

# Using Excel in Pharmacy Purchasing and Mitigation of Drug Shortages

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# OBJECTIVES

- 1) Discuss the Importance of Early Information/News that Impacts Drug Shortages
- 2) Explain how to Recognize and Mitigate Supply Chain Disruptions
- 3) Explain how to Use Excel to Track and Maintain Adequate Inventory during Times of Crisis and Daily Duties.  
Examples include Responses to the Following Situations:  
Puerto Rico Hurricane, COVID-19, and Daily Ordering
- 4) Explain how to Use Excel Syntax in Analyzing Daily Order to Mitigate Drug Shortages Early and Proactively

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# DISCLOSURES

- I have no conflict of interest in relation to this presentation.

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25 NEWS Weather Live Stream Video News Sports Traffic Election 2020 25 Cares More

## Twiggy the water-skiing squirrel retires act after nearly 40 years

**Twiggy** the water-skiing squirrel has officially retired.



Twiggy The Water-Skiing Squirrel Retires

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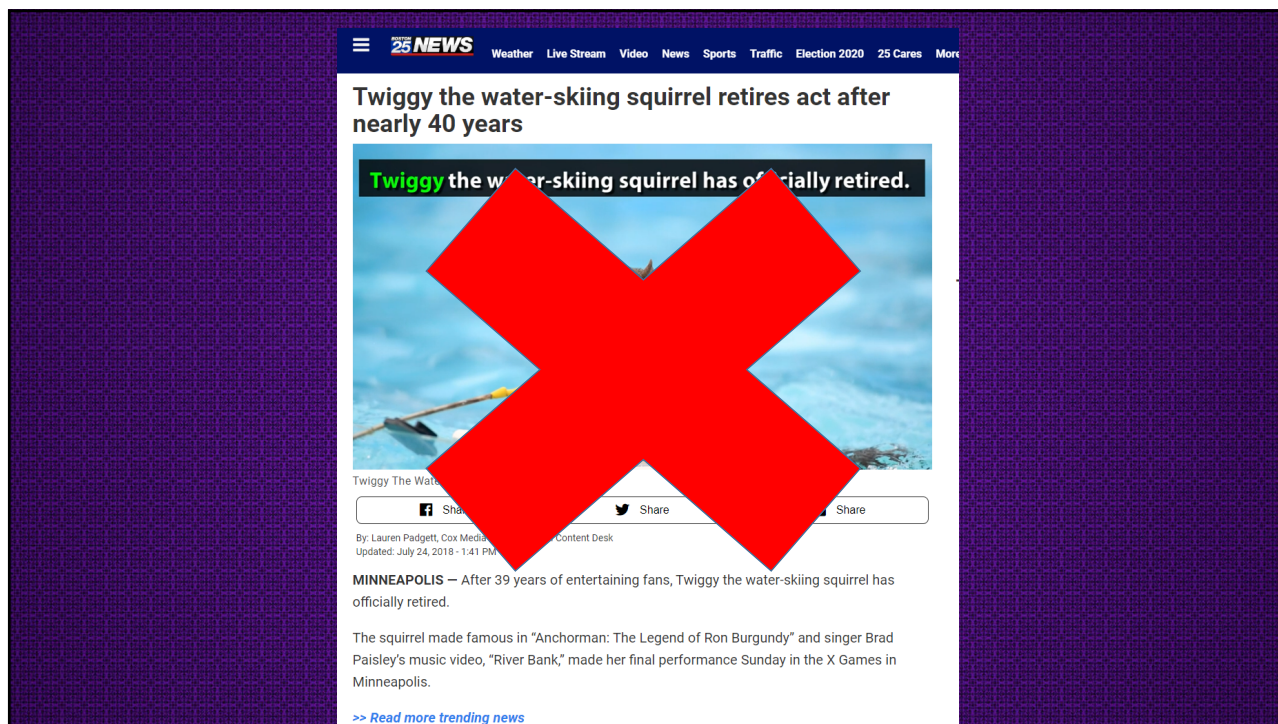
By: Lauren Padgett, Cox Media Group National Content Desk  
Updated: July 24, 2018 - 1:41 PM

**MINNEAPOLIS** — After 39 years of entertaining fans, Twiggy the water-skiing squirrel has officially retired.

The squirrel made famous in "Anchorman: The Legend of Ron Burgundy" and singer Brad Paisley's music video, "River Bank," made her final performance Sunday in the X Games in Minneapolis.

[->> Read more trending news](#)

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8



# Swine Fever Is Killing Vast Numbers Of Pigs In China

August 15, 2019 · 5:04 AM ET  
Heard on Morning Edition

 DAN CHARLES 

 2-Minute Listen    



9

# Active Learning Game Show



10

This naturally occurring glycosaminoglycan is an anticoagulant specifically used in the treatment of heart attacks and unstable angina. It is derived from mucosal tissues from pig intestines

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# WHAT IS HEPARIN?

---

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# WHAT IS HEPARIN?



**CORRECT**

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## Heparin Drug Shortage Conservation Strategies

### Problem:

- African swine fever, a contagious virus with no cure, has eliminated about 25% to 35% of China's pig population, or about 150 million pigs.

Reference: Fed Pract. 2019 Oct; 36(10) 449-454.

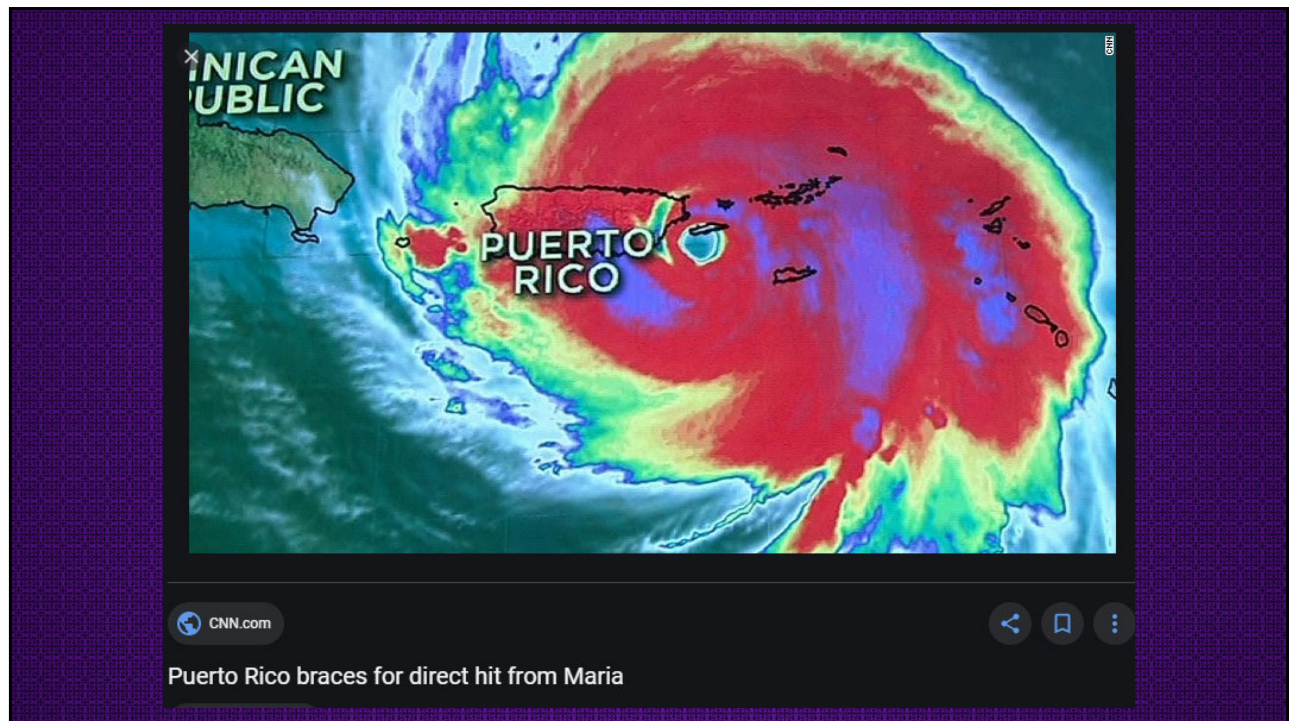
14



## Domino effect...

- Enoxaparin
- Bivaludidin
- Fondaparinux

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## Active Learning

How many pharmaceutical companies are on Puerto Rico?

- A) <10
- B) 10 – 20
- C) 30 – 40
- D) >40

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## Active Learning

How many pharmaceutical companies are on Puerto Rico?

- A) <10
- B) 10 – 20
- C) 30 – 40
- ✓ D) >40

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# Active Learning

- With 49 FDA-approved pharmaceutical plants scattered across the island, Puerto Rico is home to top multinational pharmaceutical companies, including AstraZeneca, Abbott-Abbvie, Baxter, Bristol-Myers Squibb, Merck, Pfizer, Eli Lilly and numerous others. Many companies operate more than one site on the island.
- [Government of Puerto Rico Industry Webpage](#)

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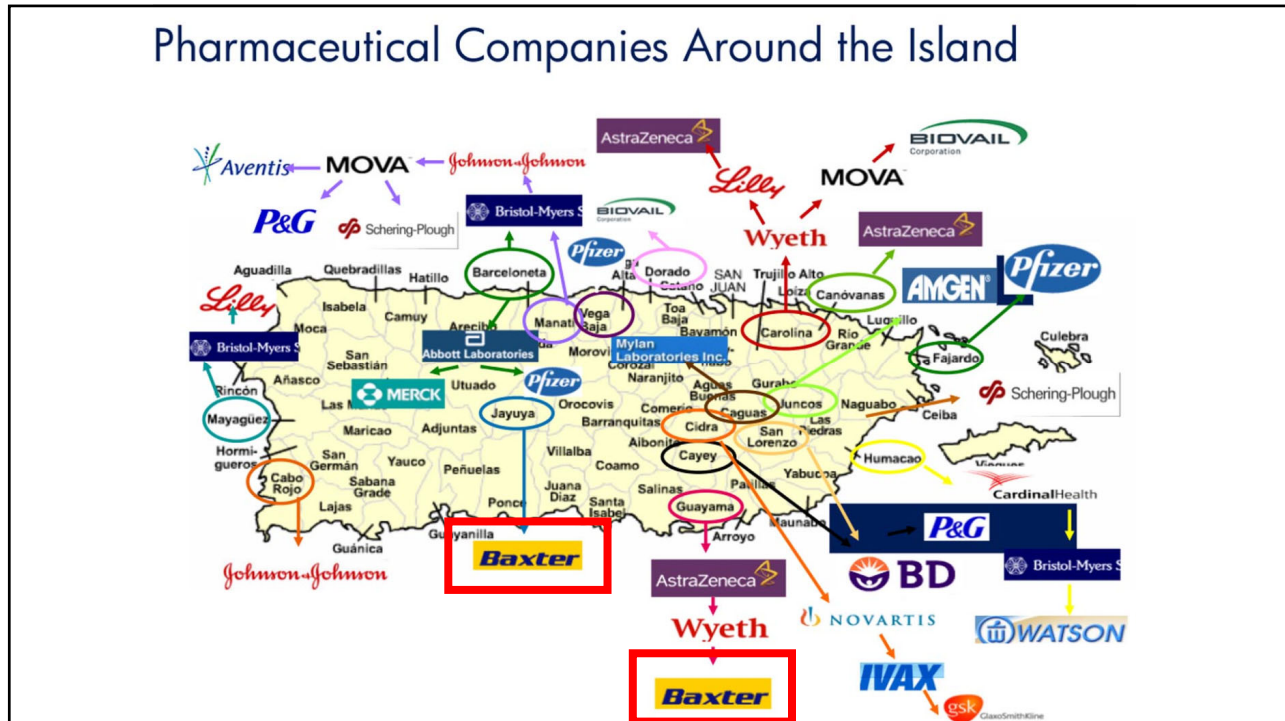
## Pharmaceutical Companies Around the Island



