



ROBERT WOOD JOHNSON HEALTH SYSTEM

# Patients Receive Recommended Care for Community-Acquired Pneumonia

*“For New Jersey to be a state in which all people live long, healthy lives.”*

DSRIP LEARNING COLLABORATIVE PRESENTATION

Alex Kardos R.Ph. BS Pharm.  
Director of Pharmacy Services

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The Care you Trust !



**RWJ** UNIVERSITY HOSPITAL  
HAMILTON  
ROBERT WOOD JOHNSON HEALTH SYSTEM

# Problem Statement

1. Patients present to the Emergency Department at higher than desired rates.
2. Admission/readmission rates are higher than desired.
3. Repeat patients tend to be those with inadequate post discharge follow-up.
4. Repeat patients tend to be those with non-compliant medication use.
5. Identification of patients at high risk for readmission is not optimal.

# Objectives

OUR PROJECT GOAL IS TO PROVIDE :

- A set of strategies that will include design and implementation of standardized order sets
- Incorporate care based on recommendations by the Infectious Diseases Society of America and the American Thoracic Society consensus
- Utilize metrics that are measured by the Joint commission and CMS Pneumonia measure sets.
- **Use strategies that will include the use of force functioning, prompt feedback to prescriber, and design and implementation of electronic health record in capturing and assessing compliance with initiatives.**

# What we did.

- 1) Developed a interdisciplinary team which include physicians, pharmacists, respiratory therapists.
- 2) Determined interventions to be included in order sets
  - ER/admission orders designed to include algorithm to identify appropriate care setting .
  - Medication order sets which include recommended medications and interventions as determined by the team.
  - Order sets that include diagnostic testing orders as determined to be appropriate by the team.
  - Smoking cessation and vaccine administration as appropriate for the patient.
- 3) Created data and chart reviews to determine compliance with meeting performance measures and provide feedback to the physician.
- 4) Incorporated appropriate (high risk) patients in the Care Transitions Program for post discharge care.

# How we did.

DSRIP Metrics Summary Sheet 2014											
ALL	2013	Goal	Jul	Aug	Sep	3rd Qtr	Oct	Nov	Dec	4th Qtr	2014 YTD
Chest Num	396					0				0	0
Chest Dem	401		48	58	71	177	63	55	75	193	370
% Chest X-Ray	99	100	0%	0%	0%	0%	0%	0%	0%	0%	0%
Men. Status Num	381		48	58	70	176	63	55	74	192	368
Men. Status Dem	401		48	58	71	177	63	55	75	193	370
% Mental Status Assessment	95	100	100%	100%	99%	99%	100%	100%	99%	99%	99%
Correct ABX Non-ICU Num	373		35	33	46	114	45	36	55	136	250
Correct ABX Non-ICU Dem	401		35	33	46	114	45	37	55	137	251
% Correct ABX Non-ICU	93	96	100%	100%	100%	100%	100%	97%	100%	99%	100%
Correct ABX ICU Num	373		8	17	20	45	13	7	18	38	83
Correct ABX ICU Dem	401		8	17	20	45	13	7	18	38	83
% Correct ABX ICU	93	96	100%	100%	100%	100%	100%	100%	100%	100%	100%
Correct ABX All Num	373		43	50	66	159	58	43	73	174	333
Correct ABX All Dem	401		43	50	66	159	58	44	73	175	334
% Correct ABX All	93	96	100%	100%	100%	100%	100%	98%	100%	99%	100%
LOS for CAP *	5.5	5.38	8.61	6.84	4.67		8.1	5.3	5.52		5.96
30 days All Cause Readm Rate	16.4	15.62	6.3	5.6	25.0		5.9	5.0	6.7		9.4
30 day Same Cause Readm Rate	2.43	2.31	0	0	0		5.9	0	0		0.7
Compliance w/Order set Dem	0						9	12	35	56	56
Compliance w/Order set Num	401						58	44	73	175	175
% compliance with use of order sets	0%	50%					16%	27%	48%	32%	32%

