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Models of care in Forensic Psychiatry

Royal College of Psychiatrists Faculty of Forensic Psychiatry

Liverpool, 04 March 2020

Professor Harry Kennedy

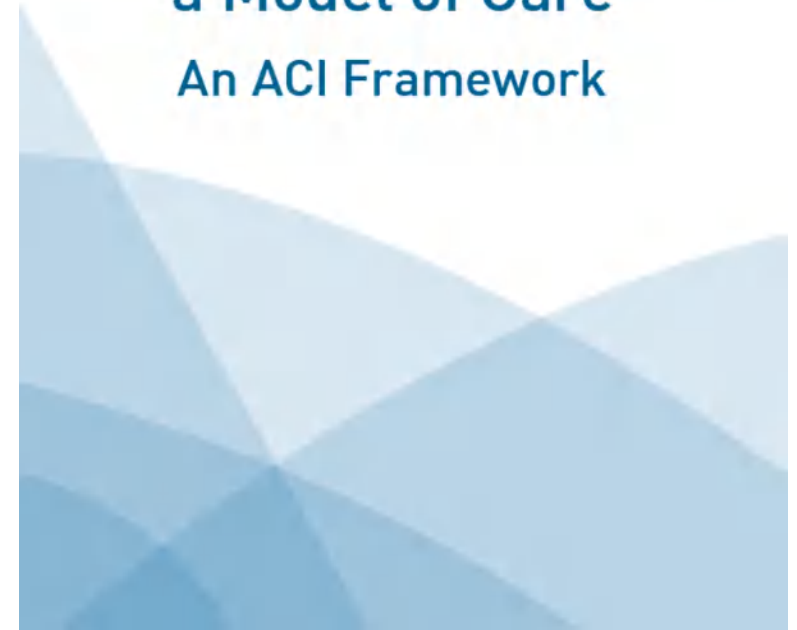
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Models of Care: definition



- **A “Model of Care” broadly defines the way health services are delivered. It outlines best practice care and services**
- for a person, population group or patient cohort as they progress through the stages of a condition, injury or event.
- It aims to ensure people get the right care, at the right time, by the right team and in the right place
- Often includes a ‘logic model’ relating inputs (resources) to ‘outputs’ (health gains)

**Understanding
the process to develop
a Model of Care**
An ACI Framework



Model of Care

- 13,000 words
- Plain Language
- To be read by all staff e.g. during induction
- All policies, procedures and guidelines must be compatible
- All parts of the system are inter-dependent
- “If you can’t measure it, you can’t see it or it doesn’t exist” Chris Webster

- Not a brochure for patients or their families
- Not a contract document

National Forensic Mental Health Services Model of Care



November 2019



Model of Care: why?

Typically prompted by

- architects who need a design brief (who try to improve it!)
- Software engineers (who try to write it!)
- Commissioners (cost efficient & clinically effective)
- Policy makers

- Custom and practice
- Mission drift
- ‘Good Ideas’ are never enough

Model of Care

1. Goals not Principles
2. Pathways and processes
3. Treatments
4. Evaluation and logic models

Models of care in forensic psychiatry

Harry G. Kennedy 

ARTICLE

SUMMARY

Forensic psychiatry services have grown and become more complex in structures, processes and pathways. Legacy customs, practices and changing policy are now organised into formal models of care. These are written accounts of how a health service is delivered, outlining best practice and services for patients progressing through the stages of their condition and the care and treatment available. This article explores the four key elements of a model of care: goals; pathways and processes; treatment programmes; and systematic evaluation. It describes the most common model of care in forensic services, which builds on structures of stratified therapeutic security. It also considers variations on this basic or standard model matched to needs arising from the complex interrelationship with other parts of the mental health service for the population served and with criminal justice, primary care and physical health, housing and welfare agencies.

LEARNING OBJECTIVES

After reading this article you will be able to:

- understand what a model of care is and how it contributes to the running of a forensic mental health service
- participate in the design and drafting of a model of care for a forensic psychiatry service
- evaluate a service and compare service models.

KEYWORDS

Forensic psychiatry; clinical science; mental health; psychiatric services; relational therapeutic security.