20



## Pharmaceutical Companies Around the Island



21

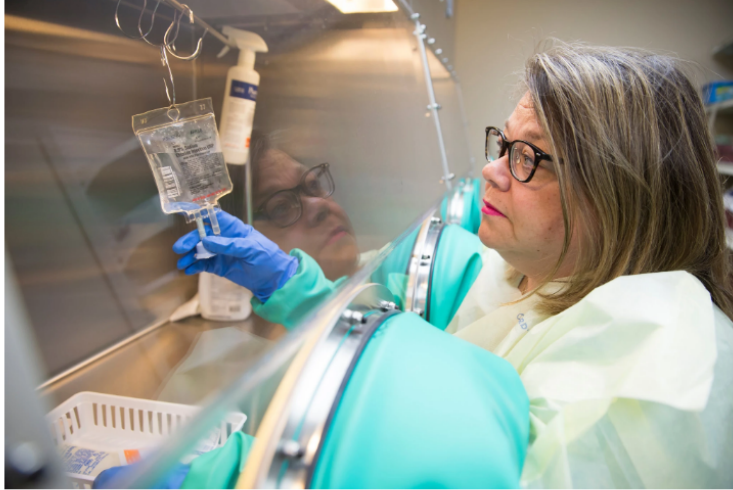
## Baxter Mini-Bag Plus



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## ***U.S. Hospitals Wrestle With Shortages of Drug Supplies Made in Puerto Rico***



Michele M. Evink, the pharmacy manager at Clarke County Hospital, holds a **Baxter** "Mini-Bag," an item in scarce supply since production in Puerto Rico was hampered by the hurricane. Kathryn Gamble for The New York Times

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## ***As Coronavirus Disrupts Factories, India Curbs Exports of Key Drugs***

The outbreak has hobbled Chinese factories that supply India's vast drug industry with ingredients for antibiotics and vitamins, raising the prospect of global shortages.



Cipla, one of India's largest drug makers, said it had "secured some additional inventory from vendors who have ready stocks available." Prashanth Vishwanathan for The New York Times

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(To be Published in the Gazette of India Extraordinary Part-II, Section - 3, Sub-Section (iii))

Government of India  
Ministry of Commerce & Industry  
Department of Commerce  
Directorate General of Foreign Trade  
Udyog Bhavan  
New Delhi

**Notification No. 50 /2015-2020**  
New Delhi, Dated: 3 March, 2020

**Subject: - Amendment in Export Policy of APIs and formulations made from these APIs**

S.O. (E) In exercise of powers conferred by Section 3 of the Foreign Trade (Development & Regulation) Act, 1992 (No. 22 of 1992), as amended, read with Para 1.02 and 2.01 of the Foreign Trade Policy, 2015-20, the Central Government hereby makes amendment, with immediate effect in Chapter 29(Organic Chemicals) and Chapter 30 (Pharmaceutical) of the Schedule 2 of the ITC (HS) Export Policy 2018, by inclusion of items, as indicated in the Table below:

S.No	ITC HS Codes	Description	Present Policy	Revised Policy
146 A	29222933	Paracetamol	Free	Restricted
146 B	29332910	Tinidazole		
146 C	29332920	Metronidazole		
146 D	29335990	Acyclovir		
146 E	29362210	Vitamin B1		
146 F	29362500	Vitamin B6		
146 G	29362610	Vitamin B12		
146 H	29372300	Progesterone		
146 I	29414000	Chloramphenicol		
146 J	29415000	Erythromycin Salts		
146 K	29419050	Neomycin		
146 L	29419090	Clindamycin Salts		
146 M	29420090	Ornidazole		
156 A	30042050	Formulations made of Chloramphenicol		
156 B	30042061	Formulations made of		

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# Response to Hurricanes on Puerto Rico

- Move fast
- Review current inventory quantities and locations
- Average monthly or weekly usage determined
- Viable and safe alternatives (Premixes, Frozen, 503B, etc.)

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Item	Mfg Item	SAP Item	Medline Item	Case quantity	IV Room	Inpt Disp.	Stockroom	Confl. Room	Central Supply (HPCS)	DC	Medline (B31)	Other	Total	AMU	Month's Supply	Pfizer Monthly Allocation (cases)
NS 100ml MiniBag Plus	280043	21546	BHL2B0043	80	1	3	0	3		2			720	1500		
DSw 100ml MiniBag Plus	280041			80	2	1	0		14	12			2320	80	29.0	
DSw 50ml MiniBag Plus	280040			96	2		0						192	n/a	n/a	
NS 25ml	281300	91300	BHL2B1300Z	48	1		0					4	240	300	0.8	
NS 50ml	281306	24543	BHL2B1306H	96	2	1	0	5					768	1000	1.1	
NS 100ml (single)	281307	24544	BHL2B1307H	96			0		3				184	3000	5.7	
NS 100ml	281309	9216	BHL2B1309Z	96	1	5	0		35	117			1568			
NS 250ml	281320	91321	BHL2B1320H	96	2		3				612		2204	4644	4.8	
NS 500mL									109							
DSw 25ml	280080	93085	N/A	48	1		0			8			432	125	3.5	
DSw 50ml	280086	92322	BHL2B0086Z	96	2		0			1			288			
DSw 100ml	280081	N/A		96			0		25				2400	1100	2.4	
DSw 0.45% NS 40KCL 1L	280089	91904	BHL2B0089Z	96	2		0	3	28	107			14016	175	80.1	
DSw 250ml (case qty 24)	Hospira		N/A	12		1	0	5					72			
DSw 1L	280064X	91906	BHL2B0064XH	14	2.5	3	0			22	12.7		254.8	90	2.8	
DSw 50ml	Hospira			50	0.5		6						325	200	1.6	7
DSw 100ml	Hospira			50	0.5		15						775	700	1.1	15
NS 50ml	Hospira			24			10						240	24	10.0	11
NS 100ml	Hospira			50	0.5		12.5						1650	150	11.0	22
NS 250ml	Hospira			50	0.5		34		20	34			6425	2700	2.4	17
0.45% NS 50ml	Hospira			50	0.5		2						125	200	0.6	10
0.45% NS 100ml	Hospira			50	1		1.5						125	100	1.3	4
ADDaptors	Hospira			50	1		2.5						175	50	3.5	2
ADDaptors	Hospira			25	1		1				51		1325	1500	0.9	
Ampicillin 1gm				10	1		26						270	30	9.0	
Ampicillin 2gm				10	3		7						100	270	0.4	
Ampicillin/Subactam 1.5 gm				10	3		11						140	75	1.9	
Ampicillin/Subactam 3 gm				10	3		70						730	430	1.7	
Cefazidime 1gm				10	2		2						40	25	1.6	
Cefazidime 2gm				10	2		8						100	75	1.3	
Ceftriaxone 1gm				10	1		15						160	50	3.2	6
Ceftriaxone 2gm				10	1		20						210	520	0.4	113
Nafcillin 1gm				10	1		5						60	20	3.0	
Nafcillin 2gm				10	1		11.5						125	50	2.5	
Vancomycin 500mg				10	2		17						190	120	1.6	26
Vancomycin 1gm				10	1		47						480	200	2.4	52
Debutamine 500mg/250ml D5W	280792	93100	BHL2B0792	18			0						0	50	0.0	
Dopamine 400mg/250ml D5W	280842			18			6			2			144	35	4.1	
Dopamine 800mg/250ml D5W	280846	93105	BHL2B0846H	18	1	4	4		2				198	50	4.0	
Potassium Chloride 10mEq/50ml	280821			24			7						168	20	8.4	
Potassium Chloride 20mEq/100ml	280827			24			1.5		2		3		168	60	2.8	
Lidocaine 2gm/500ml D5W	280973			18	0.5		2						36	20	1.8	
Mentoradazole 500mg/100ml NS	283421			24	2		3						264	275	1.0	
Gentamicin 80mg				24	1		0						24	10	2.4	
Gentamicin 100mg	280853	25769	BHL2B0853H	24	1	1	21				13.8		883.2	60	14.7	
Levetiracetam 500mg/100ml				10	2		16						180	500	0.4	

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Case Quantity  
Column F

Locations  
Columns G-N

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	Item	Mig Item	SAP Item	Medline Item	Case quantity	IV Room	Inpt Disp.	Stockroom	Conf. Room	Central Supply (HPCS)	DC	Medline (B31)	Other	Total	AMU	Month's Supply
Baater Bags	NS 100ml MiniBag Plus	2B0043	21546	BHL2B0043	80	1	3	0	3		2			720	1500	0.5
	DSW 100ml MiniBag Plus	2B0041		<i>stockroom item</i>	80	2	1	0		14	12			2320	80	29.0
	DSW 50ml MiniBag Plus	2B0040		<i>stockroom item</i>	96	2		0						192	n/a	n/a
	NS 25ml	2B1300	93130	BHL2B1300Z	48	1		0					4	240	300	0.8
	NS 50ml	2B1306	24543	BHL2B1306H	96	2	1	0	5					768	1000	1.1
		2B1308	91322	BHL2B1308Z	96			0			3			288		
	NS 100ml (singles)	2B1307	24544	BHL2B1307H	96			0			19			1824		
	NS 100ml	2B1309	92115	BHL2B1309Z	96	1	5	0			35	117		15168	3000	5.7
	NS 250ml	2B1322Q	91321	BHL2B1322QH	96	2		0			0		612	22104	4644	4.8
	NS 500mL					2	3				109					
	DSW 25ml	2B0080	93085	N/A	48	1		0				8		432	125	3.5
		2B0088	92322	BHL2B0088Z	96	2		0				1		288		
	DSW 50ml	2B0081		N/A	96			0			25			2400	1100	2.4
	DSW 100ml	2B0089	91904	BHL2B0089Z	96	2		0	9	28	107			14016	175	80.1
	DSW 0.45% NS 40 KCL 1L				12		1	0	5					72		
DSW 250ml (case qty 24)	Hospira		N/A	24			0						0			
DSW 250ml	2B0082Q	92116	BHL2B0082QH	36	0.25	2	0				22	360	13633	3975	3.5	
DSW 1L	2B0084X	91906	BHL2B0084XH	14	2.5	3	0					12.7	254.8	90	2.8	

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HRC1

# Syntax:

The **syntax** of a function in **Excel** refers to the layout and order of the function and its arguments.

A function in **Excel** is a built-in formula. All functions begin with the equal sign ( = ) followed by the function's name such as IF, SUM, COUNT, or ROUND.

