

Clinical Facility fitness for Purpose

HAWKES BAY DISTRICT HEALTH BOARD

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1 Introduction

1.1 Aim of this Paper

The aim of this paper is to provide your DHB high-level feedback relating to each of the clinical units that underwent a Clinical Facility Fitness for Purpose (CFFFP) Assessment.

1.2 NAMP Background and Context

The Minister of Health has asked the Capital Investment Committee (CIC) to develop a National Health Asset Management Plan (NAMP) in response to capital expenditure intentions signalled by the DHB's for the next ten years, to a total of \$14.2 billion (of which \$9.2 billion would be Crown funded). The NAMP will provide a tool supported by the Ministry of Health and Treasury, so they can prioritise the investment of the Health Capital Envelope (HCE) funds at a national level.

Each DHB owns their assets and is accountable for the maintenance, remediation, replacement and growth of these assets to a fit for purpose standard. The current model has the management for health assets to each DHB with no mandate for the Ministry to hold a national view on standardised policy and procedures for health building and infrastructure, and therefore no ability for the ministry to be consistent in measuring performance of business case benefit across the health asset portfolio.

1.3 The NAMP Project

The NAMP project has been tasked with setting up a national framework that outlines the condition of health assets across the DHB's, which the ministry can then use as a tool to assist with their prioritisation of capital spending on health infrastructure.

The NAMP project has been set up with six streams of work as follows;

- Feasibility report
- Building & infrastructure
- Clinical facility fit for purpose
- Demand & capacity
- Ancillary assets
- Establish asset portfolio
- Clinical Facility Fit-for-Purpose Workstream

When the outputs of these workstreams are combined, the Ministry will be able to provide a pipeline for proposed capital expenditure based on several investment scenarios.

1.4 Clinical Facility Fit-for-Purpose Workstream

The aim of the CFFFP workstream was to assess physical aspects of key clinical areas/departments within 'critical infrastructure' at each DHB, to determine whether their environments were 'safe for patients and staff'.

Critical infrastructure at each DHB was determined using a criticality matrix. The MoH worked with each DHB and applied the matrix across all buildings on each DHB campus. The first wave of assessments by the MoH Building & Infrastructure team, involved only buildings that housed critical services and were over 20 years old. Critical services may be non-clinical e.g. plant or clinical.

Sometimes a key clinical service e.g. Intensive Care Units or Emergency Departments made a building critical.

The following five clinical areas on the emergency patient pathway were included in the assessment if they were accommodated in critical infrastructure over 20 years old;

- Emergency department (ED)
- Operating Theatre suite (OT)
- Intensive Care units (ICU)
- Typical Inpatient Units (IPU)

And

- Adult Mental Health (MH) inpatient units in buildings over 10 years old (excluding forensic).

As we were only looking at older facilities across the country, we completed a CFFFP Assessment on one control unit for each clinical facility – ED, ICU, OT, IPU & MHIPU. This was done to provide context for our assessments.

1.5 The CFFFP Assessment Tool

The assessment tool questionnaire was based on key international evidence-based design principles specific to the health sector that promote safe design for patients and staff. These principles were ratified by the NAMP Clinical Reference Group which was set up to oversee the CFFFP workstream.

The following table outlines these principles.

Principle	Safety Design Principles
#1	Provide appropriate external functional relationships to promote safe clinical care (i.e. the proximity of key health planning units outside the department being assessed)
#2	Provide appropriate internal functional relationships (e.g. do key space co-locations within a department support safe care delivery?)
#3	Improve access
#4	Provide appropriate and adequately sized space/s / layout for safe care delivery (e.g. what is the function of the room and is it adequately sized – based on AHFG ¹ room sizes)
#5	Enhance communication/interaction between staff and patient (e.g. observation of patients in beds from staff stations and vice versa)
#6	Enhance privacy (e.g. audible, visual)
#7	Reduce patient infection risk (e.g. numbers of hand wash basins, isolation rooms etc.)
#8	Reduce medication errors
#9	Enhance security (patient, staff, facility) (e.g. can a department be locked down, after-hours access, position of security guards etc.)

¹ Australasian Health Facility Guidelines

Most of the principles had more than one question. The number of questions under each principle depended on the department being assessed.

1.6 The CFFFP Assessments

- The CFFFP Assessments followed a standard format.
- In each clinical unit we met with key clinical personnel who knew how the unit functioned. Almost always the nurse in charge was one of them, as they have a comprehensive overview of how the unit functioned.
- Each meeting was booked for 2 hours.
- The first part of the meeting involved a sit-down discussion. We explained the process, then the DHB staff gave a high-level overview of the model of care (MoC) of the unit.
- We reviewed and marked-up the floor plans in order to understand how the space was utilised.
- Key architectural metrics were recorded, e.g. how many bedrooms, how many bathrooms etc.
- Responses to the nine design principle questions were then recorded.
- The data was captured in a standard template and entered into a tablet in a data base called Survey123. Hard copy was also used as a backup.
- Following the discussion, we had a walk around the unit and took photographs of things of interest or to demonstrate issues that may have been raised in the discussion.