A model of care is a document that is intended to be used by all new staff joining a healthcare service. The model of care bears the same relationship to policies and operational procedures that a constitution bears to laws and statutory instruments. Forensic mental health services are designed to deliver effective care and treatment for people with severe mental disorders who for a time are a danger to others. Dangerousness arises from concern about a combination of risk (probability) and seriousness of harm. Forensic patients have a right to equal access to treatment even during periods when delivery of that treatment requires a therapeutically safe and

secure setting. Forensic mental health services for mentally disordered offenders and those like them are distinguished from other mental health services by a dual mandate to act in the best interests of the patient and in the public interest. This often involves providing care and treatment in conditions of therapeutic security, so that patients and clinicians are safe while treatment is provided. Forensic mental health services are integral parts of the larger mental health services for the population they serve, part of an interdependent system (Gosm 1977; O'Grady 1998). Any change in the delivery of care in one part of the overall mental health service will have effects on all the other parts (Kennedy 2002; O'Reilly 2010b). Large systems change and re-equilibrate slowly. A whole systems approach is always necessary when understanding the working of a model of care. Changes in mental health and criminal justice policy can also be expected to have large effects on services.

A model of care is not the same thing as a nursing model (actually a nursing process) or the medical model (actually conceptual, scientific and heuristic approaches to diagnosis, causation and treatment with closer resemblance to a culture of expertise). The modern idea of a model of care owes much to ideas taken from systems theory, including the interdependence of parts, the mathematical modelling of stable states in closed systems that include servo-feedback loops and the complications of open and unstable systems (Von Bertalanffy 1969).

A model of care broadly defines the way health services are delivered. It outlines best practice and services for a person, population group or patient cohort as they progress through the stages of the condition, injury or event. It aims to ensure that people get the right care, at the right time, by the right team and in the right place. A model of care often includes a logic model relating inputs (resources and time) to outputs (health gains). This definition is derived from the New South Wales Agency for Clinical Innovation (Agency for Clinical Innovation 2015). A model of care should be written in plain English. However, it is not the same as a prospectus for patients or their families. Nor is it a contracting document. A model of care should be designed to last without major modification for about 5 years so that it can be evaluated

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1. Goals

Principles are usually a collection of platitudes and pieties

Competing principles are either not listed or not resolved

Goals should be achievable and measurable

2. Processes and Pathways



Clinical processes can be shown to be universal.

TRIAGE
LEAVE
TRANSFER
DISCHARGE



Active Management of Length of Stay



Structured professional judgement and governance to ensure clinical decision making transparent and reliable

Legal processes facilitate clinical processes (medical necessity).

2. Processes and Pathways

Advances in Psychiatric Treatment (2002), vol. 8, pp. 433-443

Therapeutic security

PHYSICAL

RELATIONAL

QUALITATIVE AND
QUANTITATIVE

PROCEDURAL

SPECIALIST MANAGEMENT

Stratified from high to medium to low to
community supports

Stratified from acute, sub-acute to medium
term and slow-stream / long term

Therapeutic uses of security: mapping forensic mental health services by stratifying risk

H. G. Kennedy

The syllabus for higher training in forensic psychiatry requires knowledge of the therapeutic uses of security, although there are no references to this in standard texts. Similarly, the process of mapping a mental health service is an essential first step in planning, audit and needs assessment. All mental health services, not just forensic services, are organised to stratify patients according to the risk they present so that they can be cared for in an environment that is safe but imposes the minimum necessary restrictions and intrusions. Forensic mental health services differ from other mental health services mainly by including subsystems which are at higher levels of security than those necessary in local services. Although they have a general orientation towards risk awareness and risk management, they remain integral parts of the mental health services for the populations they serve.

A history of the evolution of secure psychiatric services in the UK is given in the Butler report (Home Office & Department of Health and Social Services, 1975). An international perspective can be found in Bluglass & Bowden (1990). Definitions of secure services often rely on descriptions of services currently available, so that a given level of security is defined, by default, as that which falls between adjacent levels. Attempts are being made to define and validate the characteristics of groups of patients that may require elements of security as part of their care (Cohen & Eastman, 2000), but this is difficult to achieve without relying on current practice for validation in a circular way. Secure settings are found in general and forensic mental health services and in the independent sector. There is a wide variation between services, e.g. in the level of physical security

in medium secure units. Published needs assessments all illustrate a considerable degree of inappropriate placement within the overall system, partly reflecting delays in transfer and partly due to the varied pattern of provision across the country.