O	P	Q
Total	AMU	Month's Supply
720	1500	0.5
2320	80	29.0
192	n/a	n/a
240	300	0.8
768	1000	1.1
288		
1824	3000	5.7
15168		
22104	4644	4.8

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HRC1

$$=SUM(G2:N2)*F2$$

O	P	Q
<b>Total</b>	<b>AMU</b>	<b>Month's Supply</b>
720	1500	0.5
2320	80	29.0
192	n/a	n/a
240	300	0.8
768	1000	1.1
288		
1824	3000	5.7
15168		
22104	4644	4.8

Total Quantity of All Locations:  
Sum of Columns G through N  
Multiplied by  
Case Quantity in Column F

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HRC1

$$=SUM(G2:N2)*F2$$

O	P	Q
<b>Total</b>	<b>AMU</b>	<b>Month's Supply</b>
720	1500	0.5
2320	80	29.0
192	n/a	n/a
240	300	0.8
768	1000	1.1
288		
1824	3000	5.7
15168		
22104	4644	4.8

$$=O2/P2$$

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## Slide 33

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**HRC1** Hutts, R. Chris, 4/23/2021

## Slide 34

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**HRC1** Hutts, R. Chris, 4/23/2021

HRC1

$$=SUM(G2:N2)*F2$$

O	P	Q
Total	AMU	Month's Supply
720	1500	0.5
2320	80	29.0
192	n/a	n/a
240	300	0.8
768	1000	1.1
288		
1824	3000	5.7
15168		
22104	4644	4.8

$$=O2/P2$$

Total Quantity ÷  
Average Monthly Use (AMU)

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## Active Learning

	A	B	C
1	Stock Quantity	AMU	Months Supply
2	68	260	?

Which syntax formula is correct?

- A) = A2/C2
- B) = B2\*A1
- C) = B2/A2
- D) = A2/B2

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# Active Learning

	A	B	C
1	Stock Quantity	AMU	Months Supply
2	68	260	0.3

Which syntax formula is correct?

A) = A2/C2

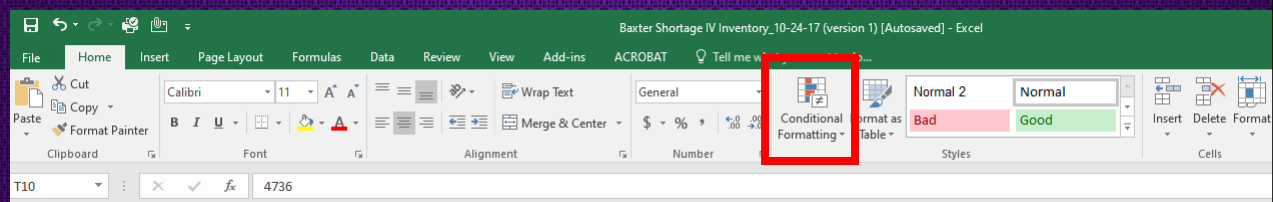
B) = B2\*A1

C) = B2/A2

✓ D) = A2/B2  68 / 260 = 0.3

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# Conditional Formatting



A conditional format changes the appearance of cells on the basis of conditions that you specify.

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The image shows the Excel Conditional Formatting 'Less Than' dialog box. The 'Format cells that are LESS THAN:' field contains the value '1.1'. The 'with' dropdown is set to 'Light Red Fill with Dark Red Text'. Below the dialog is a table with columns O, P, and Q. The 'Month's Supply' column (Q) has values 0.5, 29.0, n/a, 0.8, 1.1, 5.7, and 4.8. The cells with values 0.5, 0.8, and 1.1 are highlighted in light red with dark red text.

	O	P	Q
	<b>Total</b>	<b>AMU</b>	<b>Month's Supply</b>
	720	1500	0.5
	2320	80	29.0
	192	n/a	n/a
	240	300	0.8
	768	1000	1.1
	288		
	1824	3000	5.7
	15168		
	22104	4644	4.8

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# Results

- Multiple locations holding and monitoring stock
- Syntax
  - Quickly calculates Months Supply
  - Color code via Conditional Formatting to highlight low stock

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# Electronic Medical Administration Record Hurricane Response

- Realign Orderables
  - Compounded products to premix only
  - IM/PO options
  - Move as many drugs diluents from NaCl to Dextrose
    - Glucose monitoring in labs
  - Restrict volume options
  - Change default products
- Sourcing from 503Bs, if applicable

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ERX	Medication	Change
400180	Levetiracetam IVPB	Order additional 500mg and 1000mg premix; order 1500mg premix and send info to Epic; Cardinal item number 4552253.
408701	Magnesium Sulfate IVPB	Fix orderable where 2gm and 4gm doses default to the premixes only; change the 64mEq (8gm) bag to 250ml D5W/NS only. Change 48mEq (6gm) bag to 250ml D5W/NS diluent options only in Epic, if compounded item not available from Pharmedium or SCA.
408251	Magnesium Sulfate 48 MEQ (6 GRAMS) IVPB	Check on Pharmedium/SCA premix; if not an option, change to 250ml D5W/NS diluent options only in Epic.
400419	Micafungin IVPB	Provide D5W 100ml as only diluent option in Epic.
409903	Thiamine + Folate IVPB	Change to D5W/NS 250ml as only diluent option in Epic.
408107	Metoprolol IVPB	Change to "dispense x 1" only then ON DEMAND for subsequent doses; place "ON DEMAND--- message pharmacy for each dose" comment in Admin Instructions.
408240	Calcium Gluconate IVPB	Check with SCA and Pharmedium on outsource options.
400221	Thiamine IVPB	Sherry to follow up on IM/PO options.
409711	Acyclovir IVPB	Provide D5W 100ml as only diluent option in Epic.
420001	Acyclovir IVPB	Provide D5W 100ml as only diluent option in Epic.
400190	Midazolam Infusion	Provide D5W 100ml as only diluent option in Epic.
409823	Daptomycin IVPB (ID only)	Change to IV Push; pharmacy will draw up doses in syringe in IV room; need comment in Admin Instructions and on MAR "administer IV Push over 2 minutes".
400340	Daptomycin IVPB	Change to IV Push; pharmacy will draw up doses in syringe in IV room; need comment in Admin Instructions and on MAR "administer IV Push over 2 minutes".
200000	Amiodarone IV Bolus	Order 150mg premix and send info to Epic; Cardinal item number 4462420.
409579	Cefepime IVPB in NS	Remove from Facility List; update order sets with premix only
409759	Meropenem IVPB	Change 500mg and 1000mg doses to IV Push; 2000mg dose will remain as an IVPB;  For 500mg dose, need comment in Admin Instructions and on MAR "reconstitute vial with 10ml Water for Injection (Sterile); administer IV Push over 3-5 minutes".  For 1000mg dose, need comment in Admin Instructions and on MAR "reconstitute vial with 20ml Water for Injection (Sterile); administer IV Push over 3-5 minutes".
409620	Extended piperacillin-tazobactam IVPB in NS	Remove from Facility List; update order sets with premix only
420099	Piperacillin-tazobactam IVPB in NS	Remove from Facility List; update order sets with premix only

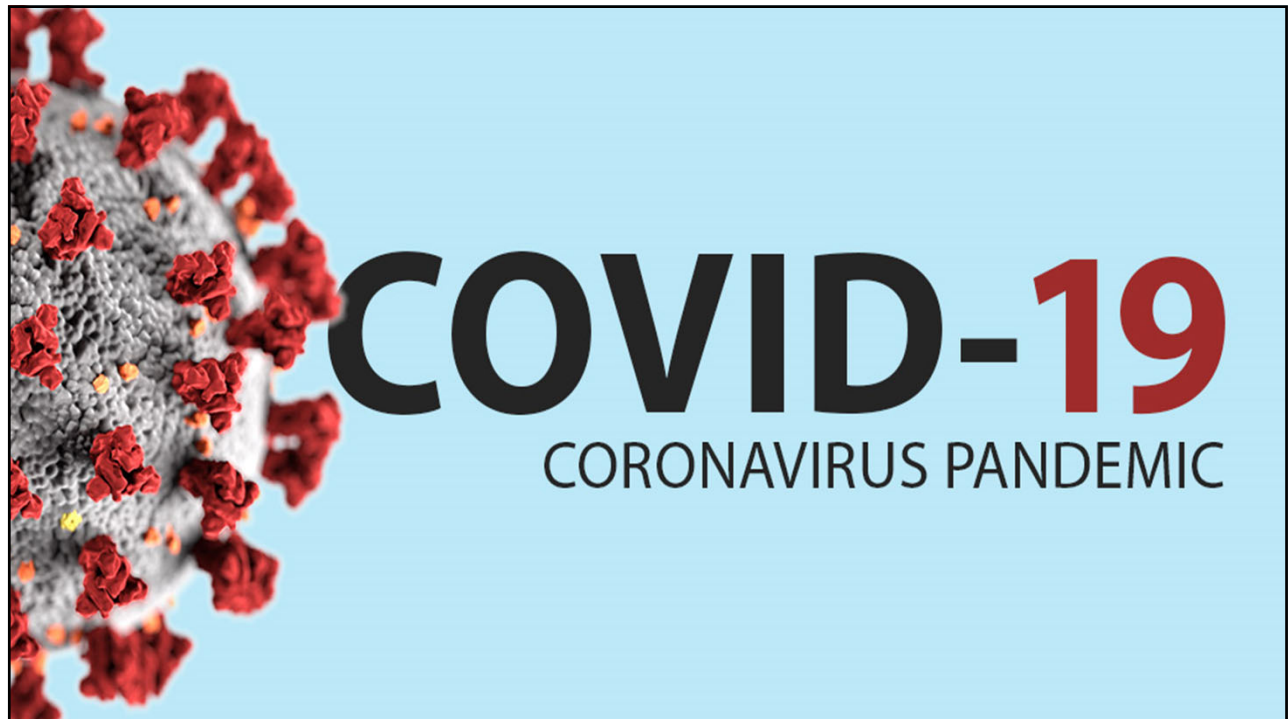
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# Costs

- Premix bags
  - Up to 5x costly compared to vial and IV bag cost
  - Premix requires no compounding/IV room time
  - Avoids use of precious/limited inventory
  - If DSH Hospital, check 340B pricing.
- **WARNING:**
  - Remember to restore defaults after shortage
  - 340B CDM Ratios/Billing implications

