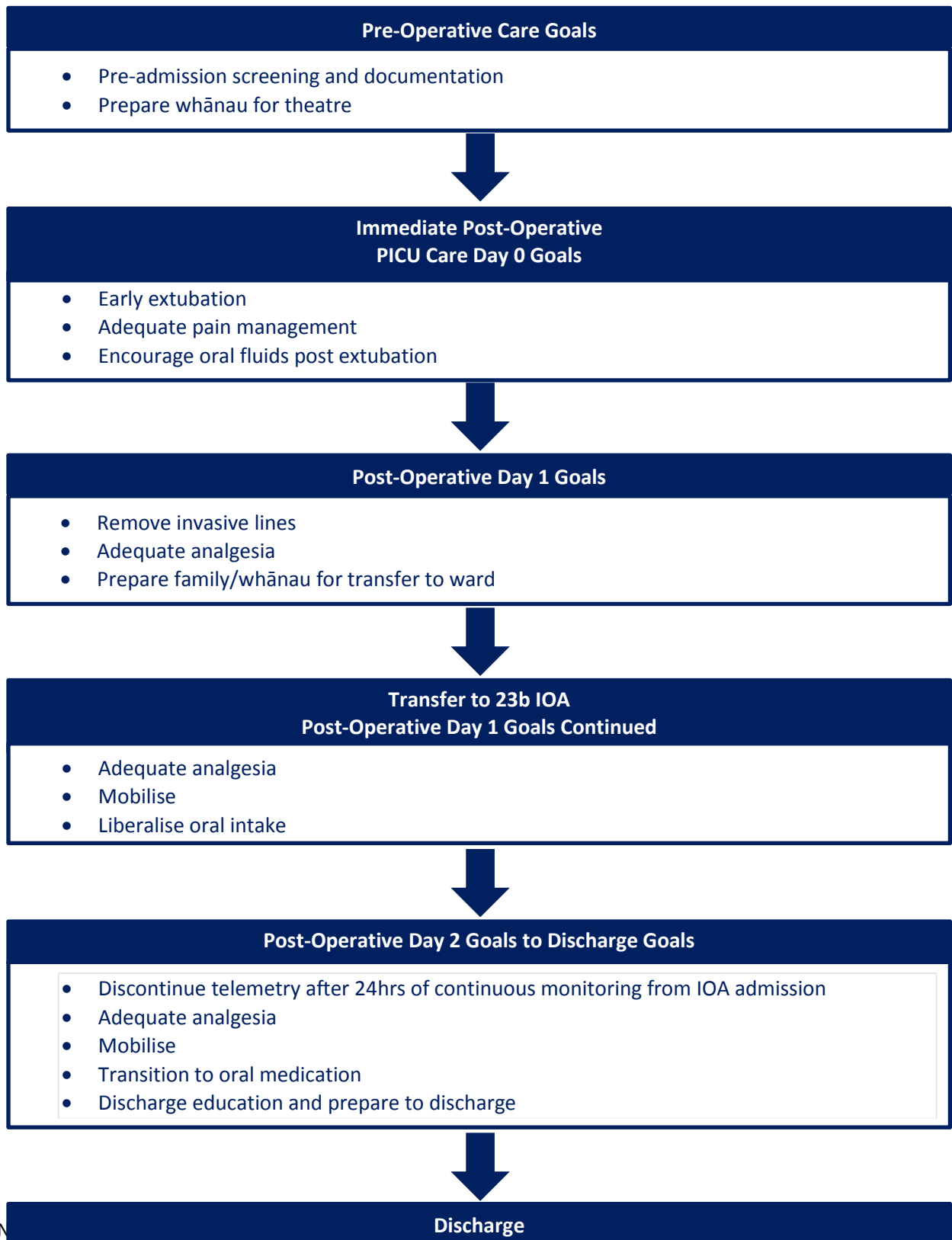
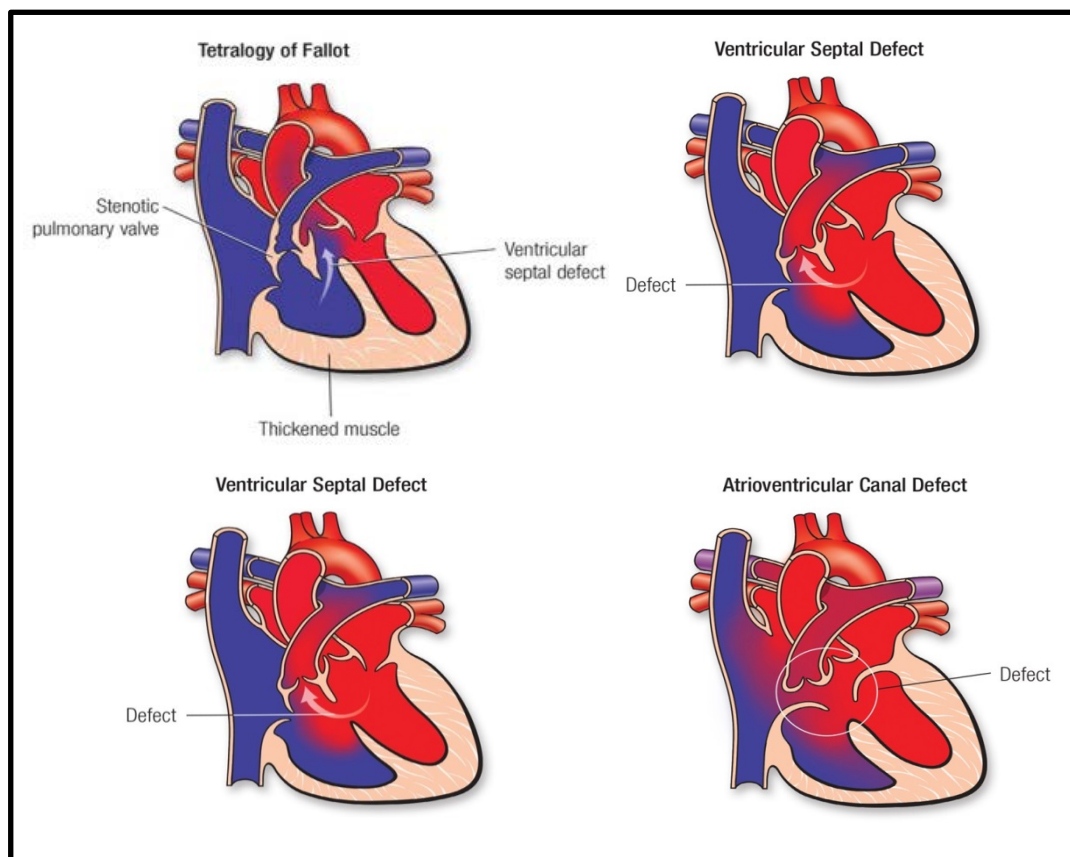