Principles

The Butler (Home Office & Department of Health and Social Services, 1975) and Reed (1992) reports set out principles which are widely acknowledged as the basis for secure psychiatric services. More recently, the King's Fund report, *London's Mental Health* (Johnson *et al.*, 1997), contains much to guide the mapping of mental health services in urban settings. A current approach to mapping any mental health service would emphasise the importance of a whole-system approach, with cooperation between agencies ensuring that service boundaries do not operate as barriers to the movement of individuals across levels of security, according to their needs.

Continuity of responsibility is as important as continuity of care and it ensures the safe transition of individuals between levels of security. Services can best be organised so that multi-disciplinary teams have responsibilities across adjacent levels of security, within a given facility or across services.

Facilities should provide individuals with an environment that is least restrictive, safest, homely and local. Decreasing reliance on distant providers should therefore be a priority for service development. The sharing of information between agencies

Harry Kennedy is consultant forensic psychiatrist at the Central Mental Hospital, Dundrum (Dublin 14, Ireland). His research interests include the epidemiology of homicide and suicide as related to deprivation and urbanisation, the organisation of forensic mental health services and the psychopathology of anger.

3. Treatment

Multi-modal treatment to prevent violence(physical, mental, substance misuse, offending behaviours, ADL, education occupation and creativity, family)

Tiered treatments

Quality standards

- 25 hours / patient / per week
- 5 hours of core treatments at higher tiers / patient / per week
- 17.5 to 25 WTE tier 3-4 therapists for 100 patients (Not MDT members)

Logic model – in-puts and outcomes

4. Evaluation

Four Recoveries

PERSONAL RECOVERY (WARD ATMOSPHERE, SATISFACTION, CO-PRODUCTION)

SYMPTOMATIC RECOVERY (PANSS, REMISSION RATES, violence / restrictive practices)

FUNCTIONAL RECOVERY (GAF, SOFAS, MCCB neurocognition & social cognition)

FORENSIC RECOVERY (LEAVE, TRANSFER, CAPACITY, CONDITIONAL DISCHARGE)

Population KPIs

sustainable admission and discharge rates over five years (length of stay)

admissions / 100,000 / year, discharges / 100 beds / year

Violence and restrictive practices / 100 admissions and / 100 beds

1. Goals

GOALS

- Rights and recovery as defined in legal standards
- Zero target for violence by patients against patients and others
- Prioritisation of effective treatments over any other activity
- Active management of length of stay
- Population-based levels of service that are sustainable

GOALS (Falk)

- (a) sufficient physical security appropriate to the patients;
- (b) high staff : patient ratios; and
- (c) a therapeutic policy that encompasses individual programmes

2. Pathways and Processes

Clinical Processes

- Clinical processes occur along all forensic pathways, including triage, leave, transfer to less secure places, trial leave, conditional discharge and absolute discharge.
- Active management of length of stay through admission panels and further 'gating' panels for decisions regarding milestones of progress.
- Structured professional judgement and judgement-support frameworks for making governance decisions regarding clinical processes.
- Legal processes to facilitate goals through clinical processes, including medical necessity, and dual mandate.

Pathways: Mapping

- Population: 500,000; 5m; 20m;
- Presentations: rates / 100,000 /year
- Human resources: staff to patient ratios; skills mix
- Estate:
- Processes: legal; clinical; triage / admissions panels etc.

Processes: Triage

The right person in the right place at the right time

- Risk X Seriousness

Stratified Therapeutic Security

- Environmental or physical
- Relational – quantitative and qualitative
- Procedural
- Management and governance
- Each element is stratified from high secure and intensive care, to medium secure, to low secure, to community supports (also stratified).
- The elements are also stratified from acute to subacute, and medium term to slow stream or long term.

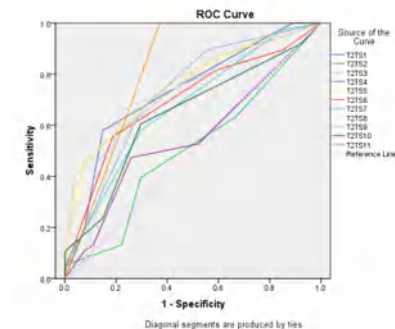
EXACT AGREEMENT BETWEEN ITEMS AND DISPOSALS