1.7 Information provided to DHB's in this report

1.7.1 Clinical Facilities visited in your DHB

This section lists the clinical facilities and dates the CFFFP Assessment/s took place in your DHB.

1.7.2 Gross Floor Area

In each clinical facility visited we measured its gross floor area (GFA). This section provides information of the space (m²) allocated to the main unit of measurement in each unit, (beds in inpatient units, operating rooms in OT suites) as a ratio of the GFA.

We have benchmarked your space allocation to a benchmark derived from the Australasian Health Facility Guidelines (AHFG) for each clinical facility, e.g. AHFG benchmark of 36m²/bed in an inpatient unit.

1.7.3 Total score of the CFFFP Assessment

The CFFFP Assessment template is based on nine design principles. Some of these principles had more than one question. These questions were modified slightly to match the clinical facility being assessed, which means the total score for each type of clinical facility may vary. Each question has been allocated a score of 1 to 5 with 1 being the optimal score, and 5 the least optimal, so the lower the score the more optimal the clinical facility being assessed. No weighting has been applied the principles.

This section provides you with the score of your clinical facility.

1.7.4 Supporting notes from CFFFP Assessment visit

Notes taken during the CFFFP Assessment visit are provided. These notes capture the discussion from the visit. They support the key architectural metrics and the design principle questionnaire.

2 District Health Board – Hawkes Bay

2.1 Clinical facilities assessed in your DHB

Hawkes Bay DHB was used as a pilot DHB for the CFFFP Assessments.

The following facilities were assessed in your DHB:

DHB	Campus/Hospital	Clinical Unit	Date
Hawkes Bay	Hawkes Bay Hospital	Inpatient unit – Ward B2 - medical	18/19 February 2019
		Inpatient unit – Ward A - surgical	
		Operating theatre suite	
		Emergency department	
		Intensive care unit	

3 Findings per Clinical Facility

3.1 Hawkes Bay Hospital – Inpatient Unit – Ward B2

3.1.1 Gross Floor Area

The AHFG recommend IPU units are planned at approximately 36m²/bed. Ward B2 is approximately 28m²/bed which is 78% of the benchmark size.

3.1.2 Total score of the CFFFP Assessment

The CFFFP assessment included nine principles most of which had multiple questions. The total score possible for an IPU was 190. Ward M2 scored a total of 120/190.

Campus	Unit	Principle # 1 Appropriate external functional relationships	Principle # 2 Appropriate internal functional relationships	Principle # 3 Access	Principle # 4 Adequately sized / shape / layout key clinical spaces	Principle # 5 Enhance communication between staff and patients	Principle # 6 Enhance privacy	Principle # 7 Reduce patient infections	Principle # 8 Reduce medication errors	Principle # 9 Enhance staff & patient safety	Principle Total
Hawkes Bay	Medical IPU - Blk B	12	14	3	16	13	3	23	12	24	120
Total Possible Score		15	20	5	30	15	5	35	20	45	190

3.1.3 Supporting notes from CFFFP Assessment

Ward B2 is a medical ward with 27 beds (+ 1 un-resourced bed).

The bedroom configuration is; 6 x single bedrooms (4 of which are negative pressure), 3 x 4 bed bedrooms, 3 x 3 bed bedrooms (1 of which is bariatric). 1 x un-resourced bed is set-up in a former staff room which has no hand wash basin or medical services (oxygen, suction) and is frequently used for overflow patients. All single bedrooms and three bed bedrooms have dedicated ensuites, the rest share bathroom facilities which are located in the central core.

Ward B2 is configured as a racecourse ward with a layout that does not suit the model of care.

All bed spaces undersized (to AHFG).

The negative pressure room configuration is not compliant with AHFG, which recommends a negative pressure bedroom should have its own ensuite and ante-room. The unit has two, two-bedroom negative pressure pods (total 4 beds). In this configuration each set of two rooms shares a lobby which provides direct access into each bedroom and the airlock/ante-room which is positioned between the bedrooms. Each bedroom has a dedicated ensuite. If an infectious patient

who requires negative pressure is admitted, the shared ante room precludes the use of the other bedroom in the pod. This is problematic in a ward which has demand and capacity issues.

The bariatric three bed bedroom has a dedicated internal ensuite, which is a converted former bed space. Access into the ensuite is difficult due to the angles of the walls.

There are significant issues with the heating/cooling/ventilation systems

There is a lack of storage space.

Remodel of existing spaces to meet AHFG standards within existing footprint would not be possible.

