

# iView and eMM





### **General Principles**

The Basics:

- The same practice that currently occurs on paper should occur in eMM, eg, If the pump is off for ½ hour the total should modified.
- IV site checks **must** be checked hourly and site checks documented in eMR
- For accuracy, best practice is that the fluid balance chart is updated hourly.
- At handover the RN's must go to the bedside to confirm the fluid balance chart is accurate and the appropriate fluids are prescribed. If the fluid balance is not accurate the appropriate section on the fluid balance chart should be modified



#### **General Principles**

#### Pump totals and fluid balance- essential for all patients on a strict fluid balance chart

Hourly infused volume = (Pump reading for the current hour) – (pump reading from previous hour)

- Hourly infused volume should be documented instead of accepting what is automatically populated into the cell
- If there is a minimal difference between the hourly infused volume and the volume that appears in the cell when double-clicked (i.e. the commenced rate), the volume can be accepted (this can vary depending on the clinical situation)
- At midnight the pump total must be reset
- For situations when the RN was unable to document on time, the total volume infused since the last entry can be divided by number of missed hours



#### **General Principles**

Fluid Balance- Standard Patients:

- There may be cases where a strict fluid balance on the patient is not required.
- In these situations confirming the pump totals to input into the fluid balance chart each hour may not be required.
- The RN however **must** check the pump totals are similar to their fluid balance regularly throughout their shift.
- The RN **must** accurately document the hourly total by either modifying or accepting the auto populated result



**Standard Flush Volumes (based on product information)** 

- Standard flush volumes **must** be used across all areas.
- This will ensure consistency with volumes and an accurate fluid balance chart

What lines, burette etc	mL
Infusion Pumps	
Alaris line, Ball Burette, inc typical extension sets	35
Baxter line, Ball Burette, inc typical extension sets	25
Baxter Blood line, Ball Burette, inc typical extension sets	30
Baxter line, Baxter Burette, inc typical extension sets	20
Baxter Blood line, Baxter Burette, typical extension sets	20
Syringe Drivers (most common sets)	
Lines and typical extension sets	3



#### **General Principles: Venous Access Devices**

- If you have inserted IVC or accessed a CVAD it must have a dynamic group activated from the lines-tubes-drain section of iView. This is to enable documentation of site and pump checks from the fluid balance chart
  - Peripheral IV Cannula
  - CVAD Care
- If you receive a patient from another hospital that has an IVC insitu or a CVAD accessed you **must** create a dynamic group from the intake section on iView
  - Peripheral IV cannula
- Any patient that has central line lumen care attended **must** have a dynamic group/s created from the lines-tubesdrain section or the Intake section of iView
  - CVAD Lumen Care
- Any patient that has an IV Push Medication **must** have a dynamic group/s created from the intake section of iView





# DOCUMENTING VENOUS ACCESS DEVICES





#### **iView: Peripheral IV Cannula**

- 1) Click on Lines- Tubes-Drain
- 2) Select Peripheral IV Cannula
- Click on Calendar and "add dynamic group"





## iView: Peripheral IV Cannula

OK

# 4) Complete the appropriate fields and click OK

	nnula site:
Arm	
Cubital fossa	
Femoral vein	
Foot	
Hand	
Scalp vein	
Arterial line	
Other	
Peripheral IV ca	nnula laterality:
Right	
Right Left	
Right Left	
Right Left	
Right Left	
Right Left Peripheral IV ca	nnula gauge:
Right Left Peripheral IV ca 14g (Orange)	nnula gauge:
Right Left Peripheral IV ca 14g (Orange) 16g (Grey)	nnula gauge:
Right Left Peripheral IV ca 14g (Orange) 16g (Grey) 18g (Green)	nnula gauge:
Right Left Peripheral IV ca 14g (Orange) 16g (Grey) 18g (Green) 20g (Pink)	nnula gauge:

# 5) Complete fields and sign off

	12:59
Peripheral IV Cannula 🛛 🐻	
⊿ <arm (pink)="" 20g="" right=""></arm>	
Parent/carer verbal consent obtain	Yes
Inserted date/time	06/11/201
Inserted by	Mickey
Insertion number of attempts	1
Insertion analgesia agents	Topical a
Blood sample collected	Yes
Dressing applied on insertion	Sterile oc
Comment	
Site check	Cannula p
Set changed	
Pump pressure check	
Removed date/time	
Removed by	
Peripheral IV Cannula comment	
Extravasation identified	