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Medication	7-May	13-May	15-May	20-May	22-May	27-May	3-Jun	Patient Days	Patient Days	Active Orders	remaining supply	Comments	Last 3
<b>SEDATIVES/ANALGESICS</b>													
Fentanyl 2,000 mcg/100 mL Drip	364	391	371	377	373	384	260	72	564	10	56	Hikma 5 & 50 mL in good supply at Cardinal	
-Fentanyl 1000mcg/20mL vials	57	57	57	51	51	51	51	7					
(A1) Fentanyl 250mcg/5mL vials	9075	9185	9130	8700	8625	8520	11560	401					
(A2) Fentanyl 2500mcg/50mL vials	300	300	300	300	300	300	300	83					
Hydromorphone 10mg/1mL vials	840	1149	820	810	800	490	580	97	480	0	#DIV/0!		
(A1) Hydromorphone 50mg/5mL vials	570	570	570	570	570	570	320	267					
(A2) Hydromorphone 40mg/20mL vials	5	5	5	5	5	5	0	0					
(A3) Hydromorphone 500mg/50mL vials	14	14	14	14	14	14	14	117					
Morphine 10mg/1mL vials	9270	10071	10041	9931	9871	9591	9351	390	390	0	#DIV/0!		
Propofol 1,000mg/100ml bottles	1438	1288	1250	1160	1080	910	810	231	294	3	98	240 x 100 mL vials arrived 6/4 from Fres Kabi; More avail direct from Fres Kabi	
-Propofol 500mg/50ml bottles	429	449	449	449	429	429	440	63					
-Propofol 200mg/20ml bottles	2594	2874	2947	2798	2562	2403	3960	8					
Dexmedetomidine 200mcg/2ml vials	4025	3675	3625	3500	1050	975	1625	193					
-Dexmedetomidine 400mcg/100mL bags/bottle	418	418	250	250	250	250	250	60	286	7	41	Wholesalers fully stocked	
-Dexmedetomidine 400mcg/4ml vials	124	124	124	136	140	140	140	33					
(A1) Dexmedetomidine 200mcg/50mL bags/bottles								0					
Midazolam 50mg/10mL vials	2599	2599	2839	2839	2759	2759	2749	1145					
(A1) Midazolam 5mg/1mL vials	270	270	270	254	244	244	237	10	1278	1	1278	Piggybacks expire 6/15	
(A2) Midazolam 5mg/5mL vials	2215	2185	2125	2105	2056	2056	1955	81					
(A3) Midazolam 2mg/2mL vials	1046	885	885	515	1105	1105	730	12					
(A4) Midazolam 50 mg/50 mL Bags	150	130	130	110	90	90	70	29					
Lorazepam 40mg/10mL vials	380	380	380	380	380	380	380	95	95	0	#DIV/0!		
Ketamine 500mg/10mL vials	847	839	836	832	810	810	807	40	40	0	#DIV/0!	Par Pharm in good supply	
(A1) Ketamine 500mg/5mL vials								6	6	0	#DIV/0!		
Phenobarbital 100mg/1mL	234	234	209	209	209	209	209	6	6	0	#DIV/0!		
(A1) Phenobarbital 65mg/mL								4	4	0	#DIV/0!	able Leucadia and Akorn direct. Stocked at wholesaler	
Pentobarbital 100mg/20ml	22	21	21	21	21	18	18	4	4	0	#DIV/0!		
-Pentobarbital 2500mg/50ml								0					
<b>NMBs</b>													
Vecuronium 10 mg Vial	2131	2101	1950	1702	1626	1597	1615	215	357	0	#DIV/0!	10 mg 07/20; 40 x 10 mg 01/21; & 30 x 20 mg 10/20; 390 vials	
(A1) Vecuronium 20 mg Vial	530	530	530	530	530	530	530	141					
Cisatracurium 20mg/10ml vials	624	624	644	684	118	118	118	16					
-Cisatracurium 200mg/20ml vials	101	111	181	181	65	55	51	68					
Rocuronium 50mg/5 mL Vials	1379	1379	1379	1379	769	719	780	21	78	0	#DIV/0!	LL SHORT DATED! - 500 vials go out of date in June 2021	
-Rocuronium 50/5mL PFS	2145	1965	2085	2235	1995	1845	2100	57					
(A1) Rocuronium 100mg/10 mL Vials								0					
<b>COVID-19 TREATMENT</b>													
Azithromycin 250 mg	5448	5448	5348	2048	1981	1848	1600	267	267	7	38	Wholesalers fully stocked; 3300 sent back for credit	
Albuterol (MDIs)	702	649	599	565	561	506	480	480	480	74	6		
Spiriva Handihaler	80	59	46	68	70	82	170	170	170	8	21	Wholesalers fully stocked	
Fluqueni 200 mg Tablets	3500	3500	3700	9170	3670	3670	7420	618	618	2	309	Wholesalers fully stocked	
Axeterra (In Milligrams)	13380	14280	14280	14280	13280	13280	9920	12	12	0	#DIV/0!	Wholesalers fully stocked	
LOPINAVIR/RTONAVIR 200-50 Tab	60	60	60	60	60	60	55	55	55	0	#DIV/0!	Wholesalers fully stocked	
Hydrocortisone 100 mg Inj Vial	625	600	550	500	500	575	425	425	425	4	106	Wholesalers fully stocked	

45

Medication	7-May	13-May	15-May	20-May	22-May	27-May	3-Jun	Patient Days	Patient Days	Number of Active Orders	Days remaining supply
<b>SEDATIVES/ANALGESICS</b>											
Fentanyl 2,000 mcg/100 mL Drip	364	391	371	377	373	384	260	72	564	20	28
-Fentanyl 1000mcg/20mL vials	57	57	57	51	51	51	51	7			
(A1) Fentanyl 250mcg/5mL vials	9075	9185	9130	8700	8625	8520	11560	401			
(A2) Fentanyl 2500mcg/50mL vials	300	300	300	300	300	300	300	83			

Patient Days	Patient Days	Active Orders	remaining supply
72	564	10	56
7			
401			
83			

Last 3 day average	Trending
378	-118
51	0
8615	2945
300	0

46



# Fentanyl 2,000 mcg/100 mL Bag

- Our formulary anesthetic product in sedation
- Averaging 3.6 bags per patient per day when intubated
- Options for compounding:
  - 2 x 1,000 mcg/20 mL
  - 8 x 250 mcg/5 mL
  - 1 x 2,500 mcg/50 mL

47

## Calculating Patient Days

A	AJ	AK	AL	AM	AN	AC	AP	AQ	AR	AS
Medication	15-May	20-May	22-May	27-May	3-Jun		Patient Days	Patient Days	Number of Active Orders	Days remaining supply
<b>SEDATIVES/ANALGESICS</b>										
Fentanyl 2,000 mcg/100 mL Drip	371	377	373	384	260		72	564	20	28
-Fentanyl 1000mcg/20mL vials	57	51	51	51	51		7			
(A1) Fentanyl 250mcg/5mL vials	9130	8700	8625	8520	11560		401			
(A2) Fentanyl 2500mcg/50mL vials	300	300	300	300	300		83			

- Use the =OFFSET(reference, rows, cols) – (fxn) on same row, two columns to left

48



# Calculating Patient Days

A	AJ	AK	AL	AM	AN	AC	AP	AQ	AR	AS
Medication	15-May	20-May	22-May	27-May	3-Jun		Patient Days	Patient Days	Number of Active Orders	Days remaining supply
<b>SEDATIVES/ANALGESICS</b>										
1 Fentanyl 2,000 mcg/100 mL Drip	371	377	373	384	260		72	564	20	28
-Fentanyl 1000mcg/20mL vials	57	51	51	51	51		7			
(A1) Fentanyl 250mcg/5mL vials	9130	8700	8625	8520	11560		401			
(A2) Fentanyl 2500mcg/50mL vials	300	300	300	300	300		83			

- Use the =OFFSET(reference, rows, cols) – (fxn) on same row, two columns to left

1 =OFFSET(AP3,0,-2)/3.6 : 3.6 x 2,000 mcg bags per day utilized for Covid Patients

49

# Calculating Patient Days

A	AJ	AK	AL	AM	AN	AC	AP	AQ	AR	AS
Medication	15-May	20-May	22-May	27-May	3-Jun		Patient Days	Patient Days	Number of Active Orders	Days remaining supply
<b>SEDATIVES/ANALGESICS</b>										
1 Fentanyl 2,000 mcg/100 mL Drip	371	377	373	384	260		72	564	20	28
2 -Fentanyl 1000mcg/20mL vials	57	51	51	51	51		7			
(A1) Fentanyl 250mcg/5mL vials	9130	8700	8625	8520	11560		401			
(A2) Fentanyl 2500mcg/50mL vials	300	300	300	300	300		83			

- Use the =OFFSET(reference, rows, cols) – (fxn) on same row, two columns to left

1 • =OFFSET(AP3,0,-2)/3.6 : 3.6 x 2,000 mcg bags per day utilized for COVID Patients

2 • =(OFFSET(AP4,0,-2)/2)/3.6 : Requires 2 vials for 2,000 mcg bag

50



# Calculating Patient Days

	A	AJ	AK	AL	AM	AN	AC	AP	AQ	AR	AS
Medication		15-May	20-May	22-May	27-May	3-Jun		Patient Days	Patient Days	Number of Active Orders	Days remaining supply
<b>SEDATIVES/ANALGESICS</b>											
1	Fentanyl 2,000 mcg/100 mL Drip	371	377	373	384	260		72	564	20	28
2	-Fentanyl 1000mcg/20mL vials	57	51	51	51	51		7			
3	(A1) Fentanyl 250mcg/5mL vials	9130	8700	8625	8520	11560		401			
	(A2) Fentanyl 2500mcg/50mL vials	300	300	300	300	300		83			

- Use the =OFFSET(reference, rows, cols) – (fxn) on same row, 2 columns to left

1 =OFFSET(AP3,0,-2)/3.6 : 3.6 x 2,000 mcg bags per day utilized for COVID Patients

2 =(OFFSET(AP4,0,-2)/2)/3.6 : Requires 2 vials for 2,000 mcg bag

3 =(OFFSET(AP5,0,-2)/8)/3.6 : Requires 8 vials for 2,000 mcg bag

51

# Calculating Patient Days

	A	AJ	AK	AL	AM	AN	AC	AP	AQ	AR	AS
Medication		15-May	20-May	22-May	27-May	3-Jun		Patient Days	Patient Days	Number of Active Orders	Days remaining supply
<b>SEDATIVES/ANALGESICS</b>											
1	Fentanyl 2,000 mcg/100 mL Drip	371	377	373	384	260		72	564	20	28
2	-Fentanyl 1000mcg/20mL vials	57	51	51	51	51		7			
3	(A1) Fentanyl 250mcg/5mL vials	9130	8700	8625	8520	11560		401			
4	(A2) Fentanyl 2500mcg/50mL vials	300	300	300	300	300		83			

- Use the =OFFSET(reference, rows, cols) – (fxn) on same row, two columns to left

1 =OFFSET(AP3,0,-2)/3.6 : 3.6 x 2,000 mcg bags per day utilized for Covid Patients

2 =(OFFSET(AP4,0,-2)/2)/3.6 : Requires 2 vials for 2,000 mcg bag

3 =(OFFSET(AP5,0,-2)/8)/3.6 : Requires 8 vials for 2,000 mcg bag

4 =OFFSET(AP6,0,-2)/3.6 : Requires 1 vial for 2,000 mcg bag w/500 mcg waste

52



AP	AQ	AR	AS
Patient Days	Patient Days	Number of Active Orders	Days remaining supply
72	564	10	56
7			
401			
83			

- Patient Days =SUM(AP3:AP6)
- Number of Active Orders – Daily Epic Report
- Days Remaining Supply =AQ3/AR3

53

## Identify a Decline

Medication	7-May	13-May	15-May	20-May	22-May	27-May	3-Jun
<b>SEDATIVES/ANALGESICS</b>							
Fentanyl 2,000 mcg/100 mL Drip	364	391	371	377	373	384	260
-Fentanyl 1000mcg/20mL vials	57	57	57	51	51	51	51
(A1) Fentanyl 250mcg/5mL vials	9075	9185	9130	8700	8625	8520	11560
(A2) Fentanyl 2500mcg/50mL vials	300	300	300	300	300	300	300

- Stable average maintained until June 3<sup>rd</sup>
- 124 bag decline from May 27 (-31%)

