

E-PRESCRIBING SUMMIT

October 9, 2019

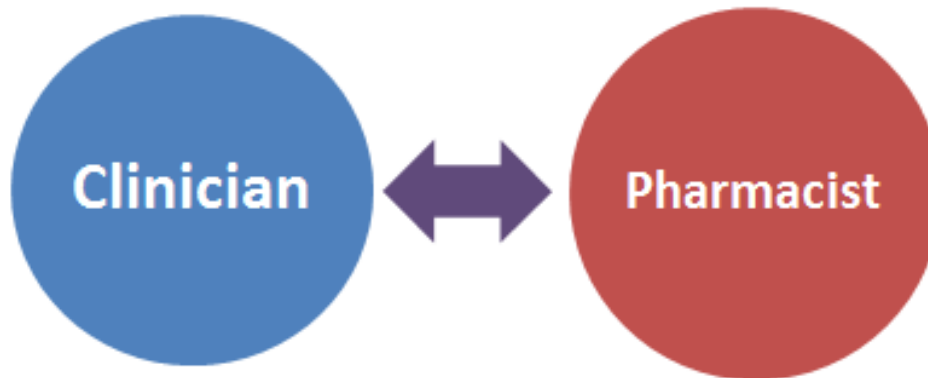
Lillian Nieves, PharmD
Andrew Saal, MD MPH



**We all have unique experiences of e-
Prescribing from our point of view.**

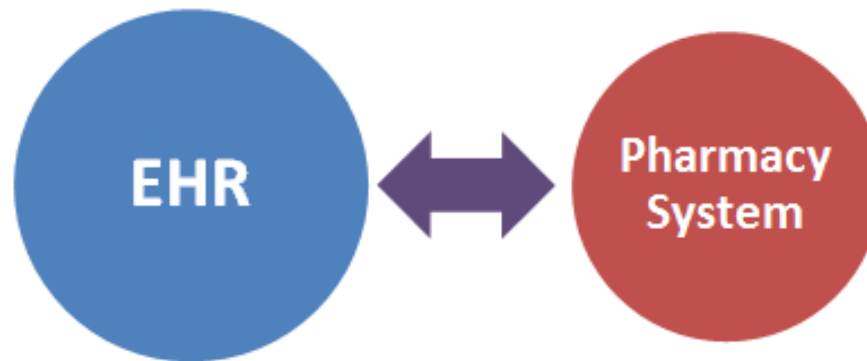
THE DIGITAL HIGHWAY

What Could Be Simpler?