The cannula will nowappear on the fluid balancechart.6) Document site checkand pump pressure eachhour

S 104		06/11/2019		
		12:00 - 12:59	12:00 Subtotal	1
<sup>4</sup> Intake Total				
⊿ IV flushes	•			
Peripheral IV Cannula				
△ Arm Right 20g (Pink)				
Site check		Cannula p		
Pump pressure check				
Comment				
4 Mills / Communication Characterist				



#### iView: CVAD Care

- 1) Click on Lines- Tubes-Drain
- 2) Select CVAD Care
- 3) Click on Calendar and "add dynamic group"

CVAD Care       2         CVAD Lumen Care       Peripheral IV Cannula         Epidural and Regional Infusion Line Care       Enteral Tube         Urinary Catheter       Initiation         Bladder irrigation       12:00 -         Chest Drains       12:59         Orains/Tubes       CVAD Care	Lines - Tubes - Drains	Find Item  Critical High Low
Stoma	CVAD Care CVAD Lumen Care Peripheral IV Cannula Epidural and Regional Infusion Line Care Enteral Tube Urinary Catheter Bladder imigation Chest Drains Drains/Tubes Stoma	Result Comments R 12:00 - 12:59 △ CVAD Care 3 ₹



# iView: CVAD Care

4) Complete the appropriate fields and click OK

#### CVAD type ward care:

#### CVC tunnelled cuffed

CVC tunnelled uncuffed CVC non-tunnelled - percutaneously inserted IVAD - Port (Implantable Vascular Access Device) PICC (Peripherally inserted Central Venous Catheter) Vascath Midline Second CVAD Umbilical 4

#### CVAD lumen ward care:

Single Double Triple





### iView: CVAD Care

- 5) Complete appropriate fields and sign off **Some tips!** 
  - Leave insertion date blank unless day of insertion of actual line
  - Port needle insertion date and port needle size is on both Port and CVC's dynamic groups. Leave these columns blank for CVC's
  - To add date of CVC access use comment box

CVAD Care	5
△ <cvc double<="" p="" tunnelled="" uncuffed=""></cvc>	>
CVAD insertion date	
Dressing Type	
Cleansing Agent	
Date Dressing Changed	
Port needle insertion date	
Port needle size	5
Limb circumference	J
Site Condition	
Site Condition Intervention	
Integrity Assessment	
Integrity Interventions	
Dressing Intact	
Pump pressure check (CVAD)	
External catheter measurement C	m
IV set change	
Removed	
Comment	



The Sydney children's

### iView: CVAD Care

The CVAD will now appear on the fluid balance chart.

6) Document site check and pump pressure each hour

Intake Total		
⊿ IV flushes		
△ Peripheral IV Cannula		
△ CVAD Assessment		
CVC tunnelled cuffed Double		
Site Condition	Clean and	
Site Condition Intervention		
Integrity Assessment		
Integrity Interventions	6	
Dressing Intact	0	
Pump pressure check (CVAD)		



## Creating a dynamic group for IV Push Medications



2)

I. Highlight Other II. Type in "Push Medication III. Select IV site IV.Click "OK

#### IV fluid type: NaCl 0.9% Glucose 5% Glucose 5% NaCl 0.9% Glucose 5% NaCl 0.45% Other Push Medication

**Other: Push Medication Hand - Right** 

#### IV site:

.abel:

Cubital Fossa - Left Cubital Fossa - Right CVC - Red Lumen CVC - White Lumen CVC - Blue Lumen CVC - Brown Lumen CVC - Purple Lumen E Femoral Vein - Left Femoral Vein - Right Foot - Left Hand - Left Hand - Right Portacath (single)

OK

#### 3) IV Push medication is then populated into the fluid balance chart

giucose ๖% & soaium cnioriae บ.ษ% infusion 1000 mL	mL	
⊿ IV flushes	e.	
⊿ <other: -<="" hand="" medication="" p="" push=""></other:>	Right>	
IV flush amount	mL	
△ Peripheral IV Cannula		





# **Overview Fluid Balance Chart**





## **General principles**

#### iView:

- Flows opposite to BTF (most recent time on the left)
- It is updated at the end of the hour.
  - Eg 10:00-10:59 is updated
     @11:00 when you confirm the pump totals
- All infusions, medications and IX flushes are on separate sections of the chart.
- The system cannot add the medication section and the continuous infusion sections together.