54



Medication	7-May	13-May	15-May	20-May	22-May	27-May	3-Jun
<b>SEDATIVES/ANALGESICS</b>							
Fentanyl 2,000 mcg/100 mL Drip	364	391	371	377	373	384	260
-Fentanyl 1000mcg/20mL vials	57	57	57	51	51	51	51
(A1) Fentanyl 250mcg/5mL vials	9075	9185	9130	8700	8625	8520	11560
(A2) Fentanyl 2500mcg/50mL vials	300	300	300	300	300	300	300

Patient Days	Patient Days	Active Orders	remaining supply
72	564	10	56
7			
401			
83			

AU	AV
Last 3 day average	Trending
378	-118
51	0
8615	2945
300	0

**-31% Drop**

55

Medication	7-May	13-May	15-May	20-May	22-May	27-May	3-Jun
<b>SEDATIVES/ANALGESICS</b>							
Fentanyl 2,000 mcg/100 mL Drip	364	391	371	377	373	384	260
-Fentanyl 1000mcg/20mL vials	57	57	57	51	51	51	51
(A1) Fentanyl 250mcg/5mL vials	9075	9185	9130	8700	8625	8520	11560
(A2) Fentanyl 2500mcg/50mL vials	300	300	300	300	300	300	300

**Previous 3 Count Average:**

- $=(\text{OFFSET}(\text{AU}4,0,-8)+\text{OFFSET}(\text{AU}4,0,-9)+\text{OFFSET}(\text{AU}4,0,-10))/3$

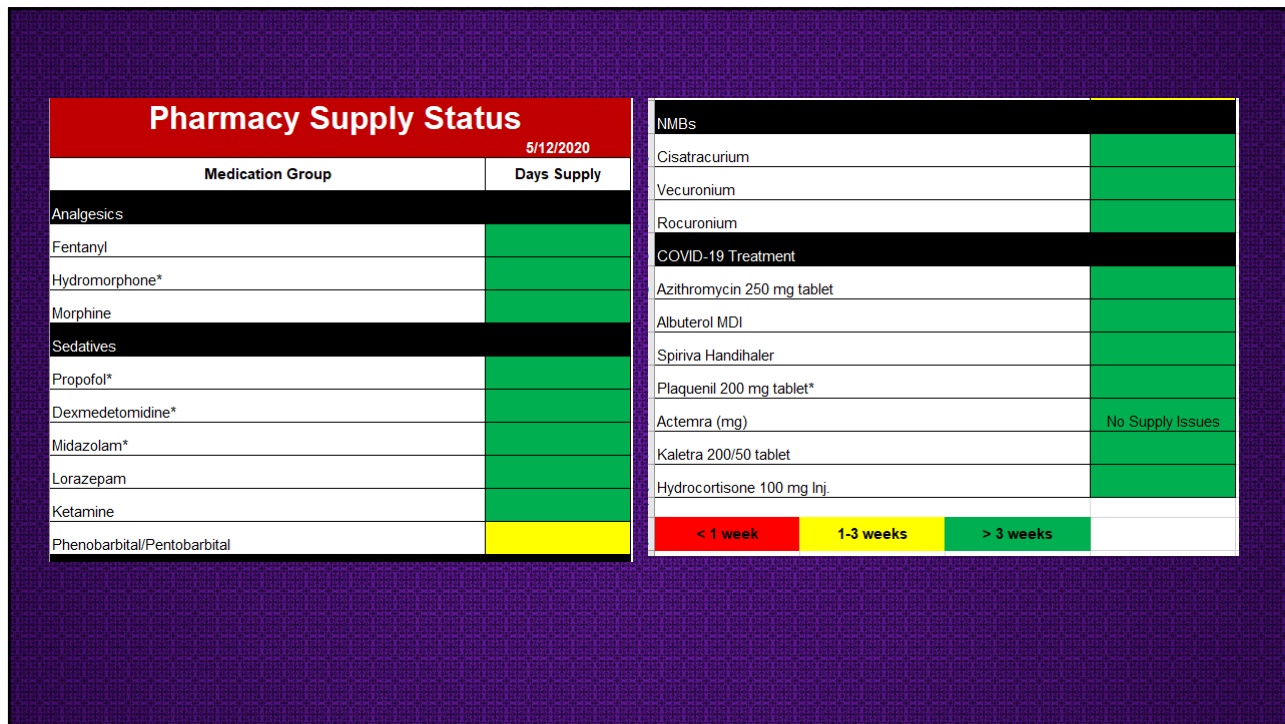
**Trending: Subtract today's count from 3 count average**

- $=(\text{OFFSET}(\text{AV}3,0,-8))-(\text{OFFSET}(\text{AV}3,0,-1))$
- Added Conditional Formatting to Highlight Drop

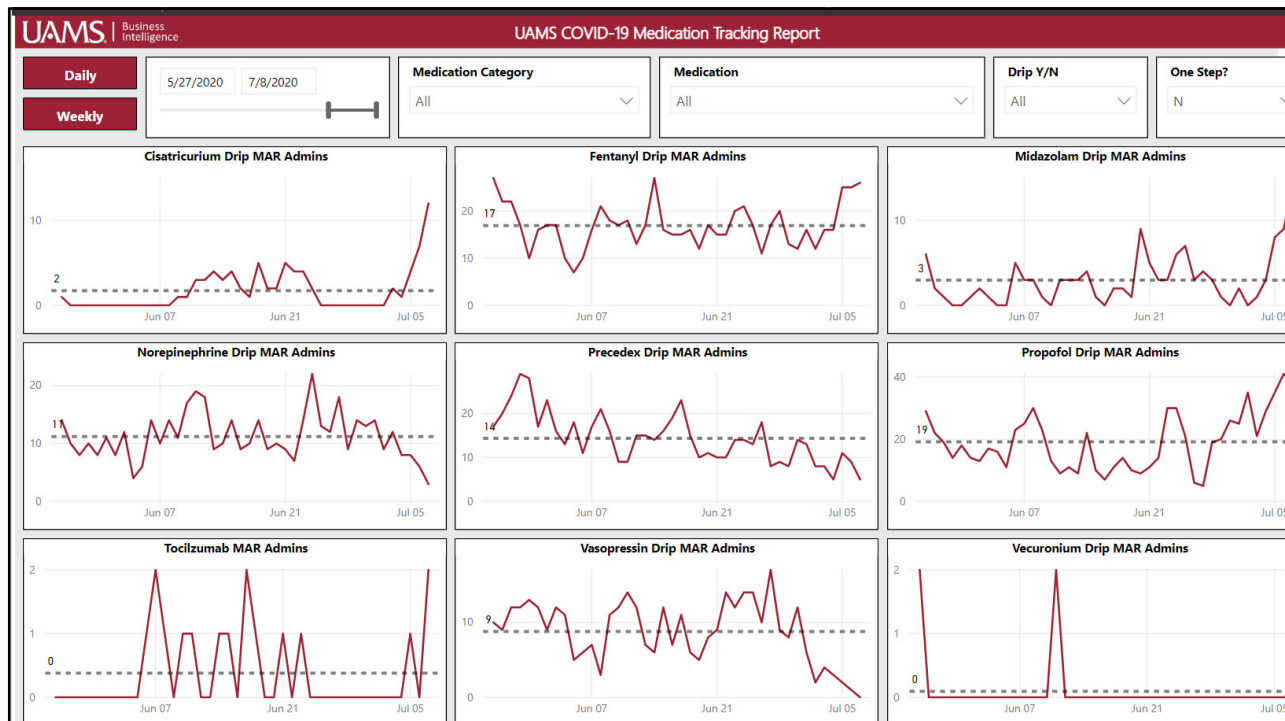
AU	AV
Last 3 day average	Trending
378	-118
51	0
8615	2945
300	0

56



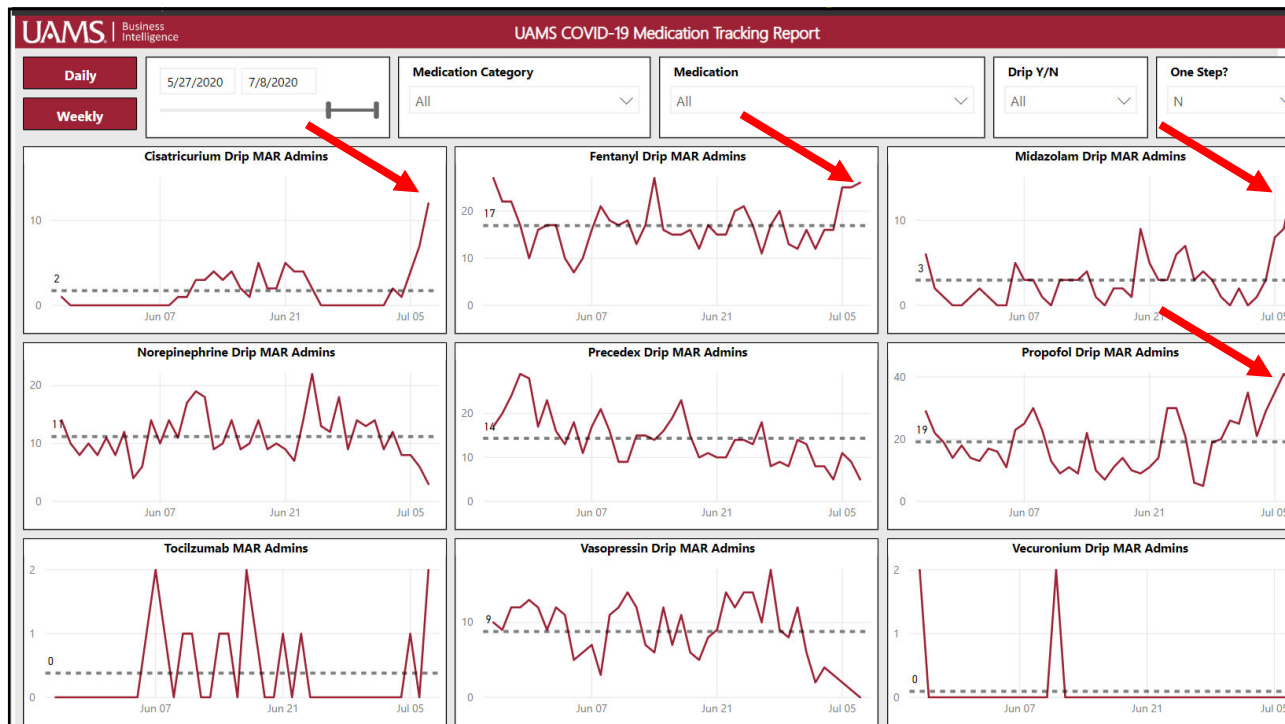


57



58





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### Shopping List Details

Custom Field Search

List Name: **COVID-19**  
 Status: Public

SEL	QTY	STOCK STATUS	UDF2	CIN	AMU	NDC/UPC	GENERIC NAME ^	STRENGTH	CSN	FORM	SIZE	NET COST	TOTAL COST
<input type="checkbox"/>	1	<span style="color: green;">●</span>	P	4364030	27	43825-0102-01	ACETAMINOPHEN	10MG/ML	108021	SDV	24X100 ML		
<input type="checkbox"/>	48	<span style="color: red;">●</span> <span style="color: blue;">i</span>	P	4094686	9	00173-0682-24	ALBUTEROL SULFATE	90MCG	17837	ARIN	1X8 GM		
<input type="checkbox"/>	1	<span style="color: green;">●</span> <span style="color: blue;">i</span>	P	5509906	2	66993-0019-68	ALBUTEROL SULFATE	90MCG	17837	ARIN	1X18 GM		
<input type="checkbox"/>	1	<span style="color: green;">●</span> <span style="color: blue;">i</span>		5508007		00093-3174-31	ALBUTEROL SULFATE	90MCG		ARIN	1X8.5 GM		
<input type="checkbox"/>	1	<span style="color: green;">●</span>		5604137		45802-0088-01	ALBUTEROL SULFATE	90MCG		ARIN	1X8.5 GM		
<input type="checkbox"/>	2	<span style="color: green;">●</span> <span style="color: blue;">i</span>	P	3739232	129	00173-0682-20	ALBUTEROL SULFATE	90MCG	17837	ARIN	1X18 GM		
<input type="checkbox"/>	1	<span style="color: green;">●</span>	P	4791034	0	59310-0579-22	ALBUTEROL SULFATE	90MCG	17837	ARIN	1X8.5 GM		
<input type="checkbox"/>	1	<span style="color: green;">●</span> <span style="color: blue;">i</span>		5588405	0	00781-8089-31	AZITHROMYCIN	250MG		TABS	1X30 EA		
<input type="checkbox"/>	1	<span style="color: green;">●</span>		5564414		51224-0022-30	AZITHROMYCIN	250MG		TABS	1X30 EA		
<input type="checkbox"/>	1	<span style="color: green;">●</span> <span style="color: blue;">i</span>		5206966		68180-0160-06	AZITHROMYCIN	250MG		TABS	1X30 EA		
<input type="checkbox"/>	1	<span style="color: green;">●</span>		3704855		50111-0787-10	AZITHROMYCIN	250MG		TABS	1X30 EA		