Biventricular Pathway for 5-15 years

Expected length of stay 5 days



Biventricular Clinical Pathway 5 to 15 years



Inclusion Criteria	Exclusion Criteria
<ul style="list-style-type: none"> 4-15 years ASD- primum, secundum VSD- inlet,outlet, muscular Aortic and mitral valve repairs Conduit replacement Subaortic membrane AV canal Tetralogy of Fallot 	<ul style="list-style-type: none"> Single ventricles 1 1/2 ventricle repairs Non-bypass surgery

Pathway Instructions	
Pathway	If the child meets the inclusion criteria please document 'Commenced on Cardiac Clinical Pathway' in clinical notes.
Clinical/care decisions	Document if the decision was made not to follow the recommended action/ intervention. Example regular 6 hourly paracetamol not administered because
Clinical management	Follow the recommended clinical management when the child deviates from the clinical pathway.

Pre-Operative Care

Date:

Goals: Prepare pre-operative admission and documentation
Family/whānau education

	Pre-Operative Care	AM	PM	Clinical/Care decisions
Preadmission screening	<ul style="list-style-type: none"> ○ Overseas patients <ul style="list-style-type: none"> - MRSA + MSSA screening (nasal and groin swab), - MRO screening (rectal/faeces swab) ○ Patients transferred from other hospitals <ul style="list-style-type: none"> - MRSA + MSSA screening 			
Medication management	<ul style="list-style-type: none"> ○ Withhold ACE inhibitors and diuretics once NBM ○ Antiarrhythmic and beta blocker should be given unless specified by anaesthetist ○ Aspirin should have been stopped 2-5 days prior to surgery ○ Pre-medication charted 			
Pre-operative preparation	<ul style="list-style-type: none"> ○ Shower and chlorhexidine wipe the night prior to surgery and morning of surgery ○ Organise interpreter for consent if required ○ If consent not completed done by 5pm Clinical Charge Nurse to follow up ○ Pre-op checklist completed (see cardiac surgery admission checklist) 			
Nutrition	<ul style="list-style-type: none"> ○ Establish NBM times (see anaesthesia fasting guideline and cardiac surgery admission process guideline) 			
Clinical management	<ul style="list-style-type: none"> ○ Contact surgical Fellow/Registrar if the patient has any of the following: <ul style="list-style-type: none"> - Temp > 37.5 - Signs of chest infection - Infected skin lesions - Vomiting /Diarrhoea for the last 24 hours - Infectious contact. i.e. Chicken pox, measles 			Recommence pathway once theatre date confirmed Yes / No