\* ALOS from Premier database

Other Metrics	Jul	Aug	Sep	3rd Qtr	Oct	Nov	Dec	4th Qtr	2014 YTD
Bld Cult before ABX Num	40	49	63	152	56	43	72	171	323
Bld Cult before ABX Dem	41	49	63	153	56	43	72	171	324
% Bld Cult before ABX	98%	100%	100%	99%	100%	100%	100%	100%	100%
ABX w/I 6hrs Num	41	47	67	155	61	42	72	175	330
ABX w/I 6hrs Dem	41	47	67	155	61	44	73	178	333
% ABX w/I 6hrs	100%	100%	100%	100%	100%	95%	99%	98%	99%
Pneumo Vax Num	47	57	66	170	66	57	70	193	363
Pneumo Vax Dem	47	57	69	173	66	57	70	193	366
% Pneumo Vax	100%	100%	96%	98%	100%	100%	100%	100%	99%
Flu Vax Num	0	0	27	27	61	57	70	188	215
Flu Vax Dem	0	0	28	28	62	58	71	191	219
% Flu Vax	n/a	n/a	96%	96%	98%	98%	99%	98%	98%

Data is for  
all pneumonia patients.

# What we still are doing.

- 1) Monitor daily critical success factors to insure high compliance rate for metrics.
- 2) Created on chart indicator for those patients identified as “high risk” to alert all care givers.
- 3) Incorporated appropriate and willing (high risk) patients in the Care Transitions Program for post discharge care.
- 4) Creating with Premedex real time follow up (30 day) for discharge patients utilizing:
  - a) 1 Live phone calls for follow up of key issues with escalation if needed to RWJ Hamilton resolution experts.
  - b) 3 automated phone calls for follow up of key issues with escalation if needed to RWJ Hamilton resolution experts.
  - c) Data correlation and charting for impact results reporting to assess whether pre and post discharge efforts are having the desired impact.
  - d) Metrics reviews to determine compliance with meeting performance measures and provide feedback to the physician.

# Daily Monitoring

Quality analysts review key metrics indicators daily to identify fall out areas and escalate to the appropriate department for resolution.

Preliminary Data (Daily Monitoring) - March 15 PNEUMONIA																										
Name	Account #	MR#	ED date	preliminary arrival time	PN DX in ED	CXR NUMERATOR	CXR DENOMINATOR	ABX w/in 6 hours NUMERATOR	ABX w/in 6 hours DENOMINATOR	Bid CX before ABX NUMERATOR	Bid CX before ABX DENOMINATOR	Pneumo-Vax NUMERATOR	Pneumo-Vax DENOMINATOR	flu/vax NUMERATOR	flu/vax DENOMINATOR	Mental Status Assessed- NUMERATOR	Mental Status Assessed- DENOMINATOR	ADMITTING UNIT	D/C UNIT	ED Physician	Notes	Antibiotic appropriate NUMERATOR	Antibiotic appropriate DENOMINATOR	DSRIP Abx selection- NUMERATOR	DSRIP Abx selection- DENOMINATOR	Fallout Addressed
			3/24/2015	10:32	yes	1	1	1	1	1	1	1	1	1	1	1	1	icu			vanco/max, NH-HAP, pred pta	1	1	0	0	
			3/25/2015	11:07	yes	1	1	1	1	1	1	1	1	1	1	1	1	lft2			roc/zith, HAP, pred pta	1	1	0	0	
			3/25/2015	10:22	yes	1	1	1	1	1	1	1	1	1	1	1	1	tc			invanz, HAP	1	1	0	0	
			3/25/2015	15:27	yes	1	1	1	1	1	1	1	1	1	1	1	1	icu			vanco/max, HAP	1	1	0	0	
			3/25/2015	14:16	yes	1	1	1	1	1	1	1	1	1	1	1	1	lft1			roc/zith, abx pta	1	1	1	1	
			3/26/2015	16:51	yes	1	1	1	1	1	1	1	1	1	1	1	1	icu			levaq_maxpm	1	1	1	1	
			3/26/2015	8:38	yes	1	1	1	1	1	1	1	1	1	1	1	1	icu			lev/max, NH-HAP	1	1	0	0	
			3/26/2015	20:35	yes	1	1	1	1	1	1	1	1	1	1	1	1	icu			vanco/cef/flagyl/lev, NH-HAP	1	1	0	0	
			3/28/2015	13:15	yes	1	1	1	1	1	1	1	1	1	1	1	1	tc			lev	1	1	1	1	
			3/27/2013	21:46	yes	1	1	1	1	1	1	1	1	1	1	1	1	tc			roc/zith	1	1	1	1	
			3/27/2015	16:14	yes	1	1	1	1	1	1	1	1	1	1	1	1	tn			roc/zith	1	1	1	1	
			3/30/2015	3:05	yes	1	1	1	1	1	1	1	1	1	1	1	1	tc			lev/cef/vanco	1	1	1	1	
			3/29/2015	20:57	yes asp pn	1	1	1	1	1	1	1	1	1	1	1	1	icu			vano/azac/flagyl, pred/abx pta, NH-HAP	1	1	0	0	
			3/28/2015	15:29		1	1	0	0	0	0	1	1	1	1	1	1	icu				0	0	0	0	

