.

- Self-reported general health scores initially increased from baseline to 6-month follow-up assessment (50.9 vs. 55.2, respectively) and then decreased to 53.4 at 12 months and remained the same at 18 months. Neither change was statistically significant.

- Additionally, the percentage of participants who rated their general health as 'Good', 'Very Good', or 'Excellent' steadily decreased from baseline to 12 months (72.4%, 67.2%, and 62.1%, respectively) with a slight increase from 12 to 18 months (62.1% and 63.8%, respectively).
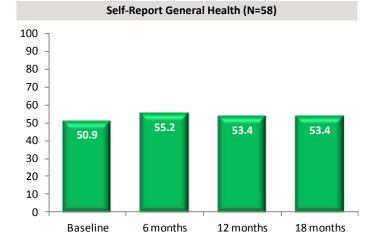
Self-Report General Health (N=58)

Physical Health

- The most common physical health conditions reported by participants at baseline were high blood pressure (31.2%) and high cholesterol (29.4%).

- Systolic blood pressure is pressure that blood exerts on vessels while the heart is beating, and is used as an indicator for cardiovascular disease risk. No significant difference was found between average baseline and any follow-up systolic blood pressure.
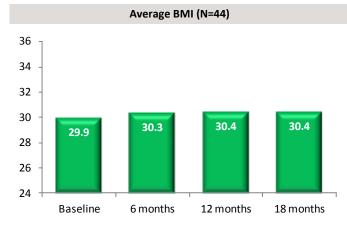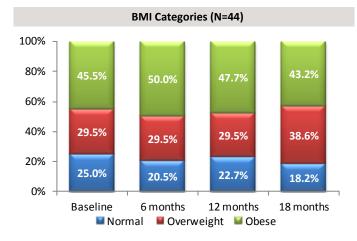
- Body Mass Index (BMI) is a number calculated from a person's weight and height. BMI is a reliable indicator of body fat and is used to screen for weight categories that are associated with chronic health problems.

- A BMI score below 18.5 indicates that an individual is underweight, 18.5-24.9 is normal, 25.0-29.9 is overweight, and 30 or greater indicates obesity.

Average Systolic Blood Pressure (N=35)

Average BMI (N=44)

- Mean BMI scores were examined for changes from baseline. No significant differences were found in BMI between baseline, 6-month, 12-month, or 18-month follow-ups.

Blood Pressure Categories (N=35)

BMI Categories (N=44)

Medication Adherence

Participants completed a self-report measure of medication adherence at each ICARE visit. Possible scores on the scale ranged from 0-8, with higher scores indicating greater medication adherence.

- On the medication adherence scale, scores less than 6 indicated low adherence, scores between 6-7 indicated moderate adherence, and scores equal to 8 indicated high adherence.

- At baseline, 32.2% of participants met the criteria for low, 44.1% for moderate, and 23.7% for high medication adherence. The percentage of participants in the low medication adherence category decreased to 28.8% at 6-months, but increased slightly to 30.5% at 12- and 18-months.

- There was a slight increase for medication adherence mean scores from baseline to 6 months (6.34 vs. 6.77, respectively), though this change was not statistically significant. Compared to baseline, medication adherence mean scores at 12 and 18 months increased slightly (6.34 vs. 6.43, respectively).

Medication Adherence Level (N=59)

	Baseline	6 months	12 months	18 months
High	23.7%	39.0%	27.1%	28.8%
Medium	44.1%	32.2%	42.4%	40.7%
Low	32.2%	28.8%	30.5%	30.5%

Average Medication Adherence Score (N=59)

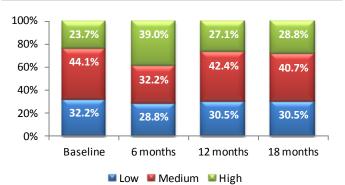| Baseline	6 months	12 months	18 months
6.34	6.77	6.43	6.43

Mental Health Stigma

Participants were also asked to respond to questions about their experiences related to having a psychiatric illness. At follow-up, participants showed decreases (i.e., improvement) on almost all perceived stigma items, indicating that they felt less stigmatized as a result of their mental health condition.
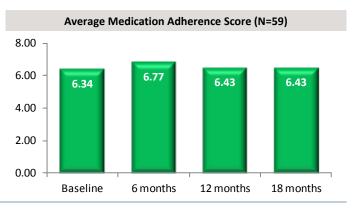
- Also, average stigma scores slightly decreased from baseline to 6 months (2.80 vs. 2.52) and then remained fairly constant at 12 and 18 months (2.57 vs. 2.59). These changes in average stigma scores were not statistically significant.