Day of Surgery
PICU post-operative day 0

Date:

Goals: Early extubation
Ensure adequate analgesia

	PICU Post-Op Day 0	AM	PM	Clinical/Care decisions
EXACT protocol	<ul style="list-style-type: none"> EXACT as per 2 or 6 hour protocol Administer supplemental O2 to maintain SpO2 >93-98% Identify patients suitable for early chest drain removal protocol on 20:00 ward round CLAB and Glamorgan 			Extubated as per EXACT protocol Yes / No
Pain management	<ul style="list-style-type: none"> Follow PICU unintubated greater than 12 months or over 30kg analgesia and sedation algorithm 6 hrly paracetamol 8 hrly ibuprofen unless contraindicated - can be administered on an empty stomach Administer ondansetron if child has postoperative nausea or vomiting 			Regular 6 hrly paracetamol administered Yes / No Regular 8 hrly ibuprofen administered Yes / No
Fluid management	<ul style="list-style-type: none"> Discontinue IV maintenance fluids post extubation 			
Nutrition	<ul style="list-style-type: none"> No fluid restriction necessary NG tube is not required in children > 5 years 			
Post-operative antibiotics	<ul style="list-style-type: none"> Cephazolin - 2 doses post-operative 			
Family/whānau support	<ul style="list-style-type: none"> Orientate Family/whānau to PICU 			
Clinical management	<ul style="list-style-type: none"> Diversion from the EXACT protocol The child breaches the pathways but recommences the pathway post extubation. 			Recommence pathway once extubated Yes / No

Post-Operative Day 1

PICU

Date:

Goals: Ensure adequate analgesia
Removal of chest drains and invasive lines

	Post-Op Day 1	AM	PM	Clinical/Care decisions
Interventions	<ul style="list-style-type: none"> ○ Wean O2 to maintain SpO2 >93-98% ○ Remove chest drains at 06:00 if patient meets early chest drain removal criteria or post-surgical ward round ○ Ensure central line and urinary catheter remain insitu ○ Post ward round remove <ul style="list-style-type: none"> - All peripheral cannulas - Arterial Line ○ Complete CLAB and Glamorgan bundle of care 			Removal of invasive lines except CVL and urinary catheter Yes / No
Medication	<ul style="list-style-type: none"> ○ Discuss medication management during surgical ward round <ul style="list-style-type: none"> - Aspirin - Antiarrhythmics - Sildenafil ○ Commence twice daily IV frusemide and potassium sparing diuretic if: <ul style="list-style-type: none"> - K+ and creatinine are normal 			
Pain management	<ul style="list-style-type: none"> ○ Follow PICU unintubated greater than 12 months or < 30kgs sedation and analgesia algorithm ○ 6 hrly paracetamol ○ 8 hrly ibuprofen unless contraindicated ○ Discontinue PCA once chest drains have been removed ○ Administer a dose of oral morphine/tramadol post discontinuing PCA ○ Ondansetron if child has postoperative nausea or vomiting 			Regular 6 hrly paracetamol administered Yes / No Regular 8 hrly ibuprofen administered Yes / No PRN oral morphine/tramadol given after stopping PCA Yes / No
Mobilisation	<ul style="list-style-type: none"> ○ Mobilise up into a chair prior to chest drain removal 			
Fluid management	<ul style="list-style-type: none"> ○ Free oral fluids and soft/light diet as tolerated ○ No fluid restriction required 			
Diagnostic tests	<ul style="list-style-type: none"> ○ Chest x-ray post drain removal ○ Post-operative ECG prior to surgical ward round 			