# Continual Intervention

- RWJ Hamilton utilizes a predictive risk software program, Crimson (The Advisory Board Company).
- Thru a predictive algorithm, Crimson identifies patients at risk for readmission thru their past admission history, current problem list and specific medication therapy.
- A “HIGH RISK” warning appears on the patients’ EMR header which alerts providers and caregivers to the risk of readmission and to align support resources as appropriate for the patient prior to discharge.
- This designation can also be modified by RWJ Staff if they determine, by “soft” measures, the status needs to be escalated.
- This “High Risk” notification is also communicated electronically to predetermined disciplines so patient/condition specific interventions can be deployed.

# Sample EMR

 **OPTREG, OBSERV** 54-02-87 / 999100589 66y (Dec-01-1948) M  
12-Tele C-1204-02 Pacia, Arthur  
**Allergy Info:** No Known Allergies **Last Daily Weight:** 226 Kg 498.2 lbs 01-23-2015  
**Readmit Risk: High**

# Care Transitions Program

- RWJ Hamilton has a robust care transitions program which utilizes the Care Transitions Intervention/Coleman Model.
- The program was initially developed and implemented in 2011 for CHF and AMI patients. Stroke patients were added on in 2013.
- In 2014, as part of the DSRIP project, community acquired pneumonia patients were added in to the program.
- The Program is offered to patients with a diagnosis of CAP at no fee, and would include a comprehensive risk assessment of patients, patient and caregiver centered education and transitions services as patients move across care settings.
- Already established collaborative partnerships with other care providers such as physicians, skilled care/rehabilitation facilities and home care agencies are an area of focus, including improving communication of key components of patients' medical regimen and plan of care.