			12:00 Subtetal	11:00 - 11:59	10:00 - 10:59	09:00 - 09:59
	△ Intake Total		195		70	55
	4 Continuous Infusions		175		70	35
	glucose 5% & sodium chloride 0.9% infusion 1000 mL	mL	150		60	30
	sodium chloride 0.9% infusion 1000 mL	mL	25		10	5
	△ Medications					
	flucloxacillin + glucose 5% NaCl 0.9%	mL				
	vancomycin + NaCl 0.9%	mL				
	⊿ IV flushes	ę	20			20
	△ Other: Push CVC - White Lumen					
	IV flush amount	mL	20			20
	△ Other: Push CVC - Red Lumen					
	IV flush amount	mL				
J	1					





#### **Subtotals**

#### Fluid Balance: Subtotals

- 4 hourly subtotals are only for the previous 4 hours.
  - 12:00 subtotal is only the total of fluid from 08:00-11:59
- 24 Hour total gives the intake for the whole day.

		12:00 Subtotal
△ Intake Total		195
△ Continuous Infusions		175
glucose 5% & sodium chloride 0.9%		
infusion 1000 mL	mL	150
sodium chloride 0.9% infusion 1000		
mL	mL	25





#### **Continuous Infusions: Modifying fluid total**

		12:00 Subtotal	11:00 - 11:59	10:00 - 10:59	09:00 - 09:59
⊿ Intake Total		195		70	55
∠ Continuous Infusions		175		70	35
glucose 5% & sodium chloride 0.9% infusion 1000 mL	mL	150		60	30
sodium chloride 0.9% infusion 1000 mL	mL	25		10	5
⊿ Medications					
flucloxacillin + glucose 5% NaCl 0.9%	mL				
vancomycin + NaCl 0.9%	mL				
⊿ IV flushes	•	20			20
△ Other: Push CVC - White Lumen					
IV flush amount	mL	20			20
Other: Push CVC - Red Lumen					
IV flush amount	mL				

You should modify the amount each hour to reflect the total volume that has gone through

Changing the number does not change the rate at which the fluids are prescribed at.

The glucose 5% and Sodium Chloride 0.9% is charted to run @60mL/hr

Eg: between 09:00-09:59 the glucose 5% and Sodium Chloride 0.9 %was not running for ½ hour as the cannula was tissued. Only 30 mL went through.



#### **Titratable infusions- modifying fluid balance**

	11:00 - 11:59	10:00 - 10:59	09:00 - 09:59	08:00 - 08:59
Intake Total	50	100	100	85
Continuous Infusions	50	100	100	85
heparin additive 1000 Units [10 units/kg/hr] + glucose 5% infu mL	50 🔶	100	100	85
△ IV flushes				

The same applies to titratable infusions: The heparin infusion is charted @100mL/hr Eg: between 11:00-11:59 the heparin infusion was not running for ½ hour as the cannula was tissued and only 50 mL went through.



#### **Titratable infusions- Rate Change**

Quick View V Drips Titratable Infusions Measurements Urinalysis Outotoxic	Find Item	h 🔲 Low ments Ra	Abnorm	aal 🔲 Unaut	h Tc 1)	make changes to the rate Select "quick view"
Glycaemic Monitoring Insulin Pump Details CHW Bedside Handover Checklist		12:00 - 12:59	11:00 - 11:59	10:00 - 10:59	2) 09: 05	Select appropriate time frame
	△ IV Drips				3)	Change rate
	heparin additive 1000 Units [10 units Rate mL/hr heparin units/kg/hr	50 5			4)	2 nurses need to sign off
	✓ Measurements Weight kg					



# Intermittent Infusions- using pumps running continuously

Steps to take:

- 1. Leave volume next to drug empty
- 2. Select compatible diluent
- 3. Add volume of drug and expected flush volume
- 4. Select site
- 5. Select appropriate infusion time

What next?