Average Stigma Score (N=41)

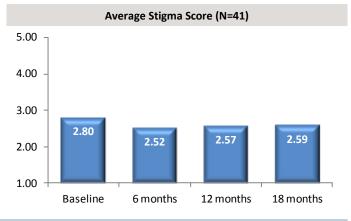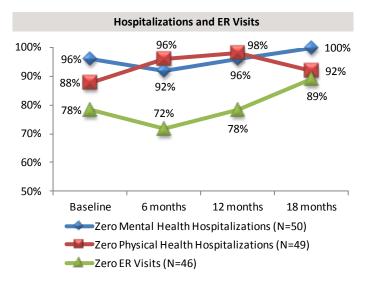| Baseline	6 months	12 months	18 months
2.80	2.52	2.57	2.59

Hospitalization

- The percentage of participants reporting zero inpatient hospitalizations in the last 6 months for **mental** health reasons at baseline (96.0%) initially decreased to 92.0% at 6 months, and then increased to 96.0% at 12 months and 100% at 18 months.

- The percentage of participants reporting zero inpatient hospitalizations in the last 6 months for **physical** health reasons at baseline (87.8%) increased to 95.9% at 6 months, 98.0% at 12 months, and then decreased at 18 months (91.8%).

- Also, the percentage of participants reporting zero emergency room (ER) visits in the last 6 months (last 12 months for baseline) for any reason decreased from baseline (78.3%) to 6 months (71.7%), increased at 12 months (78.3%) and then increased to 89.1% at 18 months.

Hospitalizations and ER Visits

	Baseline	6 months	12 months	18 months
Zero Mental Health Hospitalizations (N=50)	96%	92%	96%	100%
Zero Physical Health Hospitalizations (N=49)	88%	96%	98%	92%
Zero ER Visits (N=46)	78%	72%	78%	89%

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Program Satisfaction

The table below displays item means for the ICARE program satisfaction scale. Item means were compared at baseline and 6-month, 12-month, and 18-month follow-up assessments. Statistically significant changes in means from baseline to follow-up are indicated with an asterisk next to the associated number. Significant numbers are additionally "bolded." For example, a significant change from baseline to 18-month follow-up would be signified by both the baseline and 18-month follow-up means being bolded along with an asterisk being next the 18 months mean.

The percentage of ICARE participants who agreed or strongly agreed that they were satisfied with various dimensions of services they received are also included in the table below. There was a higher percentage of ICARE participants who were satisfied with services at 6 months, 12 months, and 18 months (98.3% , 100.0%, and 96.6%, respectively), compared to baseline (93.1%). Also, compared to mental health consumers receiving services in other San Diego County mental health programs, a higher percentage of ICARE participants were satisfied with the services they received (item #18 compared to San Diego programs data† (98.3%/100%/96.6% vs. 92.5%)) .