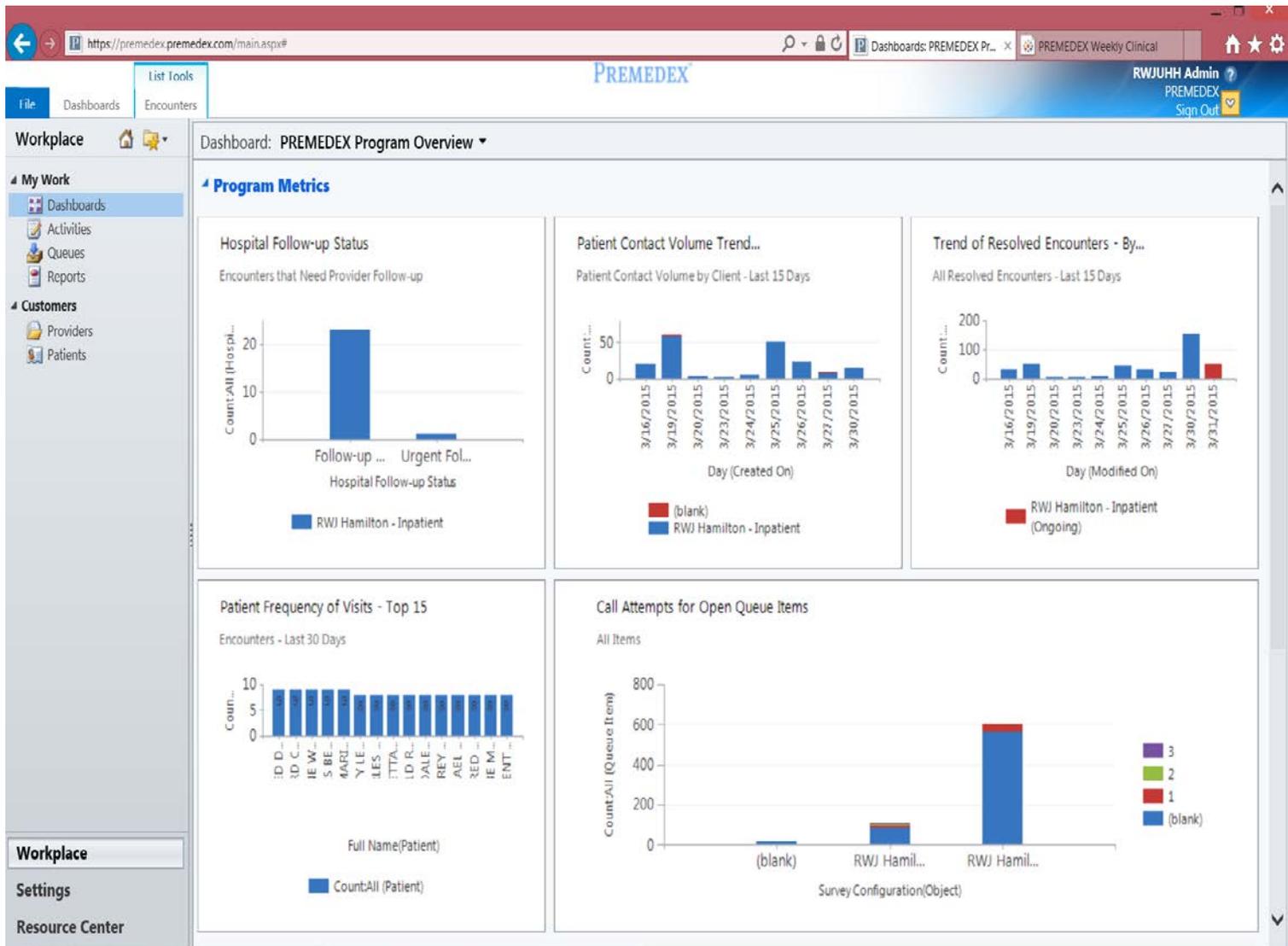
# Care Transitions Program

## Objectives

- 1) Utilize the evidence based risk assessment tool to identify all patients at risk for CAP readmission.
- 2) Provide established CAP patient and caregiver education including management of condition, recognition and appropriate response to red flags or warning signs of CAP provided by pharmacists and nurses.
- 3) This includes a hospital bedside education by a pharmacist and/or transition coach, care transitions home visit, four follow up calls including 1 call from a pharmacist.
- 4) Ensure consistency and reinforcement of information provided to the patient
- 5) Support patients after discharge with referrals to an outpatient setting of their choice and education related to condition, medication adherence, blood work monitoring and dietary restrictions (if any).

# *Discharge Patient Follow Up*

RWJ Hamilton has partnered with Premedex, which is a web-based patient communications platform that helps us efficiently manage post-discharge follow-up, clinical & service related feedback collection, intervention opportunity identification, escalation resolutions, and ongoing reporting, analytics and insights.



User Dashboard

The screenshot displays a web-based queue management system. On the left, a navigation menu includes 'Workplace', 'My Work' (with sub-items: Dashboards, Activities, Queues, Reports), and 'Customers' (with sub-items: Providers, Patients). The main area is titled 'Queue Items' and shows a list of queue items. A dropdown menu is open, listing various call attempts for patient ID 121228, including 'Inpatient Multistep', 'Initial Call', 'Week 2', 'Week 3', 'Week 4', and 'Manually Triggered Automated Calls'. The main table displays a list of queue items with columns for Encounter Date, Discharge Date, and Entered Queue. The table shows multiple entries for patient VASSELL, with dates ranging from 3/24/2015 to 3/30/2015. The interface also includes a search bar, a 'Sign Out' button, and a 'Click here to view the chart' link.