1. Amount entered will automatically populate into fluid balance chart

*flucloxacillin:	630 mg 🕶 V	olume	e: 0	ml
Diluent : glu	cose 5% NaCl 0.9% 👻 75		ml	
*Route	IV Intermittent Infusion 👻 Sit	e: H	land - Right	•
Total Volume :	75 Infused Over : 30		minute(s	) 🔻
			06:00 - 06:59	
<sup>1</sup> Intake T	otal		75	
⊿ Conti	nuous Infusions			
gluco infusi	se 5% & sodium chloride 0.9% on 1000 mL	mL		
⊿ Medi	ations		75	
flucio	acillin + glucose 5% NaCl 0.9%	mL	75	



### **Push Medications**

Steps to take:

- 1. Leave volume next to drug empty
- 2. Diluent "<none>"
- 3. Leave mL next to diluent box empty
- 4. Select site
- 5. Do not add infusion time

What next?

- Amount including flush needs to be entered into "right hand push" line on the fluid balance chart
- 2. Add comment with amount of drug and expected amount of flush

*ampicillin: 1	,250 mg 👻 Volume: 0 ml
Diluent : <no< td=""><td>ne&gt; 🔹 ml</td></no<>	ne> 🔹 ml
*Route :	IV Intermittent Infusion 👻 Site : Hand - Right 👻
Total Volume :	0 Infused Over : 0

flucloxacillin + glucose 5% NaCl 0.9	9% mL			
⊿ IV flushes		30		
Other: Push Medication Hand	- Right			
IV flush amount	mL	30	Ì	
Peripheral IV Cannula				





## Maintaining an accurate fluid balance chart

		12:00 Subtotal	11:00 - 11:59	10:00 - 10:59	09:00 - 09:59	08:00 - 08:59	08:00 Subtotal	07:00 -	C
△ Intake Total		195		70	55	70	260	260	
⊿ Continuous Infusions		175		70	35	70	15	15	
glucose 5% & sodium chloride 0.9% infusion 1000 mL 60 mL/hr	mL	150		60	30	60	15	15	
sodium chloride 0.9% infusion 1000 mL IO mL/hr	mL	25		10	5	10			
⊿ Medications							225	225	
flucloxacillin + glucose 5% NaCl 0.9%	mL						75	75	
vancomycin + NaCl 0.9%	mL						150	150	
⊿ IV flushes	•	20			20		20	20	
△ Other: Push CVC - White Lumen									
IV flush amount	mL	20			20				
△ Other: Push CVC - Red Lumen									
IV flush amount	mL						20	20	

All medications and fluids were started at 0700 for this patient. At 0800 I updated my fluid balance chart.

@ 0800 my pump reading for glucose 5% + N/S 0.9% was 90 mL but 75ml was Fluclox which is in medications. The remaining 15ml is put in the box for 0700-0759.

@ 0800 my pump reading for N/S
0.9% was 150 mL but 150ml was
Vancomycin which is in
medications. I do not add anything
to the 0.9% box for 0700-0759 as
it is already accounted for.

#### Pump Readings for glucose 5% & sodium chloride 0.9%

White	08	09	10		
5%	90	150	180	240	

# Pump Readings for sodium chloride 0.9%





### What to do if you miss an hour

#### Example:

The last pump reading done at 0700 was 90ml. You haven't been able to read the pump again until 0900. The pump total is now 170 mL

Step 1: Minus current total from last known total

• 170-90= 80 mL

**Step 2:** Divide the result by the number of hours missed

• 80/2= 40 mL

Step 3: Update fluid balance

- 0700-0759= 40 mL
- 0800-0859= 40 mL

	08:00 - 08:59	08:00 Subtotal	07:00 - 07:59	06:00 - 06:59	
Intake Total	40	165	70	95	
4 Continuous Infusions	40	60	40	20	
glucose 5% & sodium chloride 0.9% infusion 1000 mL mL	40	60	40	20	
⊿ Medications		75		75	
flucloxacillin + glucose 5% NaCl 0.9% mL		75		75	
A 19 2 41 1					



### 24 hour total- use for handover and checking totals



When utilising the 24 hour total to handover and check totals you must be aware of which IV site each fluid bag is running through and where each medication was infused.