60



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## Wholesaler Allocated Order Management

Account: IP-GPO 301319
Auto-Submit: On
Cart Total \$9,446.28 (19)
View across accounts

CardinalHealth Order Express
Welcome: rhutts  
Log Out

Home | Lists | Requisitions | **Order History** | Returns | Reports | Services | Admin

Custom Field Search

Home :: Order History

[View Backorder List >](#)  
[View Invoice Review Report >](#)  
[View Statements Report >](#)  
[Manage E222 & CSOS Orders >](#)

Eligible
  On Contract

Order History

Refresh

Print

The orders displayed below have been placed but have not been invoiced.

SALES ORDER #	ORDER CONFIRMATIONS	ORDER STATUS ^	ORDER METHOD	CSO #	ORDER DATE/TIME	TOTAL	PO #	PO MEMO
142695188	<a href="#">View Confirmation</a>	Allocated	OrderExpress		04/27/2021 01:54 PM	\$9,012.64	S213806738	\$25 FEE FOR ORDERS LESS THAN \$
142703341	<a href="#">View Confirmation</a>	Allocated	OrderExpress	21XCO0068	04/27/2021 03:11 PM	\$2,295.25	S213806738	\$25 FEE FOR ORDERS LESS THAN \$
142697003	<a href="#">View Confirmation</a>	Allocated	OrderExpress		04/27/2021 03:04 PM	\$484.86	S213806738	\$25 FEE FOR ORDERS LESS THAN \$

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Columns Print Export .xls

PO #: S213806738 18 lines Total Cost: [ ]

Invoice #: 7238152 Customer #: 301319 Confirmation #: 08548  
 Sales Order #: 142695188 Customer Name: UNIVERSITY HOSPITAL-SLOT 571 Order Status: Allocated  
 PO Memo: \$25 FEE FOR ORDERS LESS THAN \$ Customer Address: UNIV ARK MED SCIENCE 0503 DC Name: JACKSON  
 Order Date: 04/27/2021 01:54 PM 4301 WEST MARKHAM ST SLOT 571 DC Address: 1240 GLUCKSTADT ROAD  
 Order Type: REGULAR LITTLE ROCK, AR 72205 MADISON, MS 39110-0000  
 Submitted By: stonerjenny HIN : 710710G00

View: All | Exceptions

SEL	ORDER QTY	SHIP QTY	ORIG QTY	TRADE NAME	STRENGTH	SIZE	FORM	COST*	NDC/UPC	GENERIC NAME	AMU	CIN	SUB	OMIT CODE	UNIT OF MEASURE	TOTAL COST	TYPE	CONTRACT	DESCRIPTION	FO
<input type="checkbox"/>	12	11		ETOPOSIDE	20MG/ML	1X50 ML	MDV		16729-0114-11	ETOPOSIDE	13	5150222		DC Out	ML		Rx	VZNT	ETOPOSIDE 20MG/ML 50ML	
<input type="checkbox"/>	7	7		ENOXAPARIN SODIUM	100MG/ML	10X1 ML	SYRN		63323-0605-84	ENOXAPARIN SODIUM	20	5576632			ML		Rx	VZNNVP	ENOXAPARIN 100MG/1ML 10X1ML	
<input type="checkbox"/>	1	1		GLYCOPYRROLATE	0.2MG/ML	25X5 ML	MDV		00781-3829-96	GLYCOPYRROLATE	0	5557764			ML		Rx	SUPLC	GLYCOPYRROLATE 0.2MG/ML 25X5ML	
<input type="checkbox"/>	10			BUMETANIDE	0.25MG/ML	10X10 ML	MDV		00409-1412-10	BUMETANIDE	0	2752640		MFR Out	ML		Rx	VZNT	BUMETANIDE 0.25MG/ML 10X10ML	
<input type="checkbox"/>	8	8		ONDANSETRON	8MG	3X10 EA	TDIS		65862-0391-10	ONDANSETRON	12	4604682			EA		Rx	1 - SOURCE	ONDANSETRON 8MG 3X10UD ODT	
<input type="checkbox"/>	3	3		QUETIAPINE FUMARATE	25MG	10X10 EA	TABS		00904-6638-61	QUETIAPINE FUMARATE	0	5388764			EA		Rx	1 - SOURCE	QUETIAPINE FUM 25MG 10X10UD	
<input type="checkbox"/>	4	4		ACETYLCYSTEINE	200MG/ML	25X4 ML	AMIH		00517-7604-25	ACETYLCYSTEINE	6	3453263			ML		Rx	VZNT	ACETYLCYSTEINE 20% 25X4ML STR	
<input type="checkbox"/>	12	12		ALBUTEROL SULFATE 1/PCH	0.83MG/ML	30X3 ML	AMIH		00487-9501-01	ALBUTEROL SULFATE	22	3321957			ML		Rx	1 - SOURCE	ALBUTEROL SUL0.083%30X3UD1/PCH	
<input type="checkbox"/>	5	5		HEALTHYLAX	17GM/DOSE	1X100 EA	PCKT		360687-431925	POLYETHYLENE GLYCOL	18	5635735			EA		HBC	1 - SOURCE	HEALTHYLAX 17GM/DS100X17GM PWD	
<input type="checkbox"/>	8			MITOXANTRONE HCL	2MG/ML	1X10 ML	MDPF		63323-0132-10	MITOXANTRONE HCL	0	3724069		DC Out	ML		Rx	VZNT	MITOXANTRONE 2MG/ML 10ML CONC	

For Selected:

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A	B	C	D	E	F	G	I
ORDER QTY	SHIP QTY		TRADE NAME	STRENGTH	SIZE	FORM	NDC/UPC
2	0	2	ADAPTA-CAP LONG		1X100 EA	RSUP	017191-051063
24	24	0	AK-TROPICACYL	1%	1X15 ML	DROP	17478-0102-12
24	14	10	ALMACONE-2	400-400-40	1X355 ML	SUSP	305360-015832
36	36	0	ATROVENT HFA	17MCG	1X12.9 GM	ARIN	00597-0087-17
10	0	10	BACITRACIN	50MU	10X1 EA	PWVL	70594-0026-02
20	20	0	Betamethasone Sodium	5ml			
30	30	0	Betamethasone Sodium	5ml			
9	9	0	BRIMONIDINE TARTRATE	0.20%	1X5 ML	DROP	61314-0143-05
3	3	0	BRIMONIDINE TARTRATE	0.20%	1X5 ML	DROP	61314-0143-05
2	2	0	BUPROPION XL	150MG	6X5 EA	TABS	50268-0140-13
8	8	0	CARBOPLATIN	10MG/ML	1X15 ML	MDPF	00703-4246-01
2	2	0	CARVEDIOL	6.25MG	10X10 EA	TABS	00904-6301-61
2	2	0	CARVEDIOL	3.125MG	10X10 EA	TABS	00904-6300-61
1	1	0	CARVEDIOL	6.25MG	10X10 EA	TABS	00904-6301-61
1	1	0	CARVEDIOL	3.125MG	10X10 EA	TABS	00904-6300-61
43	43	0	CHLORHEXIDINE GLUCONATE	0.12%	1X473 ML	LIQD	00116-2001-16
5	5	0	CHLORHEXIDINE GLUCONATE	0.12%	1X473 ML	LIQD	00116-2001-16
8	8	0	CINVANTI	7.2MG/ML	1X18 ML	SDV	47426-0201-01
6	6	0	CIPROFLOXACIN HCL	0.30%	1X2.5 ML	DROP	69315-0308-02
6	0	6	CISPLATIN	1MG/ML	1X100 ML	MDV	63323-0103-65
6	6	0	CISPLATIN	1MG/ML	1X100 ML	MDPF	16729-0288-38
1	0	1	CLADRIBINE	1MG/ML	1X10 ML	SDPF	63323-0140-10

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A	B	C	D	E	F	G	I
ORDER QTY	SHIP QTY		TRADE NAME	STRENGTH	SIZE	FORM	NDC/UPC
2	0	2	ADAPTA-CAP LONG		1X100 EA	RSUP	017191-051063
24	24	0	AK-TROPICACYL	1%	1X15 ML	DROP	17478-0102-12
24	14	10	ALMACONE-2	400-400-40	1X355 ML	SUSP	305360-015832
36	36	0	ATROVENT HFA	17MCG	1X12.9 GM	ARIN	00597-0087-17
10	0	10	BACITRACIN	50MU	10X1 EA	PWVL	70594-0026-02
20	20	0	Betamethasone Sodium	5ml			

Column C = A2-B2 Subtracts Order Quantity from Ship Quantity  
 Conditional Formatting Column C

Highlights any Cells < 0 to show you are being shorted

Able to quickly identify and source alternatives or backorder before leaving for the day.