Encounter Date	Discharge Date	Entered Queue
VASSELL 3/24/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
3/26/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
3/18/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
3/24/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
CKSON 3/26/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
3/25/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
3/25/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
3/13/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
KLY 3/21/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
3/23/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
3/25/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
3/24/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
LUM 3/23/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
T 3/23/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
3/25/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
3/26/2015 12:00...	3/27/2015 12:00...	3/30/2015 12:45 PM
R 3/25/2015 12:00...	3/28/2015 12:00...	3/30/2015 12:56 PM
3/27/2015 12:00...	3/28/2015 12:00...	3/30/2015 12:56 PM
3/22/2015 12:00...	3/28/2015 12:00...	3/30/2015 12:56 PM
V 3/26/2015 12:00...	3/28/2015 12:00...	3/30/2015 12:56 PM
3/25/2015 12:00...	3/28/2015 12:00...	3/30/2015 12:56 PM
3/26/2015 12:00...	3/28/2015 12:00...	3/30/2015 12:56 PM
3/21/2015 12:00...	3/28/2015 12:00...	3/30/2015 12:56 PM

Intelligent queueing allows us to assign PN patients to a follow-up list, prioritize outreach, manage multiple call attempts, and gain operational efficiencies in order to collect valuable patient feedback & take action. In this program, we make one initial call within 48 hours of discharge, followed by 3 weekly automated calls.

Phone Call Activities

### Information

Sender  Secondary Phone Number

Unit  PCP

Engagement Configuration

Regarding

Actual Start   Actual End

PREMEDEX S-Score  PREMEDEX C-Score

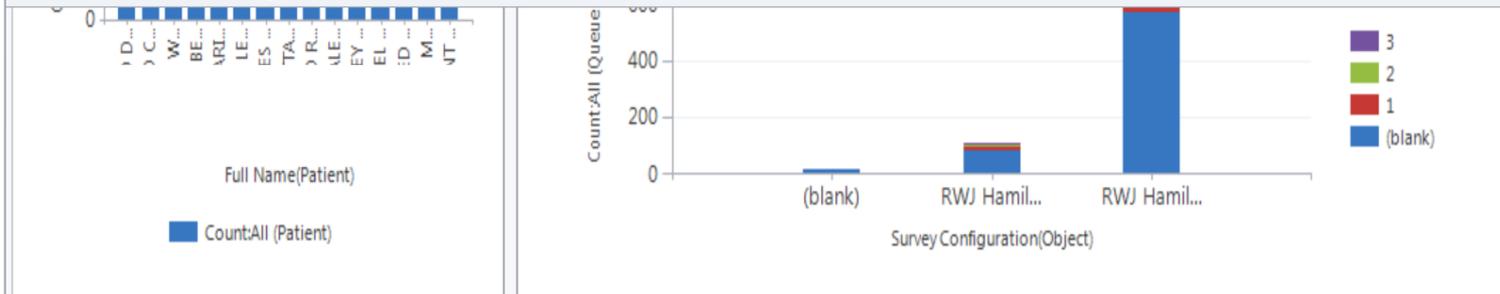
#### 4 Patient Engagement Questions

1)	Hello, may I speak with Mr./Mrs. _____? Hi Mr./Mrs. _____ this is _____ calling on behalf of RWJ-Hamilton. I see you were recently discharged and we wanted to check on you. How are you doing?	Ok
2)	Were you able to get your prescriptions filled?	No
2a)	2-Why? (Categorize Response)	Cannot afford
3)	Do you understand the instructions for taking your medicines?	Yes
4)	Did you make/keep your follow-up appointments?	Yes
5)	Do you understand the written discharge instructions we provided?	Yes
6)	Were you satisfied with the care you received from the physician(s) and nursing staff?	Yes
7)	Do you have any specific comments about what we did well or maybe not so well?	pt. stated she was unable to afford
8)	Is there anyone in particular who has done a great job for you that I can recognize?	Pt. stated she still has a cough
9)	Hospital Follow-up Required?	Yes
10)	Urgent Follow-up?	
11)	Additional comments	
12)	Reason for Escalation-1	Medications
13)	Reason for Escalation-2	
14)	Reason for Escalation-3	
14a)	Please Explain	

Activity Status **Completed**

Care coordinators reach out to patients with disease-specific questions and protocols; the system manages alerts and sends notifications to appropriate clinical and service staff if an intervention is required.