#### **Example:**

<u>White Lumen: glucose 5% + N/S 0.9%</u> You know the fluclox ran through this lumen Add 165ml + 75ml = 240ml Pump reads 240ml This lumen does not require any modification

Red Lumen: N/S 0.9%

You know the vancomycin ran through this lumen Add 25ml + 150ml = 175ml Pump reads 174ml The Iml difference does not require modification



My pump wasn't reset at midnight?

- At 0100 my pump total is 420.
- Pump not reset @2400: Pump total and 24 hour total was accurate at 390mL
- Steps to take:
  - 1. Minus current pump total from the 24 hour total on the 3/11
    - 420-390= 30 mL
  - 2. Clear pump
  - 3. Enter 30 mL into 00:00-00:59 box
  - 4. For every hour after, the 24 hour total should be 30 mL more than the pump

🤻 ñu				03/11,
	24 Hour Total	00:00 Subtotal	23:00 - 23:59	22:00 - 22:59
glucose 5% & sodium chloride 0.9% infusion 1000 mL ml	390	180	45	45





@0700

Pump total=270 Fluid Balance = 300 30mL deficit on pump





# **Complex Patients**





#### **Complex Patient: Multiple Medications and Infusions**

- There will be a number of patients in particular specialty areas that require multiple medications and infusions and a strict fluid balance must be done on these patients
- There are resources available to help keep track of your pump totals e.g. pump reading table which can be used to write out your totals for each pump and keep note of where each medication went



# Resource that can be used to help read the pumps hourly on multiple patients



You can list the fluid type or pump channel – whatever is easy for you. This is for your records only



#### 8 hour shift on a BMT patient – recording pump readings hourly

Time→	8	9	10	11	12	1	2	3	4	5	6	7
A 0,91.	VIS 20	49 vanc	74.6.000	92.6	114	133	150	150	150			
BTPN	19	40	58.8	72.9	91	107	125	168	193			
O Ligio	3	5.8	8.7	10.8	13.4	15.8	18.3	24.6	28.2			
VOI DIS	de 2.5	30	mazalon	38.6 potassium	a dihuprogen	prospirate	66.501	101 GCSF	106			
Feed			Feed started	7	18	27	37	49	57			
(A) NIS	>											
C NIS												
-												



### How to input your pump readings

1. If you read each pump @ 1200

Channel A (Hydration) = 114ml

Channel B (TPN) = 91ml

Channel C (Lipids) = 13.4ml

Syringe driver (drug line) = 47ml

Time→	8	9	10	11	12
Pump↓					
A + 51.00	20	49 vanc	74.6vanc	92.6	114
BTPN	19	40	58.8	72.9	91
CLEId	3	5.8	8.7	10.8	13,4
VOI DIS der	panadol 2.5	30	mazalon	38.6	47 dihuangan

- 2. Deduct the totals from 1100 from these readings to get the totalfluid run through in the last hour
- 3. Input these numbers into the 11:00 11:59 box

E.g. Channel A (0.9% N/S + 5% dex) would be:

114ml (1200 total) - 92.6ml (1100 total) = 21.4ml.

No medications went through in this hour so this amount is inputted into the cell for this fluid type

		11:00 – 11:59
Intake Total		68.93
△ Continuous Infusions		42.1
glucose 5% & sodium chloride 0.9% infusion 1000 mL	mL	21.4
glucose 5% infusion 1000 mL	mL	
1000 mL	mL	18.1
SMOFlipid 20% 500 mL	mL	2.6
sodium chloride 0.9% infusion 1000 mL	mL	
⊿ Medications		10.33
filgrastim + glucose 5%	mL	
metoclopramide + NaCl 0.9%	mL	
paracetamol + NaCl 0.9%	mL	
potassium dihydrogen phosphate + N	mL	10.33
vancomycin + glucose 5% NaCl 0.9%	mL	



#### How to input readings into cells

R 10		22/10	/2019		
		12:00 – 12:59	11:00 – 11:59	11:00 Subtotal	10:00 – 10:59
4 Intake Total		56.73	68.93	243.85	61.15
△ Continuous Infusions		37.4	42.1	124.1	39.4
glucose 5% & sodium chloride 0.9% infusion 1000 mL	mL	19	21.4	42.6	22.6
glucose 5% infusion 1000 mL	mL				
parenteral nutrition solution (TPN) 1000 mL	mL	16	18.1	66.9	14.1
🔚 SMOFlipid 20% 500 mL	mL	2.4	2.6	10	2
sodium chloride 0.9% infusion 1000 mL	mL			4.5	0.6
⊿ Medications		10.33	10.33	91.75	7.75
filgrastim + glucose 5%	mL				
metoclopramide + NaCl 0.9%	mL			6	
paracetamol + NaCl 0.9%	mL			28	
potassium dihydrogen phosphate + N	mL	10.33	10.33	7.75	7.75
vancomycin + glucose 5% NaCl 0.9%	mL			50	
vancomycin + glucose 5% ivaci 0.9%	IIIL			50	