THE DIGITAL HIGHWAY

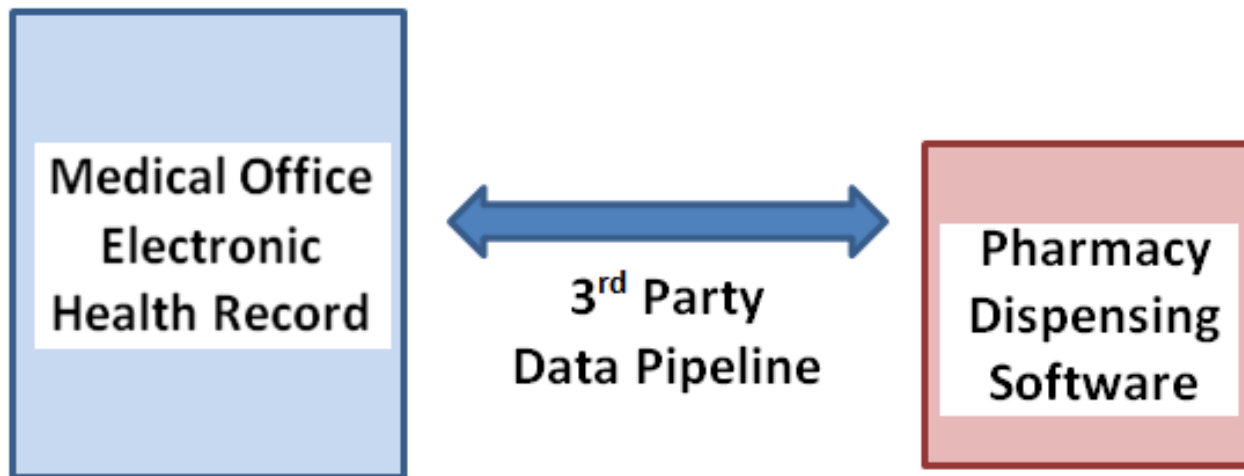
The Actual Problem



We have multiple computer systems trying to exchange information

THE DIGITAL HIGHWAY

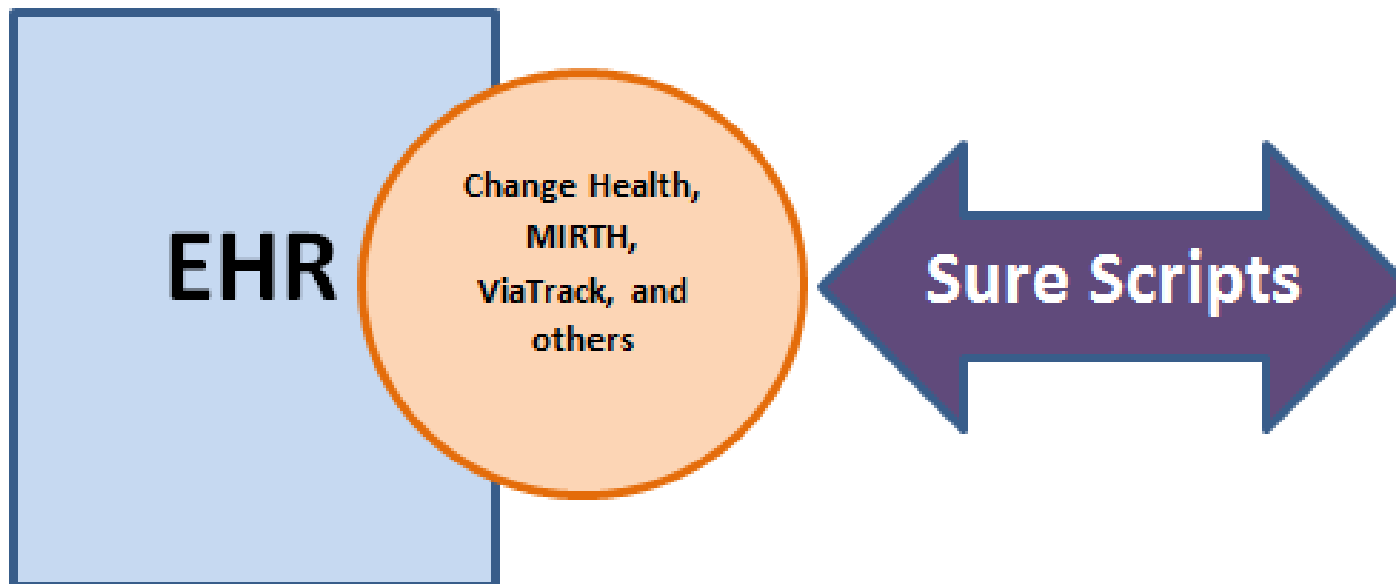
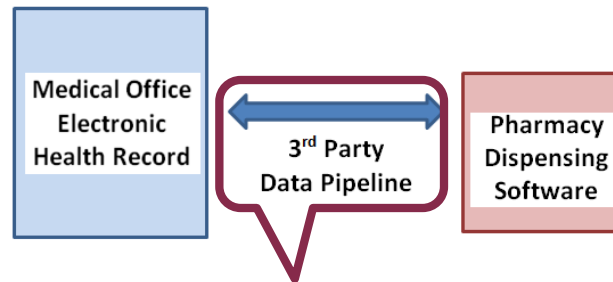
Because Systems Cannot *Effectively*
Talk to Each Other...