	Observed proportion in Agreement (n=316) ^a	95% CI of observed proportion in agreement	Spearman rank correlation coefficient ^b
TS1: serious violence	0.75	0.70 – 0.80	0.803
TS2: serious self harm	0.61	0.56 – 0.67	0.259
TS3: immediacy of violence risk	0.75	0.70 – 0.80	0.879
TS4: immediacy of self harm risk	0.67	0.62 – 0.73	0.236
TS5: specialist forensic need	0.78	0.74 – 0.83	0.908
TS6: absconding risk	0.80	0.76 – 0.85	0.879
TS7: preventing access	0.78	0.74 – 0.83	0.831
TS8: victim sensitivities	0.80	0.76 – 0.85	0.806
TS9: complex risks	0.72	0.67 – 0.77	0.828
TS10: institutional behaviour	0.71	0.66 – 0.76	0.758
TS11: legal procedure	0.92	0.90 – 0.95	0.921

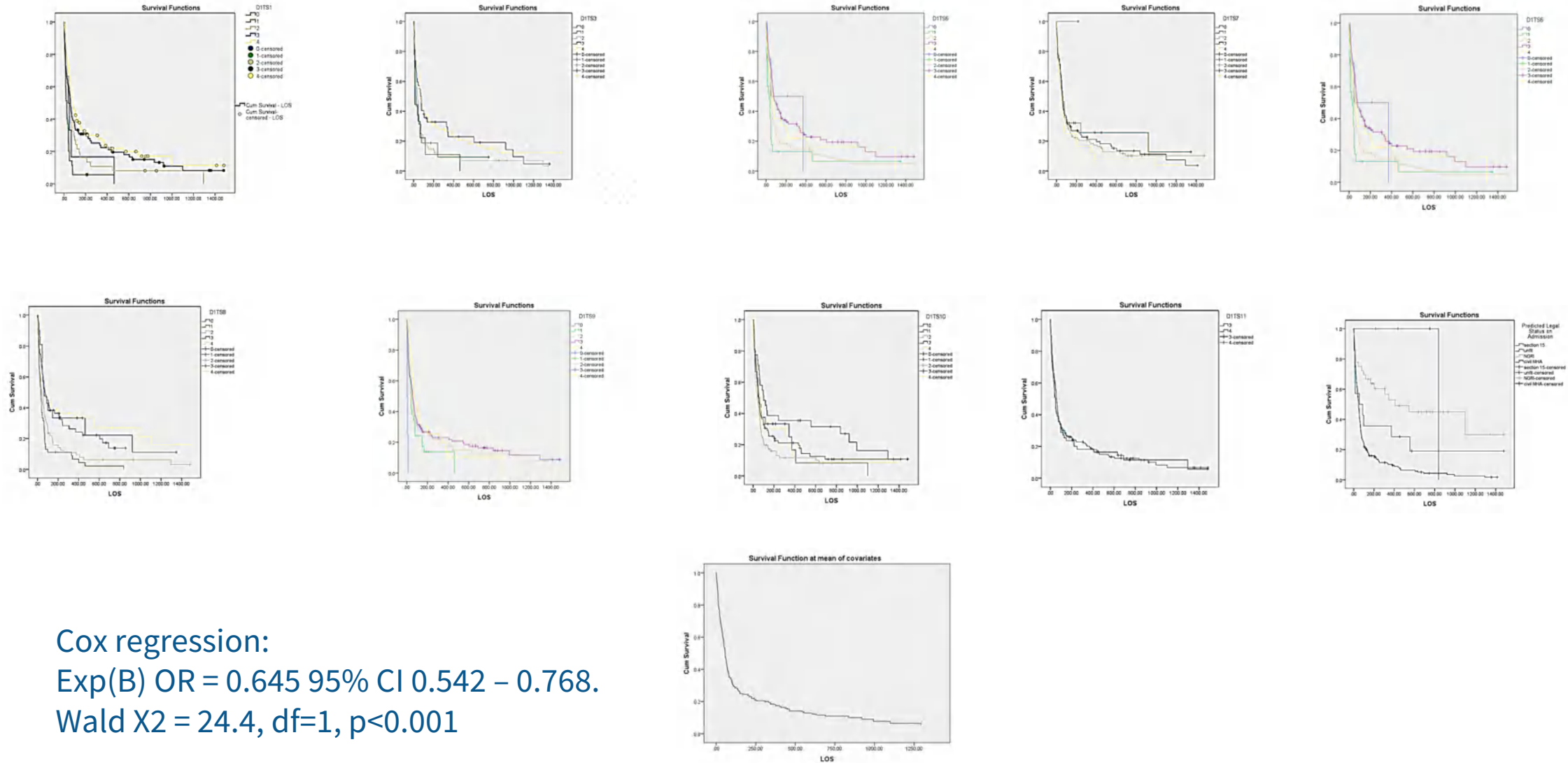
D-1 triage security: item to outcome

	nil v any adm AUC	open v PICU AUC	PICU v MSU AUC
1. Seriousness of violence	0.915	0.722	0.644