Participant Program Satisfaction	N		Baseline	6 months	12 months	18 months	CHANGE
1. I am satisfied with the amount of time staff spent with me during visits.	57	M	4.47	4.51	4.54	4.60	▲
		A/SA	94.7%	98.2%	98.2%	96.5%	
2. My beliefs about health and well-being were considered as part of the help (services) that I received.	56	M	4.29	4.38	4.48	4.50	▲
		A/SA	91.1%	96.4%	98.2%	96.4%	
3. I would follow through if I were referred outside this clinic for mental health services.	56	M	3.95	3.63	3.73	3.79	▼
		A/SA	80.4%	75.0%	66.1%	75.0%	
4. Any concerns I had about emotional, behavioral or mental health issues were addressed during my visit.	56	M	4.23	4.27	4.41	4.48	▲
		A/SA	87.5%	91.1%	92.9%	96.4%	
5. I did not bring up counseling needs, basic needs or other concerns due to embarrassment.	54	M	2.39	2.43	2.22	2.15	▼
		A/SA	18.5%	18.5%	14.8%	16.7%	
6. Treatment and information were provided to me in a language or way I could easily understand.	58	M	4.47	4.53	4.52	4.57	▲
		A/SA	98.3%	100.0%	96.6%	98.3%	
7. I would be comfortable receiving counseling services here at this clinic.	58	M	**4.17**	**4.48***	4.40	4.41	▲
		A/SA	86.2%	94.8%	93.1%	96.6%	
8. I am treated the same as other people who get care at the clinic.	56	M	4.25	4.45	4.38	4.21	▲
		A/SA	83.9%	96.4%	98.2%	92.9%	
9. I prefer to receive my counseling services at the location where I receive my medical care.	58	M	**4.10**	4.38	4.34	**4.53***	▲
		A/SA	81.0%	91.4%	96.6%	98.3%	
10. My basic needs (such as food, clothing, shelter, financial) were addressed to my satisfaction.	51	M	3.92	4.18	4.06	4.22	▲
		A/SA	76.5%	78.4%	84.3%	84.3%	
11. I was provided with referrals to resources that assisted me and/or my family.	52	M	3.87	4.25	4.17	4.04	▲
		A/SA	73.1%	86.5%	84.6%	86.5%	
12. The resources available and/or that were provided to me are in my home community.	54	M	4.06	4.20	4.20	4.19	▲
		A/SA	75.9%	87.0%	87.0%	90.7%	
13. I am more comfortable seeking help.	57	M	4.04	4.12	4.12	4.14	▲
		A/SA	86.0%	87.7%	82.5%	89.5%	
14. I am better able to handle things.	57	M	3.67	3.82	3.89	3.81	▲
		A/SA	68.4%	75.4%	71.9%	68.4%	
15. This clinic is easy to get to.	56	M	4.32	4.45	4.45	4.52	▲
		A/SA	92.9%	98.2%	96.4%	98.2%	
16. I know where to get help when I need it.	57	M	4.32	4.37	4.37	4.18	▼
		A/SA	94.7%	96.5%	94.7%	87.7%	
17. This clinic meets all my health care needs.	58	M	4.31	4.47	4.34	4.34	▲
		A/SA	93.1%	96.6%	89.7%	93.1%	
18. Overall, I am satisfied with the services I received	58	M	4.38	4.55	4.48	4.53	▲
		A/SA	93.1%	98.3%	100.0%	96.6%	
†Program Satisfaction -- County of San Diego, Behavioral Health Services Clients (data from the Spring 2014 MHSIP Mental Health Consumer Satisfaction Survey)		% AGREED OR STRONGLY AGREED ------->	92.5%				

Note. M = mean value; A/SA = percent "agree" or "strongly agree"

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Mental Health Recovery

IMR Scale		ICARE Participants							
		Baseline		**6 months**		**12 months**		**18 months**	
Behavioral Health Specialist's Perspective	**N**	**Mean**	*SD*	**Mean**	*SD*	**Mean**	*SD*	**Mean**	*SD*
Overall IMR Mean [ab]	**60**	3.63	0.49	3.88	0.40	3.96	0.52	3.72	0.55
Recovery Subscale [ab]	**59**	3.36	0.73	3.64	0.62	3.80	0.68	3.56	0.75
Management Subscale [ab]	**60**	3.34	0.82	3.69	0.69	3.75	0.81	3.35	0.75
Substance Subscale	**60**	4.47	1.10	4.77	0.65	4.67	0.86	4.52	1.07

RMQ Scale									
Participant's Perspective	**N**	**Mean**	*SD*	**Mean**	*SD*	**Mean**	*SD*	**Mean**	*SD*
Overall RMQ Mean	**60**	3.77	0.53	3.89	0.48	3.82	0.53	3.79	0.43