We rely on 3rd party software
to translate and share information

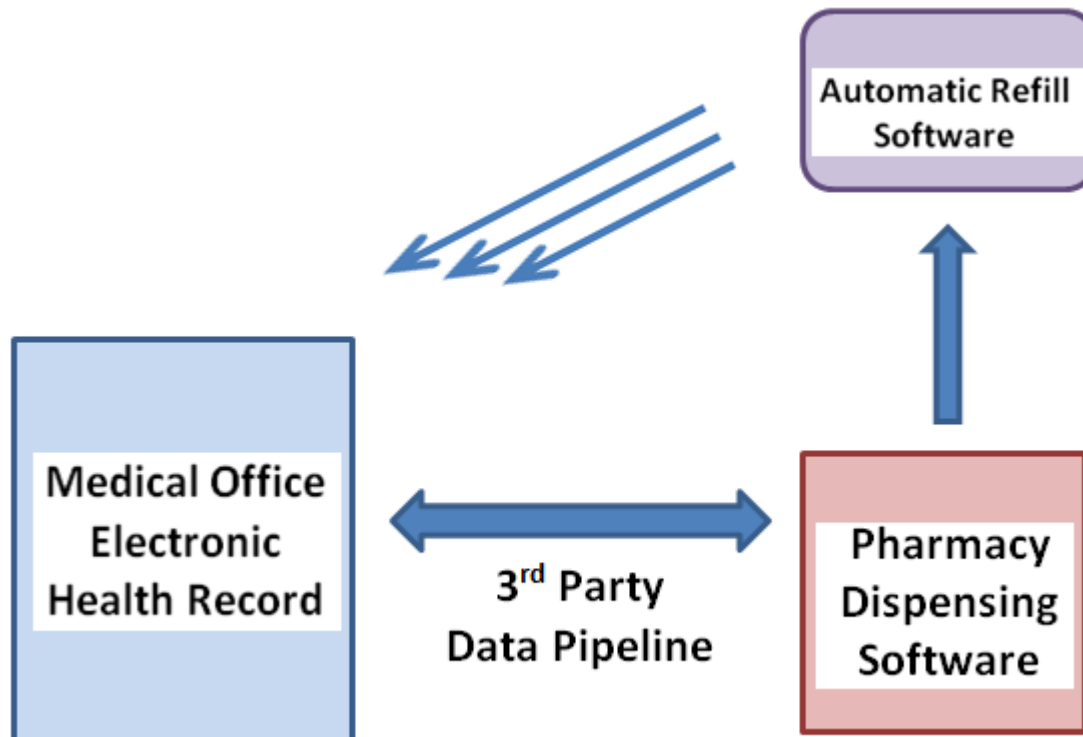
THE DIGITAL HIGHWAY

A Closer Look at the Data Pipeline



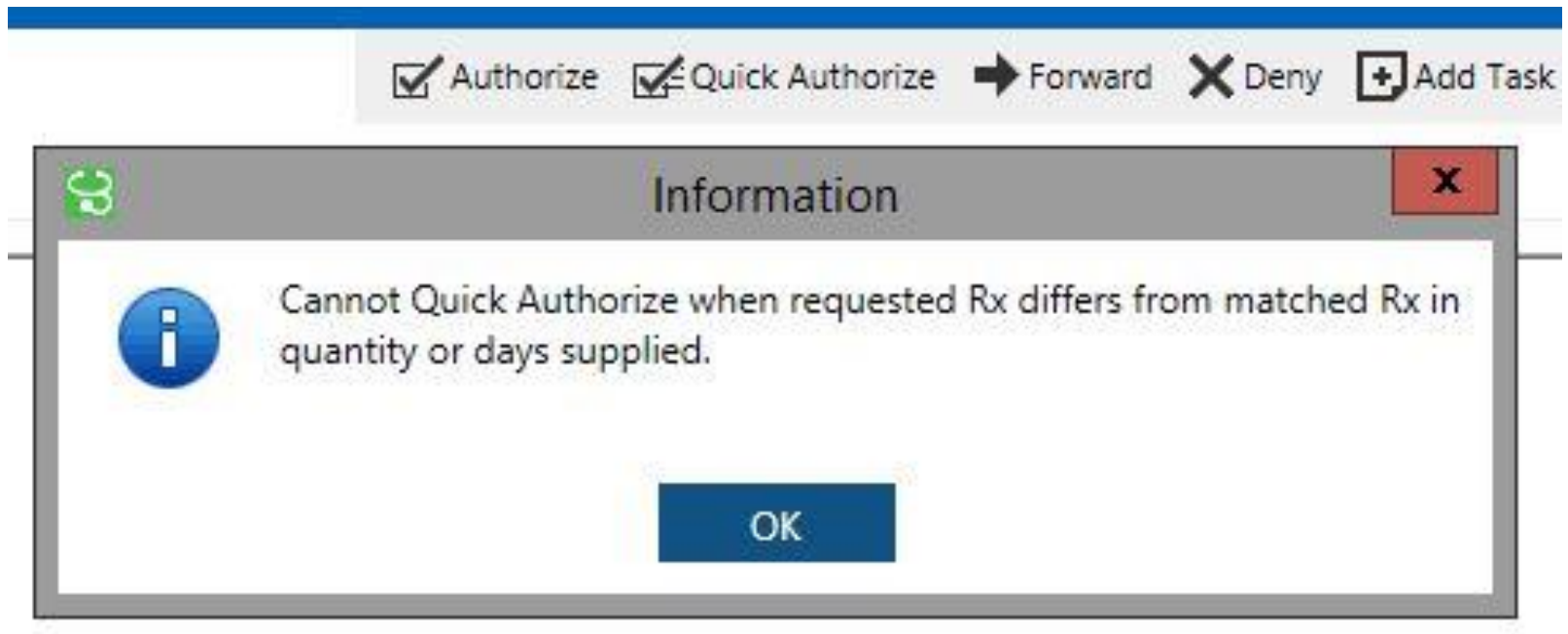
THE DIGITAL HIGHWAY

**Different types of errors occur
at different points**

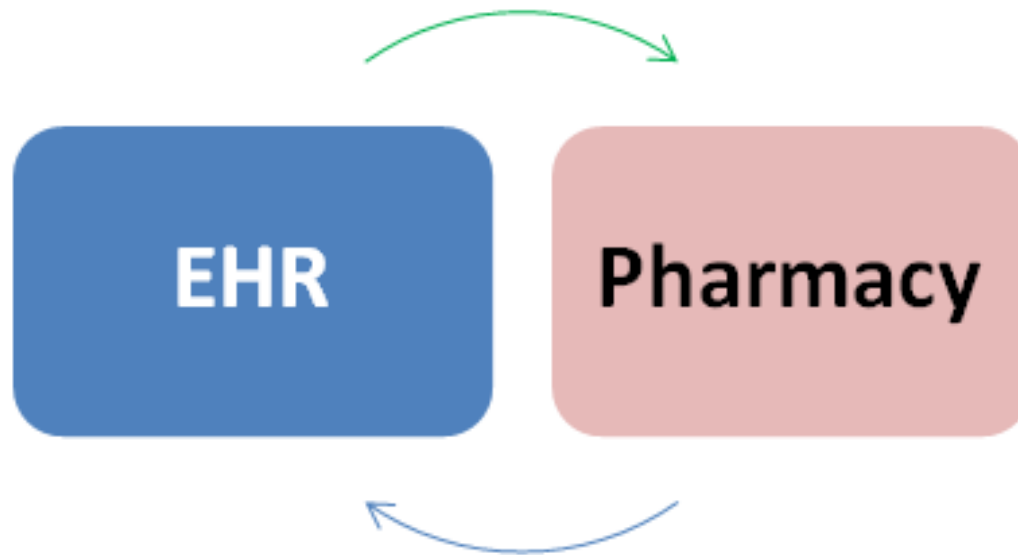


ERROR TYPES

◉ Refill Request Crashes



MOVING THE DATA



You got the Rx to go *forward* to the pharmacy...
But can it return *cleanly* for a refill request?

Mismatch = System Error

ERROR TYPES

◉ Refill Request Crashes

- Mismatched Quantity
- Mismatched Days Supplied

ENALAPRIL 5MG TAB

Authorize RxRequest Type: **EDI**Request Priority: **Routine**Provider: **Judith A. Nudelman MD**Drug: **ENALAPRIL 5MG TAB**Quantity: **28** Units: **tablet**Days Supplied: **28** Refills: **0**Dispense As Written: **N**

Sig:

Patient Instructions: **TAKE 1 TABLET BY MOUTH DAILY**Diagnosis: **I10**Pharmacy Notes: **Maximum Refills Reached**Request Date: **08/13/19**Comments: [Created by System on 08/13/19 - 09:35 am: TAKE 1 TABLET BY MOUTH DAILY](#)**Request was matched to a renewable Rx written 08/31/18. Rx(7040542) will be Renewed.****Matched Renewable Rx**Drug: **Enalapril Maleate 5MG Oral Tablet**Quantity: **90** Units: **tablet**Days Supplied: **90** Refills: **3**Dispense As Written: **N**Sig: **daily - once daily**Patient Instructions: **once daily**Diagnosis: **I10**Pharmacy Notes: **Maximum Refills Reached****Pharmacy****GENOA HEALTHCARE - Providence****530 N MAIN ST****PROVIDENCE, RI 02904**

Issue Method:

Electronic

Printer:

No Printer Selected

RANGE DOSING?