3.2 Hawkes Bay Hospital – Inpatient Unit – Ward A3

3.2.1 Gross Floor Area

The AHFG recommend IPU units are planned at approximately 36m²/bed. Ward A3 is approximately 18m²/bed which is 50% of the benchmark size.

3.2.2 Total score of the CFFFP Assessment

The CFFFP assessment included nine principles most of which had multiple questions. The total score possible for an IPU was 190. Ward A3 scored a total of 118/190.

Campus	Unit	Principle # 1 Appropriate external functional relationships	Principle # 2 Appropriate internal functional relationships	Principle # 3 Access	Principle # 4 Adequately sized / shape / layout key clinical spaces	Principle # 5 Enhance communication between staff and patients	Principle # 6 Enhance privacy	Principle # 7 Reduce patient infections	Principle # 8 Reduce medication errors	Principle # 9 Enhance staff & patient safety	Principle Total
Hawkes Bay	Surgical IPU - Blk A	12	18	1	18	13	3	27	4	22	118
	Total Possible Score	15	20	5	30	15	5	35	20	45	190

3.2.3 Supporting notes from CFFFP Assessment

Ward A3 is a surgical ward. It has 26 beds (+ 3 un-resourced) and often runs at 29 beds due to demand. The three un-resourced beds are set up in the patient lounge (2) which has no medical services (oxygen/vacuum) nor hand wash basin and a clinic room (1) which does have medical services (oxygen, vacuum) and a hand wash basin.

It has a single corridor configuration.

The bedroom configuration is; 4 x 3 bed bedrooms (with dedicated internal ensuite created in former bed space), 2 x 4 bed bedrooms with shared bathroom facilities across the corridor, 6 x single bedrooms; 2 with full ensuites, the other 4 with either showers or WC's that they share.

All bedroom spaces are undersized to AHFG.

Their model of care requires a higher ratio of single bedrooms.

There are significant issues with heating/cooling/ventilation systems and there is poor clinical lighting the bedrooms.

The layout is poor and there is a serious lack of storage and clinical support spaces.

Remodel of existing spaces to meet AHFG standards within existing footprint would not be possible.

3.3 Hawkes Bay Hospital - Operating Theatre

3.3.1 Gross Floor Area

The AHFG recommend OT units are planned at approximately 280m²/OR. Hawkes Bay Hospital OT Suite (Kempthorne & Meade Clinical Centre) is approximately 276m²/OR which is 99% of the recommended size.

3.3.2 Total score of the CFFFP Assessment

The CFFFP assessment included nine principles most of which had multiple questions. The total score possible for an OT suite was 220. The Hawkes Bay Hospital OT suite scored a total of 96/220.

Campus	Unit	Principle # 1 Appropriate external functional relationships	Principle # 2 Appropriate internal functional relationships	Principle # 3 Access	Principle # 4 Adequately sized / shape / layout key clinical spaces	Principle # 5 Enhance communication between staff and patients	Principle # 6 Enhance privacy	Principle # 7 Reduce patient infections	Principle # 8 Reduce medication errors	Principle # 9 Enhance staff & patient safety	Principle Total
Hawkes Bay	OT's	10	10	1	26	9	3	16	10	11	96
	Total Possible Score	20	25	5	50	15	5	40	20	40	220

3.3.3 Supporting notes from CFFFP Assessment visit

There are 7 OR's and 1 procedure room in the OT suite.

Demand exceeds capacity and staff felt they required 3 more OR's and associated pre/post-operative spaces to meet demand.

The layout is reasonable and supports the model of care, however, there is no dedicated space to support a paediatric flow through the suite.

DOSA and day cases arrive at a dedicated pre-operative area which doubles as third stage recovery. Acute and caesarean sections and emergency surgery arrives at a separate entry which has a 2 bay waiting space. OT suite waste and acute patient flows cross through the same entry/exit point.

Overall the unit lacks clinical support space for staff and storage spaces, especially for large items of equipment such as image intensifiers. Biomedical engineers provide a hospital wide service and are based outside the unit.

CSSD is in one corner of the OT suite.

3.4 Hawkes Bay Hospital – Emergency Department

3.4.1 Gross Floor Area

The AHFG recommend emergency departments are planned at approximately 50m²/bed. Hawkes Bay Hospital ED is approximately 43m²/bed which is 86% of the recommended size.

3.4.2 Total score of the CFFFP Assessment

The CFFFP assessment included nine principles most of which had multiple questions. The total score possible for an ED was 195. Hawkes Bay Hospital ED scored a total of 120/195.