2. Seriousness of self-harm	0.515ns	0.568ns	0.601ns
3. Immediacy of risk of violence	0.961	0.693	0.644
4. Immediacy of risk of suicide/ self harm	0.546ns	0.573ns	0.609ns
5. Specialist forensic need	0.973	0.786	0.695
6. Absconding / eloping	0.930	0.860	0.726
7. Preventing access	0.905	0.825	0.670
8. Victim sensitivity/public confidence	0.806	0.775	0.690
9. Complex risk of violence	0.767	0.762	0.596
10. Institutional behaviour	0.907	0.698	0.599
11. Legal process	0.945	0.927	0.969

Inter-rater reliability $k > 0.87$ for each item
 Spearman $r = 0.959$ for total score
 Cronbach's alpha = 0.949



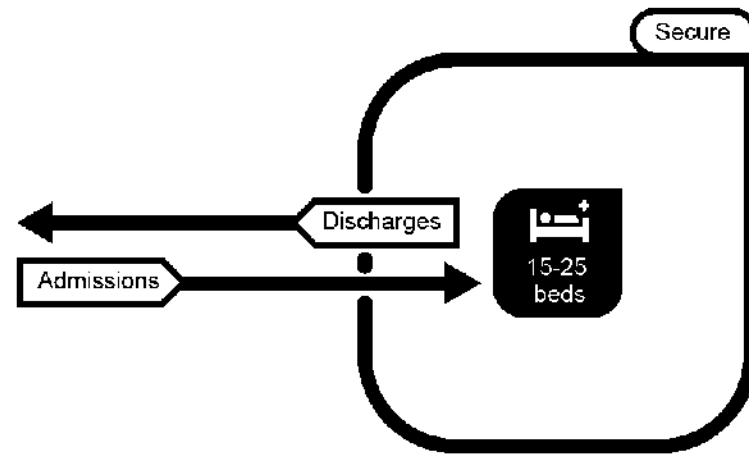
Kaplan Meyer survival curve



Cox regression:
 $\text{Exp}(B)$ OR = 0.645 95% CI 0.542 – 0.768.
 Wald $\chi^2 = 24.4$, $df=1$, $p<0.001$

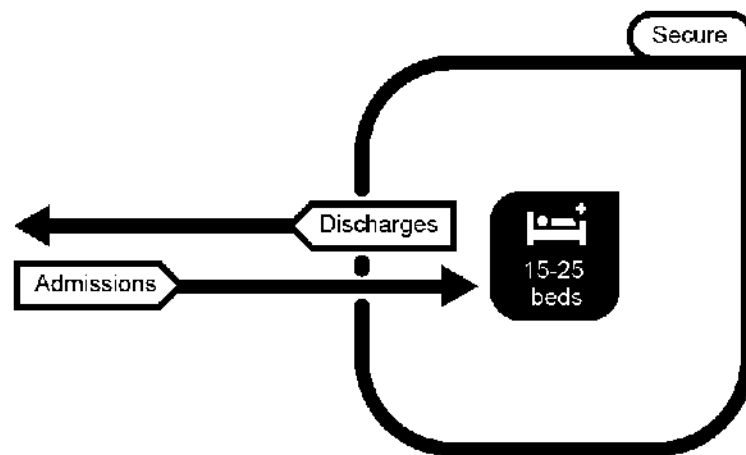
Pathways

Model A1
15 - 25 B2eds ?