Sunshine, Little Mary (testy test test) ⓘ 01/01/1920 99y F



Weight: **120lbs 0oz (54.43kg)**

Taken: **02/12/2018** [New Weight](#)

Drug: **Ibuprofen 400 MG Oral Tablet** ▼

Diagnosis: **185.01 - Esophageal varices with bleeding** ▼

Sig: **q4-6h - 1 every 4 - 6 hours as needed** ▼

[Dose Calculator](#)

Quantity: **0** ▼ Units: **tablet** ▼

Days: **100** ▼ Refills: **2** ▼ ☐ PRN ☐ DAW

Pat. Instruct.: **1 every 4 - 6 hours as needed** ▲▼



Pharm. Notes: ▲



RX REQUEST

IBUPROFEN 400MG TAB

Authorize Rx

Request Type: **EDI**

Request Priority: **Routine**

Provider:

Andrew Saal MD

Drug:

IBUPROFEN 400MG TAB

Quantity

100

Units:

tablet

Days Supplied:

20

Refills:

0

Dispense As Written:

N

Sig:

Patient Instructions: **TAKE 1 TABLET BY MOUTH EVERY 4 TO 6 HOURS AS NEEDED FOR PAIN**

Diagnosis:

Pharmacy Notes:

Maximum Refills Reached

Request Date:

07/29/19

Comments:

Created by System on 07/29/19 - 09:12 am: TAKE 1 TABLET BY MOUTH

Request was matched to a renewable Rx written 07/28/19. Rx(9024348) will be Renewed.

Matched Renewable Rx

Drug:

Ibuprofen 400MG Oral Tablet

Quantity:

100

Units:

tablet

Days Supplied:

30

Refills:

5

Dispense As Written:

N

Sig:

q4-6h - 1 every 4 - 6 hours as needed

Patient Instructions:

1 every 4-6 hours as needed for pain

Diagnosis:

Pharmacy Notes:

WHAT DOES “PRN” MEAN?

Sunshine, Little Mary (testy test test) ⓘ 01/01/1920 99y F



Weight: **120lbs 0oz (54.43kg)**

Taken: **02/12/2018** [New Weight](#)

Drug: hydrOXYzine HCl 25 MG Oral Tablet ▼

Diagnosis: F06.4 - Anxiety disorder due to known physiological condition ▼

Sig: No Sig Selected ▼ [Dose Calculator](#)

Quantity: 60 ▼ Units: tablet ▼

Days: 30 ▼ Refills: 0 ▼ ☒ PRN ☐ DAW

Pat. Instruct.: Take 1 tablet by mouth 3 times daily only if needed for anxiety



Pham. Notes:

ERROR TYPES

- ◉ **Refill Request Crashes**
 - NDC Code

Does your EHR rely on unique NDC codes during the selection of the medication?

Which generic aspirin you want? CVS brand? Wal-Mart brand? Walgreen's brand? The pharmacist is glad to adjust that Rx once it arrives.

And everything is fine... until it's time for a refill

RX REQUEST

ASPIRIN 81MG EC TAB

Authorize Rx

Request Type: EDI

Request Priority: Routine

Provider: Judith A. Nudelman MD

Drug: ASPIRIN 81MG EC TAB

Quantity: 90 Units: tablet

Days Supplied: 90 Refills: 0 Dispense As Written: N

Sig:

Patient Instructions: TAKE 1 TABLET BY MOUTH DAILY

Diagnosis:

Pharmacy Notes:

Request Date: 07/30/19 Comments: [Created by System on 07/30/19 - 10:52 am: TAKE 1 TABLET BY MOUTH DAILY](#)

Request contains a missing or invalid drug code. Could not match to existing renewable Rx.

Authorize New Rx

Drug: ASPIRIN 81MG EC TAB

Quantity: 90 Units: tablet

Days Supplied: 90 Refills: 0 Dispense As Written: N

Sig:

Patient Instructions: TAKE 1 TABLET BY MOUTH DAILY

Diagnosis:

Pharmacy Notes:

ERROR TYPES

◉ Refill Request Crashes

- Units

8 Ounces or 120 mL?

1 bottle of Miralax?

1 grain of aspirin?

1 large bottle of Lubriderm?

1 MDI Inhaler vs. 18 grams?



FROM	CREATED	DUE	PRIORITY	RELATED
System	08/06/19	08/06/19	(high)	Judith A

RX REQUEST

POLYETHYLENE GLYC 3350 NF POW

Authorize Rx

Request Type: **EDI**

Request Priority: **Routine**

Provider:

Judith A. Nudelman MD

Drug:

POLYETHYLENE GLYC 3350 NF POW

Quantity

510

Units:

gram

Days Supplied:

30

Refills:

0

Dispense As Written:

N

Sig:

Patient Instructions:

DISSOLVE 17GRAMS IN 8OZ OF LIQUID AND DRINK DAILY AS NEEDED

Diagnosis:

R10.30

Pharmacy Notes:

Maximum Refills Reached

Request Date:

08/06/19

Comments:

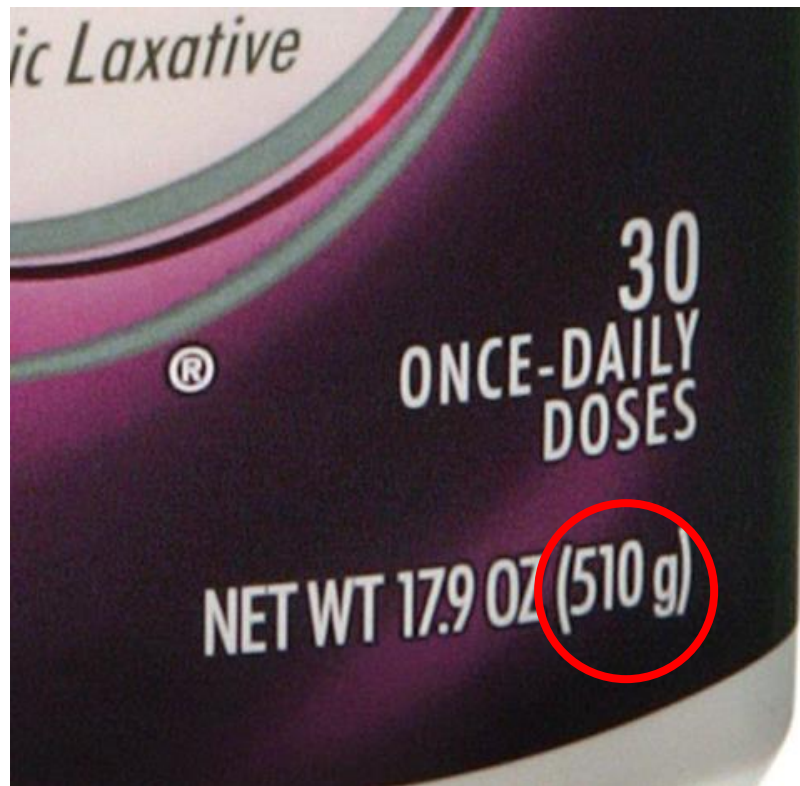
[Created by System on 08/06/19 - 01:02 pm: DISSOL](#)

Request was matched to a renewable Rx written 01/10/19. Rx(7753212) will be Renewed.