Dashboard: **PREMEDEX Program Overview** ▾



**4 Encounters Needing Provider Follow-up**

Search for records

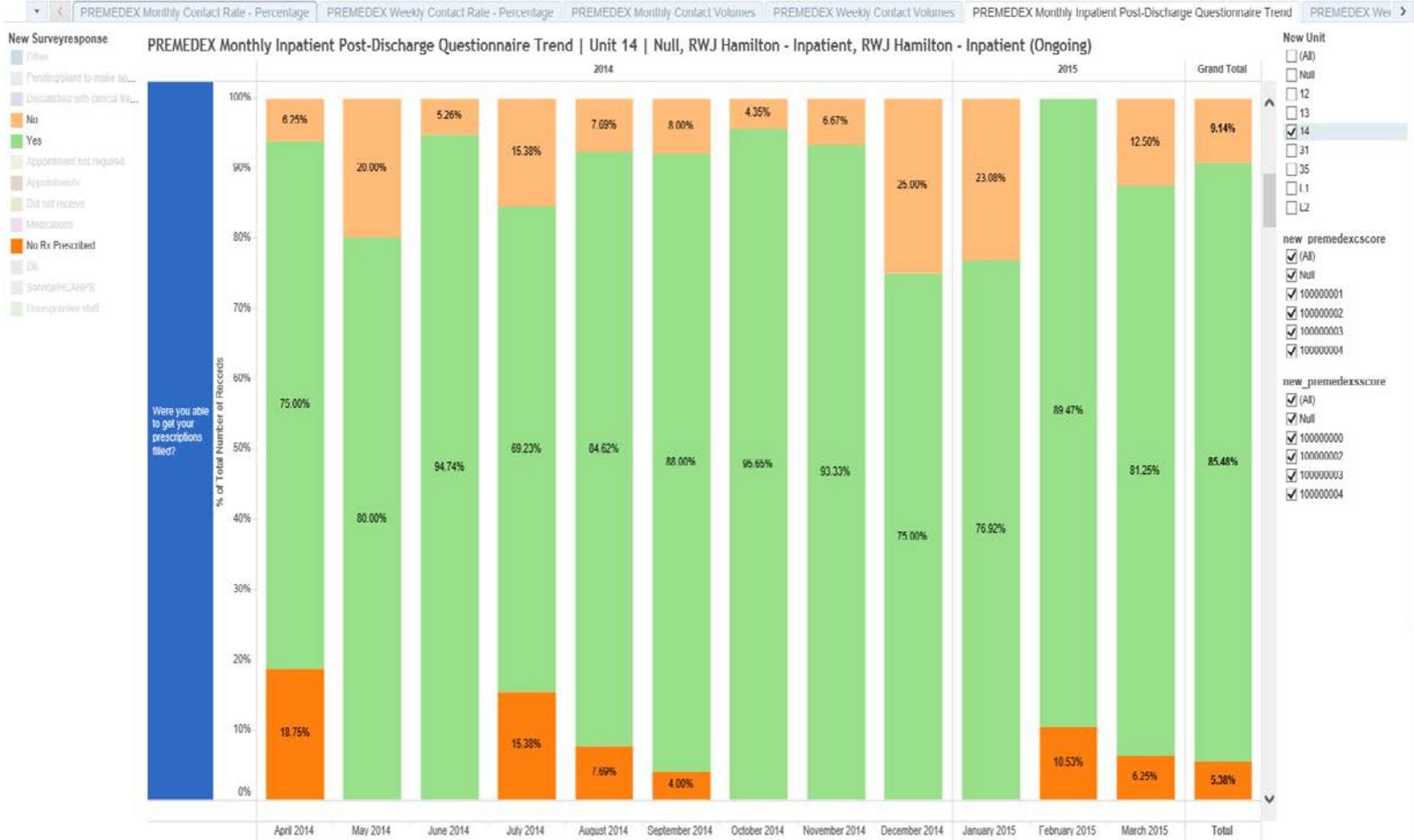
<input type="checkbox"/>	Title	Medical Record...	Patient	Discharge Date ▾	Modified By	Modified On	Hospital Follow-...	Owner	Discharge Depar...	Unit	
<input type="checkbox"/>				3/19/2015 12:00...	System Admin	3/27/2015 6:50...	Urgent Follow-u...	RWJUHH Admin	L2 - SURG TOWER	L2	
<input type="checkbox"/>				3/17/2015 12:00...	Net Admin	3/19/2015 3:04...	Follow-up Requi...	RWJUHH Admin	TELE CENTRAL	13	
<input type="checkbox"/>				3/17/2015 12:00...	Net Admin	3/19/2015 3:45...	Follow-up Requi...	RWJUHH Admin	TELE CENTRAL	13	
<input type="checkbox"/>				3/12/2015 12:00...	Net Admin	3/19/2015 11:07...	Follow-up Requi...	RWJUHH Admin	L2 - SURG TOWER	L2	
<input type="checkbox"/>				3/12/2015 12:00...	System Admin	3/16/2015 3:26...	Follow-up Requi...	RWJUHH Admin	TELE CENTRAL	12	
<input type="checkbox"/>				3/12/2015 12:00...	Nadalie Watkins...	3/19/2015 5:22...	Follow-up Requi...	RWJUHH Admin	L2 - SURG TOWER	L2	
<input type="checkbox"/>				3/12/2015 12:00...	Net Admin	3/19/2015 5:26...	Follow-up Requi...	RWJUHH Admin	TELE CENTRAL	13	
<input type="checkbox"/>				3/11/2015 12:00...	System Admin	3/16/2015 2:40...	Follow-up Requi...	RWJUHH Admin	TELE CENTRAL	14	