	Triage / proportionate	consistent	Transparent	Safe	Clinical needs based	Population based
Model A	no	No	No	No	no	no

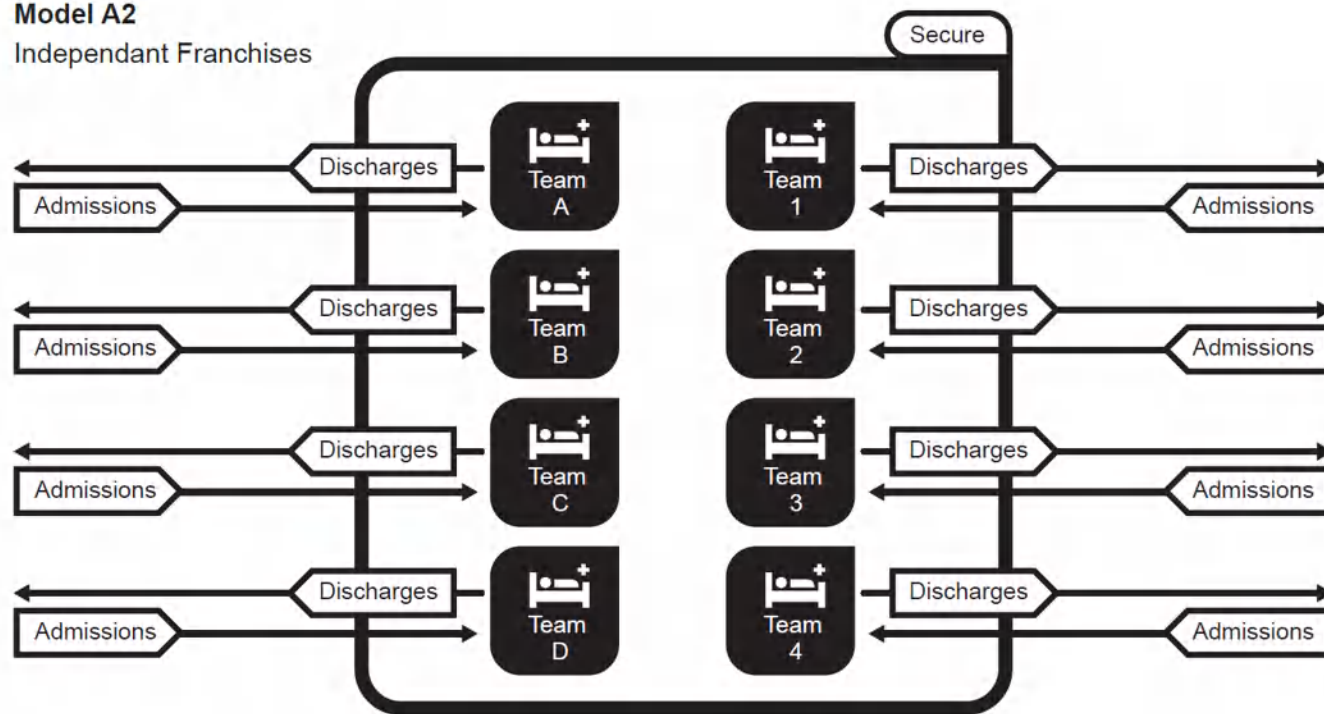
Model A1
15 - 25 B2eds ?



Works for small populations and small units
 Mixes acute, sub-acute and pre-discharge
 Mixes high, medium and low secure
 Mixes male and female, mental illness, intellectual and developmental disabilities....
 Lacks critical mass for niche / specialist treatments..

	Triage / proportionate	consistent	Transparent	Safe	Clinical needs based	Population based
Model A	no	No	No	No	no	no