“Lately I’ve taken to googling images of some OTC meds just to get the units right before I actually prescribe them.”

- Doc in survival mode



MISMATCHED UNITS

- ◉ Data Governance

- Is everyone using the same set of rules?



National Council for Prescription Drug Programs

MISMATCHED UNITS

- ◉ Data Governance

- *Is everyone using the same definitions?*

CMS proposed rule updates e-prescribing standards to reduce provider burden

by Heather Landi | Jun 19, 2019 10:15am

The proposed rule would implement new prior authorization transaction standards for the Part D e-prescribing program beginning in January 2021. If finalized, all Medicare Part D plans would be required to support electronic prior authorization transaction standards that were developed by the National Council for Prescription Drug Plans (NCPDP).

- Retirement of NCPDP SCRIPT Version 5.0 in favor of the upgraded NCPDP SCRIPT Version 8.1.

MISMATCHED UNITS

- ◉ Data Governance

- Is everyone using the same set of rules?

1 Inhaler, please

Change
Health

What's an "Inhaler"?

Pharmacy
Computer

ALBUTEROL HFA (VENTOLIN) INH

Authorize Rx	Request Type: EDI	Request Priority: Routine
Provider:	Andrew Saal MD	
Drug:	ALBUTEROL HFA (VENTOLIN) INH	
Quantity	18	Units: inhaler
Days Supplied:	30	Refills: 1
		Dispense As Written: N
Sig:		
Patient Instructions:	INHALE 2 PUFFS EVERY 4 HOURS ONLY IF NEEDED. USE SPACER	
Diagnosis:	J45.909	
Pha		
Rec		

Most pharmacy software allows
albuterol to only be dispensed in grams
1 inhaler has 18 grams

Reque			
Match			
Drug			
Quar			
Days Supplied:	30	Refills: 3	Dispense As Written: N
Sig:	2pu - 2 puffs Q4-6H PRN		
Patient Instructions:	2 puffs Q4-6H PRN		
Diagnosis:	J45.909		
Pharmacy Notes:			

LOST REFILLS



FROM	CREATED	DUE	PRIORITY	RELATED PROVIDER
System	07/25/19	07/25/19	(high)	Judith A. Nudelman MD

RX REQUEST



MONTELUKAST 10MG TABLETS

Authorize Rx	Request Type: EDI	Request Priority: Routine
Provider:	Judith A. Nudelman MD	
Drug:	MONTELUKAST 10MG TABLETS	
Quantity:	30	Units: tablet
Days Supplied:	30	Refills: 0
Sig:	Dispense As Written: N	
Patient Instructions:	TAKE 1 TABLET BY MOUTH ONCE DAILY	
Diagnosis:	J45.998	
Pharmacy Notes:		
Request Date:	07/25/19	Comments: <u>Created by System on 07/25/19 - 05:45 am: TAKE 1 TABLET BY MOUTH ONCE</u>

Request was matched to a renewable Rx written 04/16/19. Rx(8386950) will be Renewed.

Matched Renewable Rx

Drug:	Montelukast Sodium 10MG Oral Tablet		
Quantity:	90	Units:	tablet
Days Supplied:	90	Refills:	3
	Dispense As Written:		N

Sig:

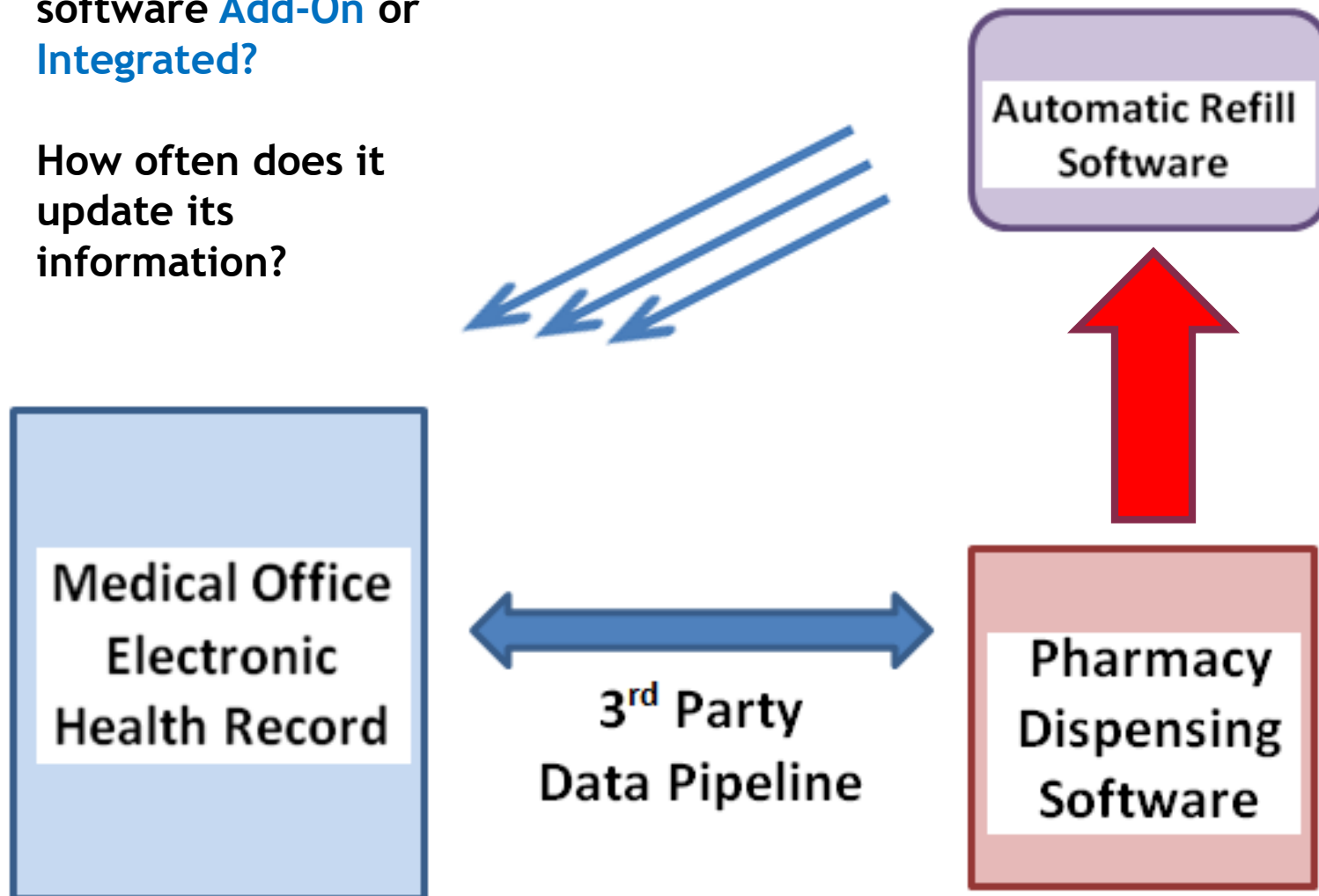
Patient Instructions: **TAKE 1 TABLET BY MOUTH ONCE DAILY**



Wait a second...
Did my patient *really* request this refill?

Is the auto-refill software **Add-On** or **Integrated**?

How often does it update its information?



AUTO-REFILL SOFTWARE

- Did my patient really request that refill?

Patient Instructions: **TAKE 1 TABLET BY MOUTH EVERY 8 HOURS**
Diagnosis: **M54.5**
Pharmacy Notes: **Maximum Refills Reached**
Request Date: **08/01/19** Comments: Created by System on 08/02/19 - 07:44 am: TAKE 1 TABLET

Created by System

The best of intentions... with a marketing plan

AUTO-REFILL SOFTWARE

- A two-edged sword
 - Good idea for diabetes and blood pressure meds...
 - But muscle relaxers?
 - Cold medicines?
 - Ibuprofen 800mg?
 - Permethrin?
 - Antibiotics?
 - Albuterol inhalers?
 - PRN Medications for the elderly?

Who decides which drugs are eligible for auto-refills?

AUTO-REFILL SOFTWARE

- Time lag to update
 - Wait, I filled this already. Why are they still sending more refill requests?
 - I was too busy to remember if I had already done the refill, so I did it again when they asked...

So what happens when the community pharmacist receives 3+ valid refills for the same medication within 48 hours?

AUTO-REFILL SOFTWARE

!	1	Rx Request	09/17/19	OMEPRazole 20MG CAPSULES
!	1	Rx Request	09/16/19	OMEPRazole 20MG CAP
!	1	Rx Request	09/16/19	OMEPRazole 20MG CAP

No, really. I stopped the PPI after they got out of the hospital.

	2	Rx Request	09/12/19	Gabapentin 300 MG CAPS
!	1	Rx Request	09/11/19	GABAPENTIN 400MG CAP
!	1	Rx Request	09/12/19	GABAPENTIN 400MG CAP
	2	Rx Request	09/11/19	Gabapentin 400 MG CAPS

Now, how did they end up on two different doses of gabapentin?

AUTO-REFILL SOFTWARE

- “Patient Requests 90 Day Supply” and your software allows the change with a click
- Sounds great at first...

“The DANGER is that it does NOT update the EHR Medication module with this new prescription we just approved. This is a Surescripts function- it can add the #90 Rx, but it cannot cancel the prior #30 Rx. This is EXTREMELY dangerous.”

The screenshot shows a medical software interface for prescription management. At the top, it displays '1 Fill with: 0' and 'refill(s) Total Fills: 1'. A yellow warning icon is next to the text 'Patient matched via PQM'. Below this is a 'Note to Pharmacy' text area. On the right side, patient information is listed: '1763 BROAD ST CRANSTON, RI 029053532', '(401) 461-6770 (P)', and '(401) 461-3925 (F)'. There are buttons for 'Medications' and 'Lab Results'. At the bottom, a navigation bar contains buttons: 'New', 'Approve', 'Deny', 'Details', 'Accept', 'Reject', 'Remove', 'Reassign', 'Chart', and 'Orders'. The 'Approve' button is highlighted with a red rectangular box.

AUTO-REFILL SOFTWARE

- But I've already discontinued that medication...

Authorize Quick Authorize Forward Deny Add Task Note

Select Denial Reason

Requested Drug: **IBUPROFEN 600 MG TABLET**
Dosage: **45 days**

Prescriber not associated with this practice or location
Request already responded to by other means (e.g. phone)
Not the patient's PCP
Medication has been discontinued.
Denied with new RX to follow
Pt has refills remaining.
Patient is on a different dose
This med rx'd for pt, but not by me(PCP)
Patient Information is missing/incorrect
Pt w/newer Rx on file; sent previously.
Prev Rx had RF's. Please check hard copy
Pt should have enough until f/u appt

[Other denial reason...](#) Cancel

And told them via a nice HL7 compatible “No” message

AUTO-REFILL SOFTWARE

- But I've already discontinued that medication
- And told the pharmacy to discontinue it...
- Three times...
- But the auto-refill requests kept coming in...
- Until one of my colleagues refilled it while covering for me



AUTO-REFILL SOFTWARE

RX REQUEST

LORATADINE 10 MG TABLET

Authorize Rx	Request Type: EDI	Request Priority: Routine
Provider:	Andrew Saal MD	
Drug:	LORATADINE 10 MG TABLET	
Quantity	90	Units: tablet
Days Supplied:	90	Refills: 3
Sig:	Dispense As Written: N	
Patient Instructions:	TAKE 1 TABLET BY MOUTH EVERY DAY	
Diagnosis:	J45.909	
Pharmacy Notes:		
Request Date:	09/26/19	Comments: <u>Created by System on 09/26/19 - 04:18 am:</u>

Claritin Forever!