Note: IMR and RMQ scales and subscales range from 1 to 5; higher ratings indicate greater recovery.
"a" = significant change from baseline to 6 months, "b" = significant change from baseline to 12 months, "c" = significant change from baseline to 18 months. SD = Standard deviation
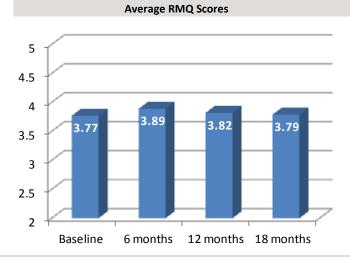
Assessing Recovery with IMR and RMQ Scales

To measure mental health recovery from multiple perspectives, the Illness Management and Recovery Questionnaire (IMR) and the Recovery Markers Questionnaire (RMQ) were included as part of the ICARE assessments. Participants completed the 24-item RMQ to measure their own perceptions of their recovery. The IMR, completed by the behavioral health specialist, consists of 15 items each addressing a different aspect of the clients' mental health recovery. The IMR also includes 3 subscales: mental health recovery, illness management, and substance use. Both the IMR and the RMQ use a 1-5 response scale, with higher ratings indicating greater recovery.
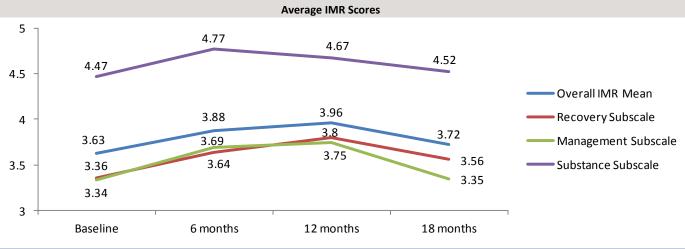
Mental Health Recovery During ICARE

IMR and RMQ data were analyzed for participants once they were in the ICARE program.

- There was a significant increase from baseline to 6 months and baseline to 12 months for overall IMR mean (3.63 vs. 3.88 and 3.63 vs. 3.96, respectively).

- There was a significant increase from baseline to 6 months and baseline to 12 months for the recovery subscale (3.36 vs. 3.64 and 3.36 vs. 3.80, respectively).

- There was also a significant increase from baseline to 6 months and baseline to 12 months for the management subscale (3.34 vs. 3.69 and 3.34 vs. 3.75, respectively).

Average RMQ Scores

Average IMR Scores

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Mental Health Recovery Continued

	ICARE Participants							
	COMPARISON 1		**COMPARISON 2**		**COMPARISON 3**		**COMPARISON 4**	
	MH Clinic Last Assessment	ICARE Baseline	MH Clinic Last Assessment	ICARE 6 months	MH Clinic Last Assessment	ICARE 12 months	MH Clinic Last Assessment	ICARE 18 months
IMR Scale	(N=158)		(N=118)		(N=77)		(N=59)	
Behavioral Health Specialist's Perspective	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
Overall IMR Mean [a b c d]	3.45	3.65	3.41	3.86	3.45	3.96	3.40	3.69
Recovery Subscale [a b c d]	3.13	3.39	3.04	3.64	3.06	3.76	3.03	3.57
Management Subscale [a b c d]	3.00	3.38	2.96	3.63	3.05	3.73	3.01	3.30
Substance Subscale [b c]	4.27	4.35	4.34	4.60	4.43	4.74	4.35	4.40
RMQ Scale	(N=130)		(N=96)		(N=62)		(N=38)	
Participant's Perspective	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
Overall RMQ Mean [b c d]	3.66	3.74	3.65	3.79	3.62	3.84	3.61	3.81

Note for ICARE participants: a = Comparison 1 was significant; b = Comparison 2 was significant; c = Comparison 3 was significant; d = Comparison 4 was significant

Mental Health Recovery for ICARE Participants

	County of San Diego, Outpatient Clients		
IMR Scale	Baseline	At Latest Assessment	
Behavioral Health Specialist's Perspective	Mean	Mean	N
Overall IMR Mean	3.51	3.99*	264
Recovery Subscale	3.28	3.82*	264
Management Subscale	2.96	3.67*	264
Substance Subscale	4.48	4.69*	254
RMQ Scale			
Participant's Perspective	Mean	Mean	N
Overall RMQ Mean	3.66	3.93*	141

Notes for SD County Outpatient Clients: Data from HOMS entered by 08/27/14; includes clients with MORS score >=6 who received outpatient mental health services in FY 2013-14; * indicates comparison was significant