	Post-Op Day 1	AM	PM	Clinical/Care decisions
PICU discharge documentation and patient handover	<ul style="list-style-type: none"> Medical team to review chest x-ray post drain removal prior to transfer Discharge documentation completed including PEWS score, pain team and PaR team referral if required. Medical staff to call 23b admission phone to handover to Registrar/NP prior to transfer 			
Family/whānau support	<ul style="list-style-type: none"> Prepare family/whānau for PICU discharge 			
Clinical management	<ul style="list-style-type: none"> Failure to discharge from PICU due to change in clinical status Patient resumes pathway on day one post-op once clinical status stable and ready for transfer to 23b 			Patient recommences pathway once clinically Yes / No

Post-operative Day 1 continued
Ward 23B

Date:

Goals:
Adequate analgesia
Mobilise out of bed
Liberalise oral intake

	Post-Op Day 1 Continued Ward 23B	AM	PM	Clinical/Care decisions
Ward admission	<ul style="list-style-type: none"> ○ Wean O2 to maintain SpO2 >93-98% ○ Remove PIV if still insitu ○ Remove urinary catheter at 20:00hrs ○ Continuous monitoring for 24 hours post admission 			
Fluid management	<ul style="list-style-type: none"> ○ Review twice daily frusemide and potassium sparing diuretic ○ Consider transitioning to oral diuretics 			
Pain management	<ul style="list-style-type: none"> ○ 6 hrly paracetamol ○ 8 hrly ibuprofen unless contraindicated ○ Morphine PRN or tramadol PRN ○ Ondansetron for nausea and vomiting 			Regular 6 hrly paracetamol administered Yes / No Regular 8 hrly ibuprofen administered Yes / No
Mobilisation	<ul style="list-style-type: none"> ○ Mobilise up into chair for all meals ○ Mobilise up to the toilet/mobilise around the bed ○ Support and encourage family/whānau to mobilise child 			
Daily needs bundle of care	<ul style="list-style-type: none"> ○ Glamorgan bundle of care ○ Hygiene needs/oral care 			
Nutrition	<ul style="list-style-type: none"> ○ Encourage oral fluids and soft/light diet as tolerated 			
Family/whānau support	<ul style="list-style-type: none"> ○ Support family/whānau to participate in child's care 			
Clinical management	<ul style="list-style-type: none"> ○ Failure to discharge from PICU due to ward capacity ○ The patient continues on the pathway in PHDU and can bypass the IOA if post-op day one goals have been achieved 			Post-op day one goals achieved Yes / No

Post-Operative Day 2

Ward 23B

Date:

Goals:

- Discontinue telemetry after 24hrs of admission
- Liberalise oral fluids and commence diet as age appropriate
- Ensure adequate analgesia
- Mobilise

	Day 2 Post Op	AM	PM	Clinical/Care decisions
Interventions	<ul style="list-style-type: none"> Remove CVL Discontinue telemetry if patient meets the below criteria <ul style="list-style-type: none"> Alert Electrolytes within normal levels Sinus rhythm within the last 24 hours Child is clinically stable and progressing as expected Check diagnostic tests are completed for removal of pacing wires on day 3 post-op If sternotomy dressing is dry, remove dressing clean wound and apply glue Commence lactulose OD if BNO 			CVL removed day 2 post-op Yes / No Telemetry discontinued day 2 post-op Yes / No
Fluid management	<ul style="list-style-type: none"> Transition to oral diuretics twice daily or daily if <ul style="list-style-type: none"> Absorbing feeds No evidence of CHF Weight is tracking back towards pre-op weight No clinical signs of dehydration Daily weight Accurate fluid balance 			
Pain management	<ul style="list-style-type: none"> 6 hrly paracetamol 8 hrly ibuprofen unless contraindicated Oral Morphine PRN or tramadol PRN Ondansetron for nausea and vomiting 			Transitioned to oral PRN morphine/tramadol Yes / No
Mobilisation	<ul style="list-style-type: none"> Continue to mobilise into chair for meals Mobilise out of the room in the playroom/ corridor Refer to physiotherapy if child is unable to sit out of bed by day 2 post-op 			Mobilisation out of the room by day 2 post-op Yes / No
Nutrition	<ul style="list-style-type: none"> Free fluids and light diet as tolerated 			Achieved free fluids and light diet by day 2 post op Yes / No
Diagnostic tests	<ul style="list-style-type: none"> Check FBC, U & E's, and coagulation screen if having warfarin 			
Daily needs bundle of care	<ul style="list-style-type: none"> Bath/ shower/ teeth / hygiene needs Glamorgan bundle of care 			