AUTO-REFILL SOFTWARE

07/28/40 79y F System 07/31/19 07/31/19 (high) Judith A. Nudelman MD

RX REQUEST

FLUTICASONE 50MCG SPR

Authorize Rx

Request Type: **EDI**

Request Priority: **Routine**

Provider:

Judith A. Nudelman MD

Drug:

FLUTICASONE 50MCG SPR

Quantity

16

Units: **gram**

Days Supplied:

30

Refills: **0**

Dispense As Written: **N**

Sig:

Patient Instructions: **USE 2 SPRAYS IN EACH NOSTRIL DAILY**

Diagnosis:

Pharmacy Notes: **Maximum Refills Reached**

Request Date:

07/31/19

Comments: Created by System on 07/31/19 - 01:05 pm:

Flonase Forever!

AUTO-REFILL SOFTWARE

RX REQUEST

NICOTINE TD 14MG/24H DIS

Authorize Rx	Request Type: EDI	Request Priority: Routine
Provider:	Andrew Saal MD	
Drug:	NICOTINE TD 14MG/24H DIS	
Quantity	28	Units: each
Days Supplied:	28	Refills: 0
Sig:		Dispense As Written: N
Patient Instructions:	APPLY 1 PATCH DAILY	
Diagnosis:		
Pharmacy Notes:	Maximum Refills Reached	
Request Date:	08/07/19	Comments: <u>Created by System on 08/07/19 -</u>

Nicotine patches forever!

AUTO-REFILL SOFTWARE

RX REQUEST

ACCU-CHEK GUIDE MONITOR SYSTEM

Authorize Rx	Request Type: EDI	Request Priority: Routine
Provider:	Judith A. Nudelman MD	
Drug:	ACCU-CHEK GUIDE MONITOR SYSTEM	
Quantity	1	Units: not specified
Days Supplied:	365	Refills: 0 Dispense As Written: N
Sig:		
Patient Instructions:	TEST CUATRO VECES AL DIA	
Diagnosis:	E11.65	
Pharmacy Notes:		
Request Date:	08/02/19	Comments: <u>Created by System on 08/02/19 - 10:46 am: TEST CUATRO VECES AL DIA</u>

Request was matched to a renewable Rx written 06/29/18. Rx(6729511) will be Renewed.

Matched Renewable Rx

Drug:	Accu-Chek Aviva Plus w/Device Kit		
Quantity:	1	Units: kit	
Days Supplied:	30	Refills: 0	Dispense As Written: N
Sig:	qid - four times a day		
Patient Instructions:	four times a day		
Diagnosis:	E11.65		

A new glucometer every year!

AUTO-REFILL SOFTWARE

RX REQUEST

IBUPROFEN 800MG TABLETS

Authorize Rx	Request Type: EDI	Request Priority: Routine
Provider:	Andrew Saal MD	
Drug:	IBUPROFEN 800MG TABLETS	
Quantity	90	Units: tablet
Days Supplied:	30	Refills: 0
		Dispense As Written: N
Sig:		
Patient Instructions:	TAKE 1 TABLET BY MOUTH EVERY 8 HOURS WITH FO	
Diagnosis:		
Pharmacy Notes:		
Request Date:	07/30/19	Comments: <u>Created by System on 07/30/19 -</u>

Ibuprofen 800mg... forever?

But the patient said their back injury resolved

AUTO-REFILL SOFTWARE

RX REQUEST

BANOPHEN 50 MG CAPSULE

Authorize Rx	Request Type: EDI	Request Priority: Routine
Provider:	Andrew Saal MD	
Drug:	BANOPHEN 50 MG CAPSULE	
Quantity	30	Units: capsule
Days Supplied:	30	Refills: 0
		Dispense As Written: N
Sig:		
Patient Instructions:	TAKE 1 CAPSULE BY MOUTH EVERYDAY AT BEDTIME	
Diagnosis:		
Pharmacy Notes:		
Request Date:	10/04/19	Comments: <u>Created by System on 10/05/19 - 03:26 am:</u>

50mg of Diphenhydramine for an elder? Even though I've discontinued it twice already?

AUTO-REFILL SOFTWARE

Patient Name:	
Member ID:	0152545531
Date of Birth:	August 15, 1949
Potential Clinical Concern(s)	
Drug-Age: Hydroxyzine >= 65 year-old Hydroxyzine is not recommended in the elderly due to anticholinergic adverse events (sedation, dizziness, blurred vision) to which patients 65 years of age and older are more susceptible. Please avoid use in this population. 1. American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults. J Am Geriatr Soc. 00(00):1-21, 2019.	

While the pharmacy software sends out a BEERS criteria alert in the name of patient safety?

AUTO-REFILL SOFTWARE

RX REQUEST

ALBUTEROL SULFATE HFA 90MCG

Authorize Rx	Request Type: EDI	Request Priority: Routine
Provider:	Judith A. Nudelman MD	
Drug:	ALBUTEROL SULFATE HFA 90MCG	
Quantity	18	Units: gram
Days Supplied:	17	Refills: 0
Sig:	Dispense As Written: N	
Patient Instructions:	INHALE 1 PUFF BY MOUTH EVERY 4 TO 6 HOURS AS NEEDED	
Diagnosis:		
Pharmacy Notes:	Maximum Refills Reached	
Request Date:	07/30/19	Comments: <u>Created by System on 07/30/19 - 12:02 pm:</u>

Albuterol forever?