Proactive approach instead of realizing short the next day

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## Primary Pharmacy Drug Wholesalers

QTY	STOCK STATUS	AMU	UDF2	CIN	NDC/UPC	MFR	GENERIC NAME	STRENGTH	FORM	SIZE	NET COST	CONTRACT	NOTES	TRADE NAME	UOI COST
0			P	1284645	00409-9045-01	PFIZER	BUPIVACAINE/EPINEPH	0.5-0.0005%	SDPF	10X10 ML		1 - VZNT		BUPIVACAINE/EPI 0.5%-1:200000	
0				4340139	00409-9045-17	PFIZER	BUPIVACAINE/EPINEPH	0.5-0.0005%	SDPF	25X30 ML		1 - VZNT		BUPIVACAINE/EPI 0.5%-1:200000	
0			P	4340113	00409-9042-17	PFIZER	BUPIVACAINE/EPINEPH	0.25-0.0005%	SDPF	25X30 ML		1 - VZNT		BUPIVACAINE/EPI 0.25%-1:200000	
0			P	1284686	00409-9042-01	PFIZER	BUPIVACAINE/EPINEPH	0.25-0.0005%	SDPF	10X10 ML		1 - VZNT		BUPIVACAINE/EPI 0.25%-1:200000	
0				1800226	00409-9046-01	PFIZER	BUPIVACAINE/EPINEPH	0.5-0.0005%	MDV	25X50 ML		1 - VZNT		BUPIVACAINE/EPI 0.5%-1:200000	
0				1107564	00409-9043-01	PFIZER	BUPIVACAINE/EPINEPH	0.25-0.0005%	MDV	25X50 ML		1 - VZNT		BUPIVACAINE/EPI 0.25%-1:200000	

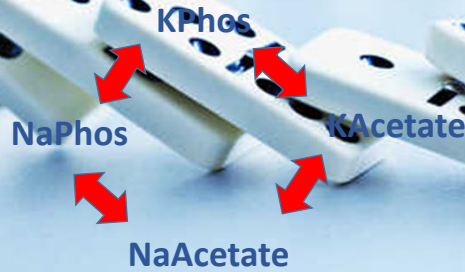
66



# Next Products to Fall – Dominoes..

• Bup + Epi ↔ Lido + Epi

• Electrolyte cascade



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A	B	C	D	E	F	G
Use good judgement on loaning the list below and these: Sodium Phosphate, Potassium Phosphate vials; Bup+Epi, Lido+Epi						
No loaning: PROTAMINE, BETAMETASONE INJ SUSPENSION, CYCLOPENTOLATE						
Highlighted items would be considered critical:						
Name	AMU (EACHES)	NDC	Current Stock (eaches)	Runway Days	Return Date/Comment	Alternate/Comment
AMIFOSTINE (Ethylol) 500 mg Vial	rare	76310-0017-50	0	#VALUE!	4/30	
BETAMETH ACET/BETAMET SOD PHOS 6MG/ML	68	00517-0720-01 00517-0791-01	91	41	4/30	Main use PB clinics; Alt is Dex 5 mg/ml 5 mL
CEFTOLOZANE/TAZOACTAM 1.5 G	140	67919-0030-01	0	0	Unknown	TOTAL RECALL: expect return this summer
CHLORDIAZEPOXIDE HCL 25 MG CAP 100 UD	172	51079-0141-20	659	117	July 2021	
COPPER CAPS	rare	27434-0010-17	0	#VALUE!	n/a	Copper tablets x 30 expires 9/23/21
CYANOKIT 5G/VL KIT	1	11704-0370-01	5	152	6/30	
Corticotrelin ovine triflutate injection (Acthrel)	rare	55566-0302-01	1 - expired 12/31/20	#VALUE!	4/30	Holding expired stock; Ferring discontinued Acthrel in late-September 2020 due to manufacturing sourcing issues. They were the sole suppliers of corticotrelin.
CYCLOPENTOLATE 1% 2 ML	60	17478-0100-02	0	0	5/7	0 x 15 mL; Tropicamine 1% x 44 in stockroom; Doctors Informed
DESMOPRESSIN 10 mcg/0.1ml (DDAVP) Rhinal Tube	1	55566-2400-00	0	0	Vendor stated 2022 return.	Nasal; 1 & 10 mL vials in stock
GELATIN ABSORBABLE FLIM (GELFILM)	0.5	00009-0297-03	0	0	5/31	Notified ophthalmic doc's.; Surgifilm

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# Weekly Drug Shortage Tracking

A	B	C	D	E	F	G
Use good judgement on loaning the list below and these: Sodium Phosphate, Potassium Phosphate vials; Bup+Epi, Lido+Epi						
No loaning: PROTAMINE, BETAMETASONE INJ SUSPENSION, CYCLOPENTOLATE						
Highlighted items would be considered critical:						
Name	AMU (EACHES)	NDC	Current Stock (eaches)	Runway Days	Return Date/Comment	Alternate/Comment
AMIFOSTINE (Ethylol) 500 mg Vial	rare	76310-0017-50	0	#VALUE!	4/30	
BETAMETH ACET/BETAMET SOD PHOS 6MG/ML	68	00517-0720-01 00517-0791-01	91	41	4/30	Main use PB clinics; Alt is Dex 5 mg/mL 5 ml

$$\text{Runway Days} = (D6/B6) * 30.416$$

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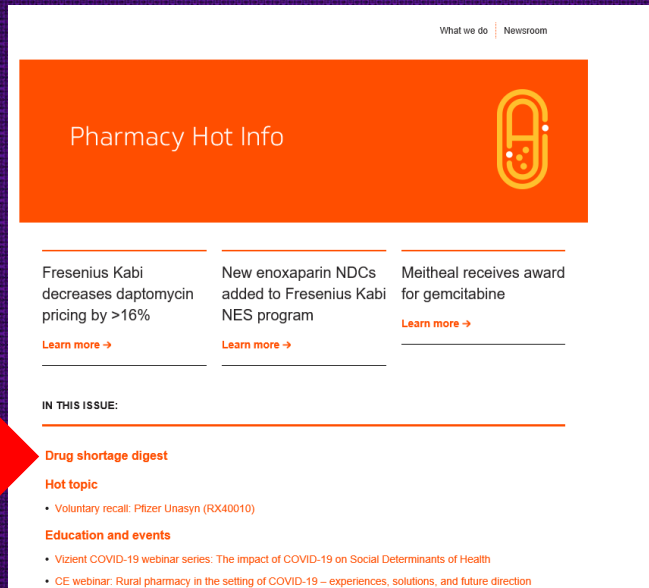
## Pivot Table

- Take lengthy tables and summarize simply and effectively.
- Pivot tables are one of Excel's most powerful features. A pivot table allows you to extract the significance from a large, detailed data set.
- A pivot table is a table of statistics that summarizes the data of a more extensive table. This summary might include sums, averages, or other statistics, which the pivot table groups together in a meaningful way.

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# Drug Shortage Alert: Bumetanide



What we do | Newsroom

## Pharmacy Hot Info

Fresenius Kabi decreases daptomycin pricing by >16% [Learn more →](#)

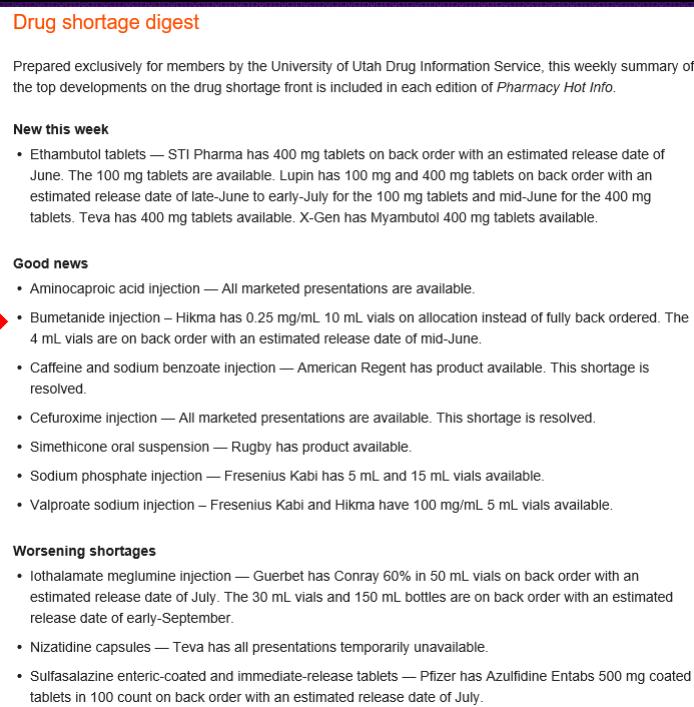
New enoxaparin NDCs added to Fresenius Kabi NES program [Learn more →](#)

Meitheal receives award for gemcitabine [Learn more →](#)

**IN THIS ISSUE:**

- Drug shortage digest**
- Hot topic**
  - Voluntary recall: Pfizer Unasyn (RX40010)
- Education and events**
  - Vizient COVID-19 webinar series: The impact of COVID-19 on Social Determinants of Health
  - CE webinar: Rural pharmacy in the setting of COVID-19 – experiences, solutions, and future direction

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## Drug shortage digest

Prepared exclusively for members by the University of Utah Drug Information Service, this weekly summary of the top developments on the drug shortage front is included in each edition of *Pharmacy Hot Info*.

**New this week**

- Ethambutol tablets — STI Pharma has 400 mg tablets on back order with an estimated release date of June. The 100 mg tablets are available. Lupin has 100 mg and 400 mg tablets on back order with an estimated release date of late-June to early-July for the 100 mg tablets and mid-June for the 400 mg tablets. Teva has 400 mg tablets available. X-Gen has Myambutol 400 mg tablets available.

**Good news**

- Aminocaproic acid injection — All marketed presentations are available.
- Bumetanide injection – Hikma has 0.25 mg/mL 10 mL vials on allocation instead of fully back ordered. The 4 mL vials are on back order with an estimated release date of mid-June.
- Caffeine and sodium benzoate injection — American Regent has product available. This shortage is resolved.
- Cefuroxime injection — All marketed presentations are available. This shortage is resolved.
- Simethicone oral suspension — Rugby has product available.
- Sodium phosphate injection — Fresenius Kabi has 5 mL and 15 mL vials available.
- Valproate sodium injection – Fresenius Kabi and Hikma have 100 mg/mL 5 mL vials available.

**Worsening shortages**

- lothalamate meglumine injection — Guerbet has Conray 60% in 50 mL vials on back order with an estimated release date of July. The 30 mL vials and 150 mL bottles are on back order with an estimated release date of early-September.
- Nizatidine capsules — Teva has all presentations temporarily unavailable.
- Sulfasalazine enteric-coated and immediate-release tablets — Pfizer has Azulfidine Entabs 500 mg coated tablets in 100 count on back order with an estimated release date of July.