Campus	Unit	Principle # 1 Appropriate external functional relationships	Principle # 2 Appropriate internal functional relationships	Principle # 3 Access	Principle # 4 Adequately sized / shape / layout key clinical spaces	Principle # 5 Enhance communication between staff and patients	Principle # 6 Enhance privacy	Principle # 7 Reduce patient infections	Principle # 8 Reduce medication errors	Principle # 9 Enhance staff & patient safety	Principle Total
Hawkes Bay	ED	9	9	3	19	9	5	29	15	22	120
Total Possible Score		20	25	5	35	15	5	35	20	35	195

3.4.3 Supporting notes from CFFFP Assessment

While the ED has good external functional relationships it still has significant issues.

The layout of the unit is piecemeal and does not support desired flows for the model of care.

All patient spaces too small (to AHFG).

Demand exceeds capacity and there is a significant shortfall of patient bay & resuscitation spaces for the demand. The current patient bay configuration has 30 patient spaces and has;

- 6 x triage/fast-track,
- 10 x spaces in cubicles area,
- 3 x resuscitation bays,
- 6 x assessment area (ballroom),
- 4 x observation area and
- 1 x isolation room.

The current assessment/resuscitation/cubicle area has a total of 19 patient bays which staff believe is a shortfall of approximately 30% - if the FACEM² guidelines were applied at a ratio of 1 bay: 15000 presentations, 30 would be needed for the current workload. The current demand in the observation area would support an additional two bays.

The ED is missing some key clinical spaces such as dedicated eye/ENT room, dental room, plaster room. There are no designated mental health interview rooms and the room that is used for mental health assessments doubles as a whanau room for relatives of sick patients. It only has one door which does not meet the AHFG for mental health assessment (should be two doors to ensure staff have an exit).

The waiting room is overlooked by triage and reception. Patients lie on trolleys in this space. A staff meeting room that opens directly into the waiting room is used as the eye room.

The ambulance bay (3 bays) opens directly into the resuscitation area.

The ED lacks key clinical support spaces, including staff facilities and storage spaces.

There is a serious lack of storage throughout the unit.

Patient observation from staff bases is compromised.

A remodel within existing footprint to meet AHFG standards would not be possible.

² Faculty Australasian College of Emergency Medicine

3.5 Hawkes Bay Hospital – Intensive Care Unit

3.5.1 Gross Floor Area

The AHFG recommend ICU units are planned at approximately 70m²/bed. Hawkes Bay Hospital ICU is approximately 43m²/bed which is 86% of the recommended size.

3.5.2 Total score of the CFFFP Assessment

The CFFFP assessment included nine principles most of which had multiple questions. The total score possible for an ICU was 185. The Hawkes Bay Hospital ICU/HDU scored a total of 133/185.

Campus	Unit	Principle # 1 Appropriate external functional relationships	Principle # 2 Appropriate internal functional relationships	Principle # 3 Access	Principle # 4 Adequately sized / shape / layout key clinical spaces	Principle # 5 Enhance communication between staff and patients	Principle # 6 Enhance privacy	Principle # 7 Reduce patient infections	Principle # 8 Reduce medication errors	Principle # 9 Enhance staff & patient safety	Principle Total
Hawkes Bay	ICU	12	11	3	20	9	3	29	20	26	133
	Total Possible Score	15	20	5	25	15	5	35	20	45	185

3.5.3 Supporting notes from CFFFP Assessment

The ICU operates a n ICU/HDU model.

The unit has;

- 4 x HDU bed bays,
- 1 x isolation/paediatric room, (positioned between HDU and ICU beds and used as a flex space,
- 6 x ICU bed bays which includes 1 x enclosed room for negative pressure patients (with anteroom and ensuite).

The unit is funded for 5 x ICU and 6 x HDU beds and demand exceeds capacity.

The beds are placed in a horseshoe configuration around a central staff base and clinical support areas. Staff support space and the main waiting room for visitors are on the other side of the main entry corridor.

The main entry is a single point of entry to the unit so is used for all patient, staff, visitor, service and waste removal flows. The exception being deceased patients who are taken out the fire exit between ICU beds 4 & 5.

The unit has good external functional relationships; ED, OT, radiology.

There are significant issues in the unit;

- The unit is cramped
- Serious lack of storage – cluttered corridors and bays
- The medications space is open,
- Infection control issues; storage, poor surfaces walls/ceilings/floors, poor maintenance
- Dirty utility used for storage of rubbish and dirty linen
- All patient bed spaces are all smaller than AHFG except ICU 6 and the isolation/paediatric room
- Ceiling mounted bollards in ICU beds remain in the same position as they cannot be manoeuvred easily (maintenance issue).
- Lack of staff support space; meeting rooms, offices, change rooms etc.

- Lack of family support space; whanau, interview rooms etc.
- Circulation space within the unit is tight as corridors are narrow,
- Procedure lighting is poor in the patient bays

Remodel within existing footprint to meet AHFG standards would not be possible.