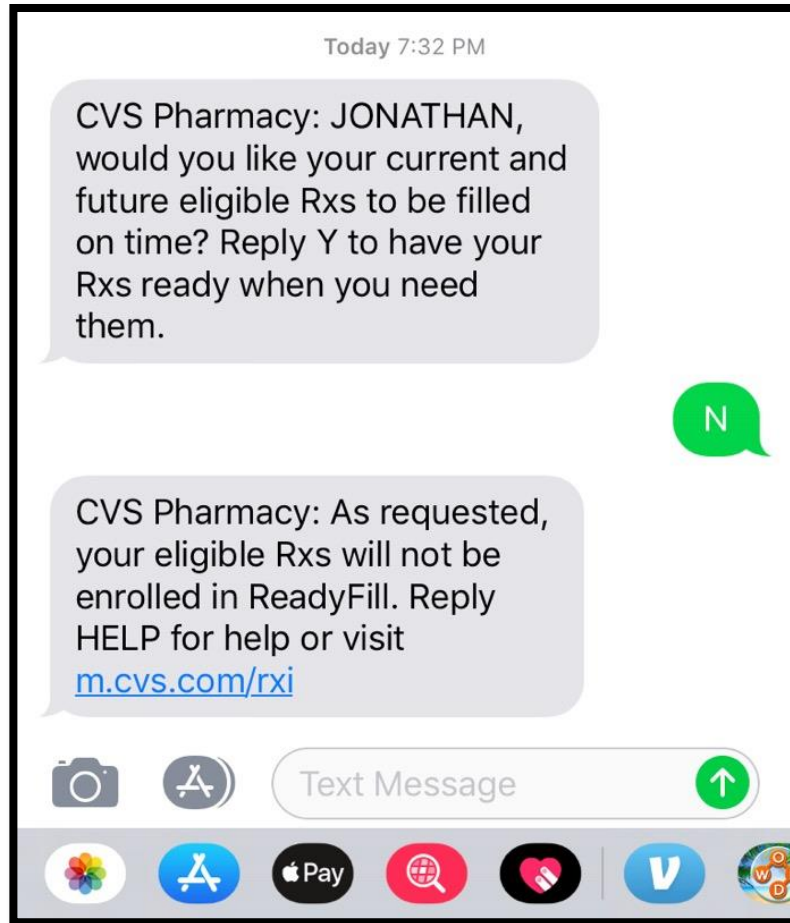
But they were only a little wheezy during bronchitis

AUTO-REFILL SOFTWARE

Member ID:	01662032500
Date of Birth:	July 23, 1965
Potential Clinical Concern(s)	
Gap in Care: Persistent asthma with a controller ratio < 0.5 Our records indicate that your patient has persistent asthma and has an asthma medication ratio of less than 0.5, defined as the ratio of the number of long-term control medications (LTCMs) to the number of LTCM plus short-acting beta-agonist (SABA) medications during the six month review period. Thus, the identified patient may potentially have inadequate asthma control. Both the National Institutes of Health and the Global Initiative for Asthma recommend the daily use of LTCM, particularly inhaled corticosteroids, to achieve and maintain control of persistent asthma. Quick-relief medications such as SABAs are used on an as needed basis to relieve acute symptoms and prevent exercise-induced bronchospasms only. If clinically appropriate, please consider adjusting the long-term control medication for the identified patient.	

While sending out an alert because there isn't an asthma controller agent to offset all the albuterol that their own software triggered?

AUTO-REFILL SOFTWARE



*Signing up for Auto-Refill
Did you really agree? Can you turn it off?*

AUTO-REFILL SOFTWARE



Did someone say “patient safety issue?”

AUTO-REFILL SOFTWARE

RX REQUEST

NICOTINE TD 14MG/24H DIS

Authorize Rx

Request Type: **EDI**

Provider:

Andrew Saal MD

Drug:

NICOTINE TD 14MG/24H I

Quantity

28

Units:

each

Days Supplied:

28

Refills:

0

Sig:

Patient Instructions: **APPLY ONE PATCH ON TH**

Diagnosis:

Pharmacy Notes:

Maximum Refills Reached

Request Date:

09/25/19

Comments:

Request was matched to a renewable Rx written

Select Denial Reason

Enter Denial Reason

Denial Reason:

take this off auto-refill please!



Quick Text

Send

*Nicotine patches forever without a taper?
Who's running the care plan?*

AUTO-REFILL SOFTWARE

05/10/93 26y M

System 10/06/19 10/06/19 (high) Andrew Saal MD

RX REQUEST

LORATADINE 10 MG TABLET

Authorize Rx Request Type: **EDI** Request
Provider: **Andrew Saal MD**
Drug: **LORATADINE 10 MG TABLET**
Quantity: **90** Units: **tablet**
Days Supplied: **90** Refills: **11** Dispense
Sig:
Patient Instructions: **TAKE 1 TABLET BY MOUTH DAILY FOR**
Diagnosis:
Pharmacy Notes:
Request Date: **10/06/19** Comments: [Created by:](#)

Select Denial Reason

Requested

Drug: **LORATADINE 10 MG TABLET**
Dosage: **90 days**

Patient no longer under prescriber care
Patient has requested refill too soon
Medication not
Patient should
Refill not app
Patient needs
Prescriber not
Request alrea
Not the patient
Medication ha
Denied, with r
Pt has refills r

Deny Request Completed



Request Has Been Denied.

OK

Doing the right thing for patient safety
should never require *more* clicks

SMALL GROUP DISCUSSIONS

- ◉ What types of e-Rx errors are you seeing?
- ◉ Can you describe a time where patient safety was jeopardized by an e-Rx system error?
- ◉ Can you share some best practices that:
 - Improve patient safety?
 - Reduce task clutter / clinician burn-out?
 - Reduce inappropriate prescribing patterns?