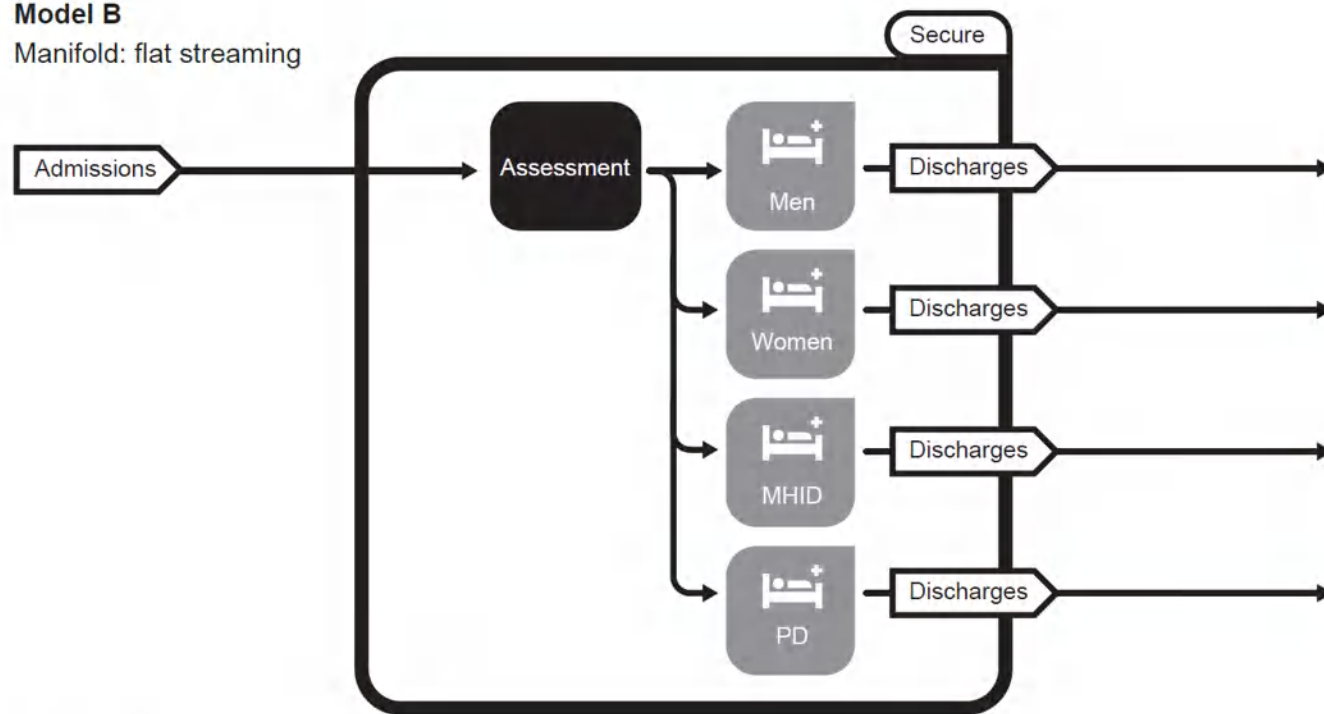
Model A2
Independent Franchises



Limitless numbers of beds

	Triage / proportionate	consistent	Transparent	Safe	Clinical needs based	Population based
Model A	No	No	No	No	No	No