We can see all patients who need a follow-up and team members can take appropriate action, document results, and resolve the encounter.

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This platform allows us to easily trend and cross-tab data by Unit, Clinical & Satisfaction tiers, acuity scores, diagnosis, and other data elements, which allows us to gain deeper insights regarding patient feedback and focus on areas that need our attention. The chart above shows trend data for patients who were able to get their prescriptions filled.

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PREMEDEX Monthly Contact Rate - Percentage PREMEDEX Weekly Contact Rate - Percentage PREMEDEX Monthly Contact Volumes PREMEDEX Weekly Contact Volumes PREMEDEX Monthly Inpatient Post-Discharge Questionnaire Trend PREMEDEX Weekly Contact Volumes

New Surveyresponse

PREMEDEX Monthly Inpatient Post-Discharge Questionnaire Trend | Unit 14 | Null, RWJ Hamilton - Inpatient, RWJ Hamilton - Inpatient (Ongoing)

- Other
- Pending plans to make it...
- Disrupted with clinical tre...
- No
- Yes
- Appointment not required
- Appointment
- Did not receive
- Medication
- No Rx prescribed
- OK
- Service/HCARPS
- Unresponsive staff



- New Unit
- (All)
  - Null
  - 12
  - 13
  - 14
  - 31
  - 35
  - L1
  - L2
- new\_premedexscore
- (All)
  - Null
  - 100000001
  - 100000002
  - 100000003
  - 100000004
- new\_premedexscore
- (All)
  - Null
  - 100000000
  - 100000002
  - 100000003
  - 100000004

This chart shows a monthly trend of patients who were able to make and attend their follow-up appointments.

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PREMEDEX Monthly Contact Rate Percentage PREMEDEX Weekly Contact Rate Percentage PREMEDEX Monthly Contact Volumes PREMEDEX Weekly Contact Volumes PREMEDEX Monthly Inpatient Post Discharge Questionnaire Trend PREMEDEX Wei

New Surveyresponse

- Other
- Feedback/plan to pick up p...
- Pending/plan to make ap...
- Left discharge instructions
- Staff was overly rude
- No
- Yes
- Appointments
- Clinical/symptoms
- Discharge instructions
- No Rx Prescribed
- Not Ok
- Ok
- Service/HCW/PS
- Inappropriate staff

PREMEDEX Monthly Inpatient Post-Discharge Questionnaire Trend | Unit 12 | Null, RWJ Hamilton - Inpatient, RWJ Hamilton - Inpatient (Ongoing)