When you double click on the cell for that fluid type the prescribed rate will auto populate. You will change this to the amount you have calculated has gone through.



This means that each hour may have a different amount infused but as long as the bag has been signed off for the prescribed rate, this will not matter.



## When medications are running through the drug line

	PC iiu		22/10/2019				
			12:00 – 12:59	11:00 – 11:59	11:00 Subtotal	10:00 – 10:59	@
@ 14:00 I work out that	⊿ Intake Total		56.73	68.93	243.85	61.15	my
my total for that hour is	△ Continuous Infusions		37.4	42.1	124.1	39.4	8.3
10.33ml	glucose 5% & sodium chloride 0.9% infusion 1000 mL	mL	19	21.4	42.6	22.6	
The potassium	glucose 5% infusion 1000 mL	mL					B
dihydrogen phosphate	parenteral nutrition solution (TPN)						CO
amount of 10.33ml	1000 mL	mL	10	18.1	10	14.1	thi au
I leave the 0.9% NaCl	sodium chloride 0.9% infusion 1000		2,4	2.0	10	0.6	7.
column blank	△ Medications		10.33	10.33	91.75	7.75	
	filgrastim + glucose 5%	mL				<b>Λ</b>	0.0
	metoclopramide + NaCl 0.9%	mL			6		an
	paracetamol + NaCl 0.9%	mL			28		• at
	potassium dihydrogen phosphate + N	ml	10.33	10.33	7.75	7.75	IN
	vancomvcin + glucose 5% NaCl 0.9%	mL		_	50		N

@1200 I work out that my total for that hour is 8.35ml

Because this drug was commenced <sup>3</sup>/<sub>4</sub> way through this hour it has auto populated to 7.75mls.

0.6mls needs to be accounted for and is inputted into the 0.9% NaCl box



## If you want to check that your fluid balance chart matches your pumps

₹	<u>300</u>	
		24 Hour Total
4	Intake Total	590.49
	△ Continuous Infusions	321
	glucose 5% & sodium chloride 0.9% infusion 1000 mL mL	100
	glucose 5% infusion 1000 mL mL	
	parenteral nutrition solution (TPN) 1000 mL mL	187
	SMOFlipid 20% 500 mL mL	27.4
	sodium chloride 0.9% infusion 1000 mL mL	6.6
	4 Medications	180.99
	filgrastim + glucose 5% mL	8
	metoclopramide + NaCl 0.9% mL	6
	paracetamol + NaCl 0.9% mL	56
	potassium dihydrogen phosphate + N mL	30.99
	vancomycin + glucose 5% NaCl 0.9% mL	50
	4 IV flushes	19
	4 Other: push medications CVC - Re	
	IV flush amount mL	19

At 4pm if I scrolled to the left to the 24 hour total to ensure my pump totals were correct I would be doing the following calculations

#### White Lumen:

0.9% N/S + 5% dex – Showing 100ml but my Vancomycin also went through this line which was 50ml = 150ml (this will show on this pump)

TPN – 187mls has been calculated and my pump reads 193mls (The 5ml difference is acceptable)

Lipids – 27.4ml has been calculated and my pump reads 28.2ml (The 0.8ml difference is acceptable)

#### Red Lumen:

Minimal volume with 0.9% N/S / 5% dex –6.6mls has been calculated + add the medications that have gone through this line (8 + 6 + 56 + 30.99) = 107.59ml. The pump reads 106mls (The 1.59ml difference is acceptable)



#### **Pump Reconciliation**

- If an accurate fluid balance is maintained "Pump Reconciliation" does not need to occur.
- It is recommended this practice not be implemented due to the complexities of adding and then having to remove "other output" and "other input" sources.
- Instructions for how to "pump reconcile" are available on Learning.Kids