Not for scanning into 3M. Please return to 23B Nurse Consultant

	Day 2 Post Op	AM	PM	Clinical/Care decisions
Clinical management	<p>Arrhythmias</p> <p>Recommended action</p> <ul style="list-style-type: none"> ○ Consult with Cardiologist ○ Delay pacing wire removal ○ Continue ECG monitoring ○ Check electrolytes <p>Oxygen requirement from day 3 post op</p> <p>Recommended action</p> <ul style="list-style-type: none"> ○ Clinical examination ○ Review last chest x-ray ○ Consider fluid overload <p>Temperature > 38.5°C > 48 hrs post op</p> <p>Recommended action</p> <ul style="list-style-type: none"> ○ Clinical examination ○ FBC and urine (blood cultures and chest x-ray not routinely required) 			

Post-Operative Day 3
Or discharge if child meets discharge criteria

Date:

	Day 3 Post Op	AM	PM	Clinical/Care decisions
Interventions	<ul style="list-style-type: none"> Remove pacing wires as per pacing wire guideline Monitor for 2 hours post pacing wire removal Remove dressings on drain sites if wounds are dry 			Pacing wires removed on day 3 post-op Yes / No
Fluid management	<ul style="list-style-type: none"> Continue with oral diuretics BD or daily Daily weight 			Transition to oral diuretics on 3 post-op Yes / No
Pain management	<ul style="list-style-type: none"> 6 hrly paracetamol PRN ibuprofen Oral Morphine PRN or tramadol PRN Ondansetron for nausea and vomiting 			
Mobilisation	<ul style="list-style-type: none"> Continue to mobilise out of bed for meals Encourage as much mobilisation as possible/support family to mobilise the child independently 			
Nutrition	<ul style="list-style-type: none"> Free fluids Encourage home diet 			
Diagnostic tests	<ul style="list-style-type: none"> Echocardiogram prior to discharge Consider repeating CXR if abnormalities are present on post-op CXR, consider PA and lateral x-rays 			
Infection surveillance	<ul style="list-style-type: none"> Pyrexia of < 38.5 within 48 hours can commonly be associated with a SIRS response Ensure patient is hydrated and manage with paracetamol 			
Daily needs bundle of care	<ul style="list-style-type: none"> Bath/shower/oral hygiene Glamorgan bundle of care 			
Discharge education	<ul style="list-style-type: none"> Commence 23B discharge check list Medication/wound care and suture removal education 			
Clinical management	<p>Arrhythmias Recommended action</p> <ul style="list-style-type: none"> Consult with Cardiologist Delay pacing wire removal Continue ECG monitoring Check electrolytes <p>Oxygen requirement from day 3 post op Recommended action</p> <ul style="list-style-type: none"> Clinical examination Review last chest x-ray Consider fluid overload 			

Not for scanning into 3M. Please return to 23B Nurse Consultant

Patient label

	Day 3 Post Op	AM	PM	Clinical/Care decisions
	Oxygen requirement from day 3 post op Recommended action <ul style="list-style-type: none"> ○ Clinical examination ○ Review last chest x-ray ○ Consider fluid overload Temperature > 38.5°C < 48 hrs post op Recommended action <ul style="list-style-type: none"> ○ Clinical examination FBC and urine (blood cultures and chest x-ray not routinely required)			

Post-Operative Day 4 – Discharge

Date:

Goals:

- Family/whānau is confident how to care for the child on discharge
- Child meets the discharge criteria
- Discharge referrals completed
- Family/whānau aware of discharge plan

Discharge criteria	<ul style="list-style-type: none"> ○ Ward 23b discharge check list completed ○ Review medication prior to discharge ○ Wound review and removal of sutures by the GP on day 7-10 post op ○ If the wound has interrupted sutures, removal of sutures is organised by the surgical team at 14 days 	Discharged by day 4 post-op Yes / No
Discharge referrals	<ul style="list-style-type: none"> ○ Home care nursing referral if required ○ Routine check by GP within the first week of discharge 	

Post Discharge Management

Post Discharge	Refer to SMO follow up guidelines
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