New Unit

- (All)
- Null
- 12
- 13
- 14
- 31
- 35
- L1
- L2

new\_premedexscore

- (All)
- Null
- 100000001
- 100000002
- 100000003
- 100000004

new\_premedexscore

- (All)
- Null
- 100000000
- 100000002
- 100000003
- 100000004

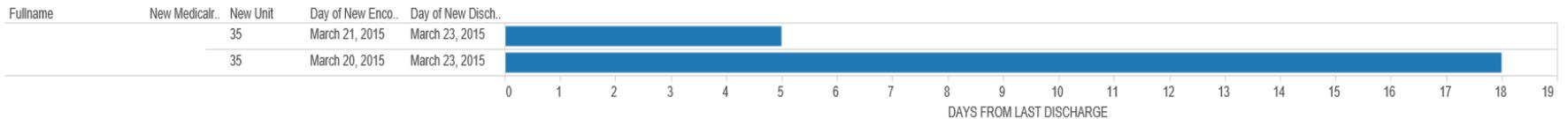
Another example shows patients who did not understand their discharge instructions.

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PREMEDEX Weekly Contact Volumes PREMEDEX Monthly Inpatient Post-Discharge Questionnaire Trend PREMEDEX Weekly Inpatient Post-Discharge Questionnaire Trend PREMEDEX Readmissions - Last 30 Days PREMEDEX Mo

### PREMEDEX Readmissions - Last 30 Days | RWJ Hamilton - Inpatient



We use the system to track readmissions and escalation reasons that provided intervention opportunities for these patients.

Browser: <https://analytics.premedex.com/t/RWJ-Hamilton/views/RWJ-Hamilton-PREMEDEXAnalytics/PREMEDEXWeeklyClinical#1>

Page Title: RWJ - Hamilton - PREMEDEX Analytics

Navigation: Share, Remember my changes, Edit, Download

Dashboard: PREMEDEX Weekly Clinical

Unit: RWJ Hamilton - Inpatient

New Unit	Week of ACTUHEART	Fullname	New Medical recordnumber	Telephone#	Did you make/keep your follow-up appointments?	4 Why? (Categorize Response)	Please Explain	Do you understand the written discharge instructions we provided?	Were you satisfied with the care you received from the physician(s) and nursing staff?	6 Why? (Categorize Response)	Please Explain	Additional comments
					No	Other	Pts. wife stated that she is having health issues as well. She was at the Cardiologist at the time of the call. Pts. wife asked to not continue with the rest of the survey.					Pts. wife stated that he is still really weak.
					Yes			Yes	Yes			Pt. stated the print on his discharge papers was very faint. Also, stated that what the paperwork said was different from what a nurse on the phone told him. Thirdly, pt. stated he was put in a room with another pt. that had bowel problems. He stated the exp.
35	March 22, 2015				Yes			No	No	Other		Pt. stated she was not satisfied with some of the staff. She said she was depressed and everyone look it lightly.
L2	March 22, 2015				Yes			Did not receive	Yes	Other		Pt. stated he was satisfied with his care.

Filters: New Unit (All, Null, 12, 13, 14, 31, 35, L1, L2), new\_premedexscore (All, Null, 10000000, 10000002, 10000003, 10000004)

We can also drill down to detailed feedback and comments to gain specific patient insights. Overall, this system allows us to track and trend patient feedback, while also tracking the overall program success metrics.

# *Our Success So Far...*

- Creation of a multidisciplinary team that not only deals with a specific disease but with new means or coordinating care not only within our 4 walls but the extended care setting, the outpatient office and the home.
- Increased awareness within our own hospital of CAP treatment and the role we play in post discharge care.
- Improved and engaged dialogue with our outpatient partners.
- Engagement of our patients and their families as being part of not incidental to a positive outcome in their health and well being.
- Creation of monitoring tools for pre discharge activities.

# *What is next ??????*

- Continue to utilizing data and providing feedback to the different disciplines and stakeholders.
- Engage providers and patients to participate improving outcomes and demonstrating that these changes benefit both the provider and the patient/family.
- Identify any factors/issues that undermine patient /family compliance by utilizing Premedex feedback tools and data.
- Continue to review data, processes and results looking for the next improvement we can make as we continue to chase ZERO.



*Obrigado!*

*Köszönettel*

*Gracias*

ขอบคุณ

Bedankt

Tesekkürler

*Hvala*



THANK  
YOU

*Grazie*



*Merci*



Ευχαριστώ

*Vielen*  
Dank

شكراً

*Díky*



תודה