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# Pivot Table on Bumetanide Shortage

- Offerings

CIN	NDC/UPC	GENERIC NAME	STRENGTH	FORM	SIZE
2726644	00409-1412-04	BUMETANIDE	0.25MG/ML	SDV	10X4 ML
2752640	00409-1412-10	BUMETANIDE	0.25MG/ML	MDV	10X10 ML

- Need to know AMU of both 4 and 10 mL vial sizes
- Over 1,500 dispensations for 1 year

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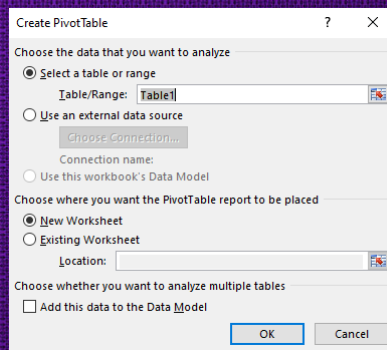
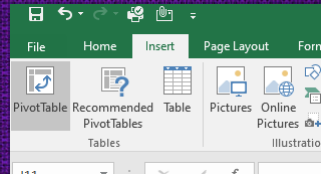
P	Q	R	S	T	U	V	W	X	Y	Z
Admin Co	Admin Component Med	Sum of Comp		Admin Location	Admin De	Admin Pal	AHFS	Count vial	Vial size	service Li
9308	BUMETANIDE 0.25 MG/ML INJECTION	2 mL		JAMS Hospital	F8 - CV/M	Med-Gen	40:28.08	1	4	MEDICAL
9308	BUMETANIDE 0.25 MG/ML INJECTION	2 mL		JAMS Hospital	F8 - CV/M	Med-Gen	40:28.08	1	4	MEDICAL
9308	BUMETANIDE 0.25 MG/ML INJECTION	8 mL		JAMS Hospital	H4 - TSICU	Med-Puln	40:28.08	2	4	MEDICAL
9308	BUMETANIDE 0.25 MG/ML INJECTION	8 mL		JAMS Hospital	H6 HOSPIT	Med-Gen	40:28.08	2	4	MEDICAL
9308	BUMETANIDE 0.25 MG/ML INJECTION	8 mL		JAMS Hospital	H6 HOSPIT	Med-Gen	40:28.08	2	4	MEDICAL
9308	BUMETANIDE 0.25 MG/ML INJECTION	8 mL		JAMS Hospital	F6 - MED S	Med-Gen	40:28.08	2	4	MEDICAL
9308	BUMETANIDE 0.25 MG/ML INJECTION	12 mL		JAMS Hospital	E4 -MEDIC	Med-Puln	40:28.08	3	4	RIMARY
9308	BUMETANIDE 0.25 MG/ML INJECTION	12 mL		JAMS Hospital	F8 - CV/M	Med-Card	40:28.08	3	4	RIMARY
9308	BUMETANIDE 0.25 MG/ML INJECTION	16 mL		JAMS Hospital	H4 - TSICU	Surgery-Ti	40:28.08	4	4	NEUROSC
9308	BUMETANIDE 0.25 MG/ML INJECTION	16 mL		JAMS Hospital	E4 -MEDIC	Med-Gen	40:28.08	4	4	RIMARY
9308	BUMETANIDE 0.25 MG/ML INJECTION	16 mL		JAMS Hospital	E4 -MEDIC	Med-Gen	40:28.08	4	4	RIMARY
9308	BUMETANIDE 0.25 MG/ML INJECTION	16 mL		JAMS Hospital	F4 - PROG	Med-Puln	40:28.08	4	4	RIMARY
9308	BUMETANIDE 0.25 MG/ML INJECTION	16 mL		JAMS Hospital	EMERGEN	Med-Puln	40:28.08	4	4	RIMARY
9308	BUMETANIDE 0.25 MG/ML INJECTION	16 mL		JAMS Hospital	F6 - MED S	Med-Gen	40:28.08	4	4	RIMARY
9308	BUMETANIDE 0.25 MG/ML INJECTION	16 mL		JAMS Hospital	F8 - CV/M	Med-Card	40:28.08	4	4	RIMARY
9308	BUMETANIDE 0.25 MG/ML INJECTION	20 mL		JAMS Hospital	H6 HOSPIT	Med-Gen	40:28.08	2	10	RIMARY
9308	BUMETANIDE 0.25 MG/ML INJECTION	20 mL		JAMS Hospital	H6 HOSPIT	Med-Gen	40:28.08	2	10	RIMARY
9308	BUMETANIDE 0.25 MG/ML INJECTION	20 mL		JAMS Hospital	EMERGEN	Med-Puln	40:28.08	2	10	RIMARY
9308	BUMETANIDE 0.25 MG/ML INJECTION	20 mL		JAMS Hospital	EMERGEN	Med-Puln	40:28.08	2	10	RIMARY
9308	BUMETANIDE 0.25 MG/ML INJECTION	20 mL		JAMS Hospital	H6 HOSPIT	Med-Gen	40:28.08	2	10	MEDICAL
9308	BUMETANIDE 0.25 MG/ML INJECTION	20 mL		JAMS Hospital	H6 HOSPIT	Med-Gen	40:28.08	2	10	MEDICAL
9308	BUMETANIDE 0.25 MG/ML INJECTION	20 mL		JAMS Hospital	H6 HOSPIT	Med-Gen	40:28.08	2	10	MEDICAL
9308	BUMETANIDE 0.25 MG/ML INJECTION	20 mL		JAMS Hospital	H6 HOSPIT	Med-Gen	40:28.08	2	10	MEDICAL
9308	BUMETANIDE 0.25 MG/ML INJECTION	96 mL		JAMS Hospital	H4 - TSICU	Surgery-Ti	40:28.08	10	10	MEDICAL
9308	BUMETANIDE 0.25 MG/ML INJECTION	96 mL		JAMS Hospital	A5 - MED S	Surgery-Ti	40:28.08	10	10	URGICAL
9308	BUMETANIDE 0.25 MG/ML INJECTION	96 mL		JAMS Hospital	A5 - MED S	Surgery-G	40:28.08	10	10	URGICAL
9308	BUMETANIDE 0.25 MG/ML INJECTION	96 mL		JAMS Hospital	H4 - TSICU	Neurosurg	40:28.08	10	10	NEUROSC
9308	BUMETANIDE 0.25 MG/ML INJECTION	96 mL		JAMS Hospital	H4 - TSICU	Surgery-C	40:28.08	10	10	NURSING
9308	BUMETANIDE 0.25 MG/ML INJECTION	96 mL		JAMS Hospital	E4 -MEDIC	Med-Gen	40:28.08	10	10	RIMARY
9308	BUMETANIDE 0.25 MG/ML INJECTION	96 mL		JAMS Hospital	H4 - TSICU	Surgery-C	40:28.08	10	10	NURSING
9308	BUMETANIDE 0.25 MG/ML INJECTION	96 mL		JAMS Hospital	E4 -MEDIC	Med-Gen	40:28.08	10	10	RIMARY

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# Pivot Table on Bumetanide Shortage

- Select columns of data and click Insert Pivot Table
- Choose location (New or Existing Worksheet)



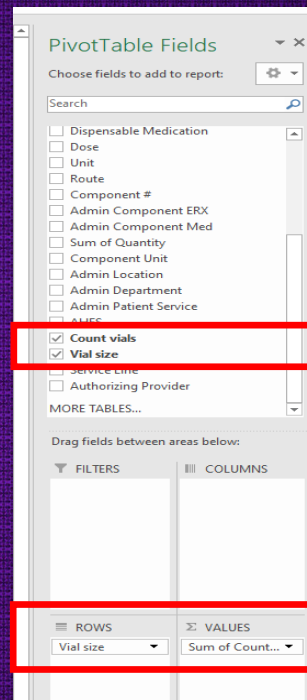
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## Pivot Tables - Bumetanide

- Row = Vial Size
- Count the sum of 4 and 10 mL

Row Labels	Sum of Count vials
4	2647
10	4024
(blank)	
<b>Grand Total</b>	<b>6671</b>

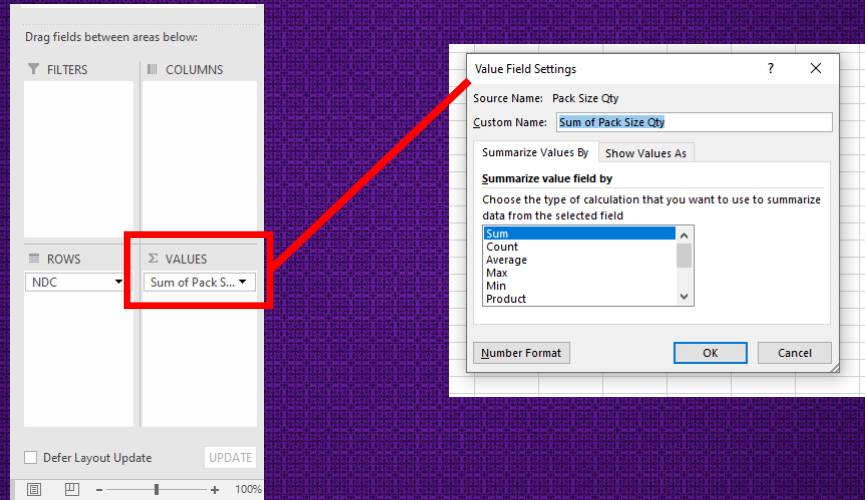
- AMU = 221 for 4 mL  
= 335 for 10 mL



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# Pivot Examples



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# Pivot Examples

- **Wrapped NDC Usage – Sod Bicarb with 5 NDCs of vials/syringes**

Row Labels	Count of Associated ERX
00409662502	1568
00409663734	221
63323008950	77
70092101550	31
76329335201	94
<b>Grand Total</b>	<b>1991</b>

- **Predominant Prescriber Usage Summarized and Sorted**

Row Labels	Count of Associated ERX
DAY, JOHN D.	608
EPPS, SARENTHIA M	63
TAYLOR, LAUREN E	36
SAVARESE, JOSEPH A.	34
EWING, LAUREN R	33
MUKHERJEE, AKASH	28
JOSEPH, MARINA	27
SASAPU, APPALA NAIDU	25



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# Pivot Examples

- Monthly Factor Dispensations – multiple lot numbers summarized to NDC

Sum of Total Usage	Total
NDC	
00169-7201-01	2
00169-7202-01	7
00169-7205-01	3
00169-7208-01	1
00944-3045-10	0
00944-3053-02	0
44206-0532-11	0
58394-0635-03	0
58394-0636-03	0
63833-0386-02	0
63833-0387-02	8
63833-0616-02	0
63833-0617-02	1
63833-0625-02	0
64193-0424-02	0
64193-0425-02	0
64193-0426-02	0
70257-0126-51	0
(blank)	22
Grand Total	44

Item No.	NDC	Description	UOIs
5648498	63833-0387-02	KCENTRA 1000 UNIT 1 EA KIT	2 PUBLIC HEALTH SERV
4867800	00169-7201-01	NOVOSEVEN RT 1 MG 1 EA SOLR	2 PUBLIC HEALTH SERV
Total:			

Item No.	NDC	Description	UOIs	Contract
5705272	63833-0617-02	HUMATE-P 1000 UNIT 1 EA SOLR	1	VIZIENT PFIZER C15063-10
5648498	63833-0387-02	KCENTRA 1000 UNIT 1 EA KIT	6	ACCESS BACKUP
4867818	00169-7202-01	NOVOSEVEN RT 2 MG 1 EA SOLR	1	NOVATION PFIZER C15063-20
4867842	00169-7205-01	NOVOSEVEN RT 5 MG 1 EA SOLR	3	NOVATION PFIZER C15063-20
4867867	00169-7208-01	NOVOSEVEN RT 8 MG 1 EA SOLR	1	NOVATION PFIZER C15063-20
Total:				

79

# Pivot Examples

- NDCs to Account Types

00206-8861-02	Sum of Quantity Invoiced
University of Arkansas Main - 340B	1
University of Arkansas Main GPO	1002
University of Arkansas Medical Center - 10-323299 - WAC	12
<b>Grand Total</b>	<b>1015</b>

- Location of Utilization

Count of CDM Units	8517	
Location Code	Total	%
ED	6074	71.3
H7	388	4.6
H6	316	3.7
EDUS	291	3.4
F9	210	2.5
F6	188	2.2
H9	172	2.0
E7	150	1.8
F8	137	1.6
ORPERI	133	1.6
F7	119	1.4

$$=6074/8517 * 100$$

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# Relationships Matter

- Vendors will allocate critical supplies.
- When wholesalers stockout:
  - Dropship from manufacturer
  - Direct order from manufacturer
    - Direct Accounts Established
    - Framework Purchase Orders



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The End  
Thank you so much!  
Questions?

[rhutts@uams.edu](mailto:rhutts@uams.edu)



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