ICARE participants are among County of San Diego, Behavioral Health Services clients whose outcomes have been measured previously at mental health clinics. These mental health clinic data were used to compare ICARE participants' mental health recovery before and after ICARE participation. That is, ICARE participants' mental health clinic data were compared to their ICARE baseline, 6-month, 12-month, and 18-month follow-up assessments. For these comparisons, participants' last mental health clinic assessment prior to ICARE enrollment was used for the mental health clinic data. At the ICARE 6-month and 12-month follow-up, participants significantly improved in their mental health recovery since their last assessment at the mental health clinic across all participant and behavioral health specialist perspectives. Additionally, from the behavioral health specialist perspective, there was a significant improvement in the overall IMR mean, recovery and management subscales from the mental health clinic assessment to the baseline and 18-month ICARE assessment. From the participants' perspective, there was also a significant improvement in recovery from the mental health clinic to 18 months in ICARE.

Overall, ICARE participants showed recovery improvements from clinician and participant perspectives. On average ICARE scores were higher on all mental health recovery measures compared to previous mental health clinic assessments.

ICARE COMPARISON WITH COUNTY OF SAN DIEGO, BEHAVIORAL HEALTH SERVICES CONSUMERS

Since 2008, mental health outcomes data have been collected across San Diego County for all County of San Diego, Behavioral Health Services (SDCBHS) consumers. Those participating in ICARE were a part of that population, allowing for additional outcome comparisons. Thus, mental health outcomes from ICARE participants (maroon/pink/purple table) were compared to other similar, but non-ICARE, SDCBHS participants (green table). The comparison of scores from the mental health clinic to 6-month and 12-month ICARE follow-ups showed the greatest improvements. In comparison to clients receiving SDCBHS, ICARE participants:

- Showed greater mental health recovery improvements across all IMR domains at 18 months, except management.

- Demonstrated greater increases in recovery scores (0.60 ICARE vs. 0.54 Outpatient clients) and substance use (0.26 ICARE vs. 0.21 Outpatient clients) at 12 months.

Summary of Findings

- Since the inception of ICARE in March of 2011, a total of 227 people have enrolled in the program. The average age of participants was 46.3 years old. The majority were White/Caucasian or Hispanic/ Latino and there was an even split between Males and Females.

- There were no statistically significant changes in self-reported general health across all four assessments. The majority of participants rated their general health as 'Good', 'Very Good', or 'Excellent' across baseline, 6-month, 12-month, and 18-month follow-up assessments.

"The majority of participants rated their general health as 'Good', 'Very Good', or 'Excellent' across baseline, 6-month, 12-month, and 18-month follow-up assessments"

- There were no statistically significant changes in physical health measures. Average systolic blood pressure and BMI were stable across baseline, 6-month, 12-month, and 18-month follow-up assessments. The majority of participants were in the prehypertension blood pressure category and obese BMI category.

"There were several statistically significant changes in mental health recovery measures for ICARE participants across baseline, 6-month, 12-month, and 18-month follow-up assessments"

- Although the change in medication adherence scores was not statistically significant, average scores were in the moderate adherence level across baseline, 6-month, 12-month, and 18-month assessments.

- Average mental health stigma scores decreased (lower scores represent less stigma) from baseline to all follow-up assessments; however, these changes were not statistically significant.

- The percentage of participants reporting zero emergency room visits, mental health hospitalizations, or physical health hospitalizations increased from baseline to 18-month follow-up assessment.

- The percentage of participants that agreed or strongly agreed that they were satisfied overall with the services they received at ICARE ranged between 93.1% and 100% across baseline, 6-month, 12-month, and 18-month follow-up assessments.

- There were several statistically significant changes in mental health recovery measures for ICARE participants across baseline, 6-month, 12-month, and 18-month follow-up assessments. There were significant improvements from the behavioral health specialist's perspective as well as the participant's perspective. Significant improvements traversed from the mental health clinics through ICARE follow-ups. Furthermore, ICARE participants improved greater than other outpatient clients in some aspects of mental health recovery.

- On several measures, there was a general improvement from baseline to 6 and 12 months, and then scores would decline at the 18-month follow-up.

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