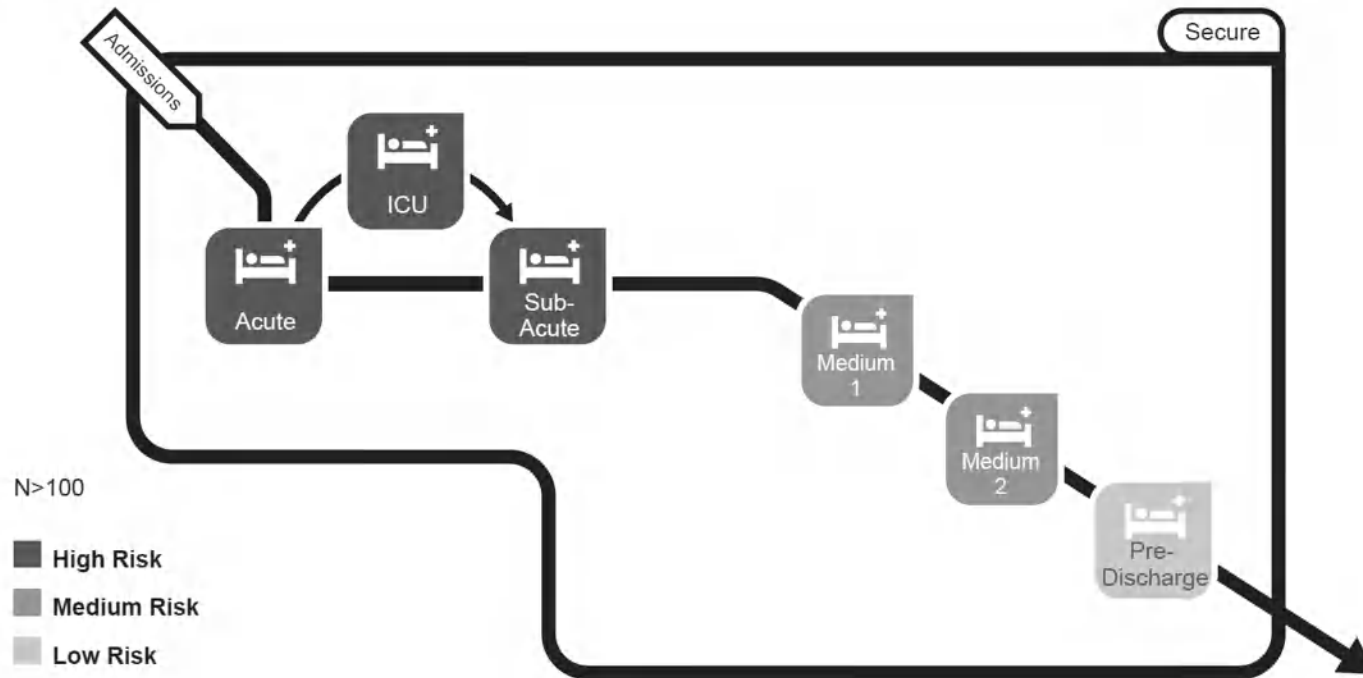
Model B
Manifold: flat streaming



$N=(10-20) \times 4$

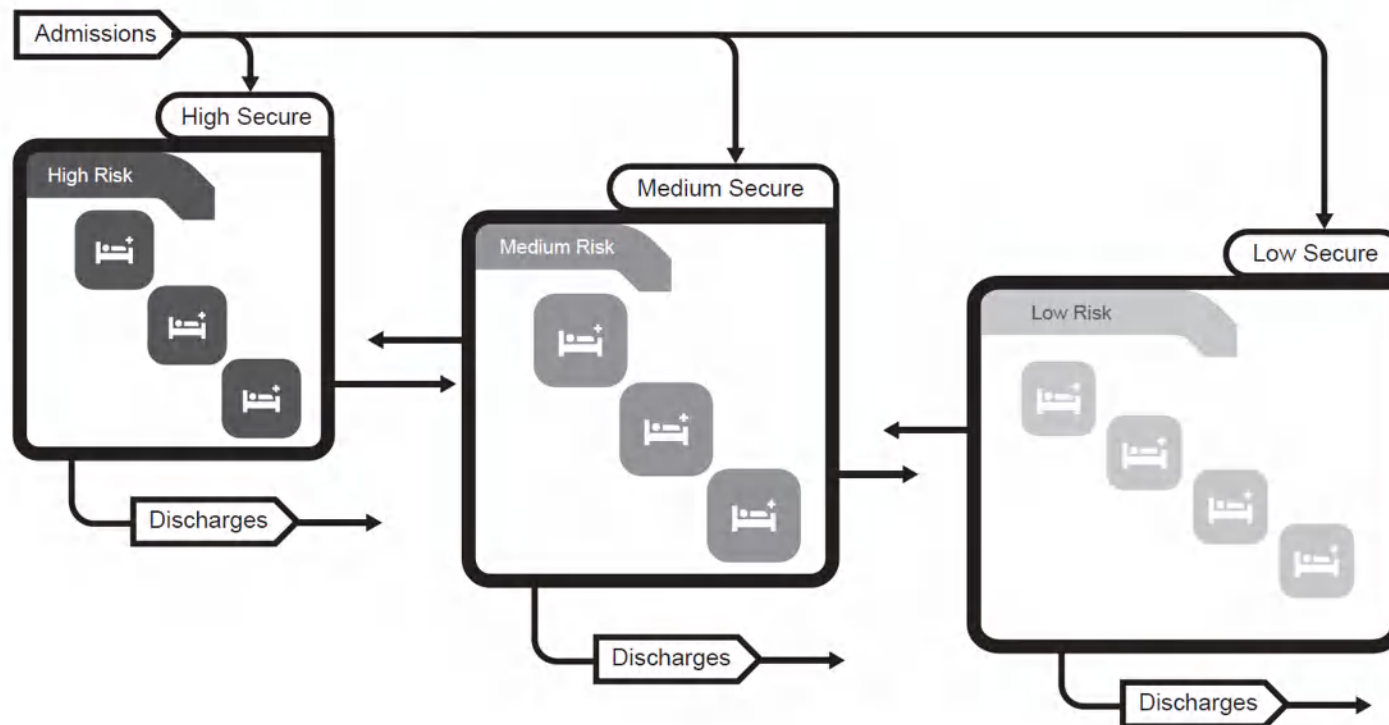
	Triage / proportionate	consistent	Transparent	Safe	Clinical needs based	Population based
Model B	no	No	Yes	No	Partially	no

Model C1
Stratification within
the hospital



	Triage / proportionate	consistent	Transparent	Safe	Clinical needs based	Population based
Model C1	Yes	Yes	Yes	Yes	Partially	no

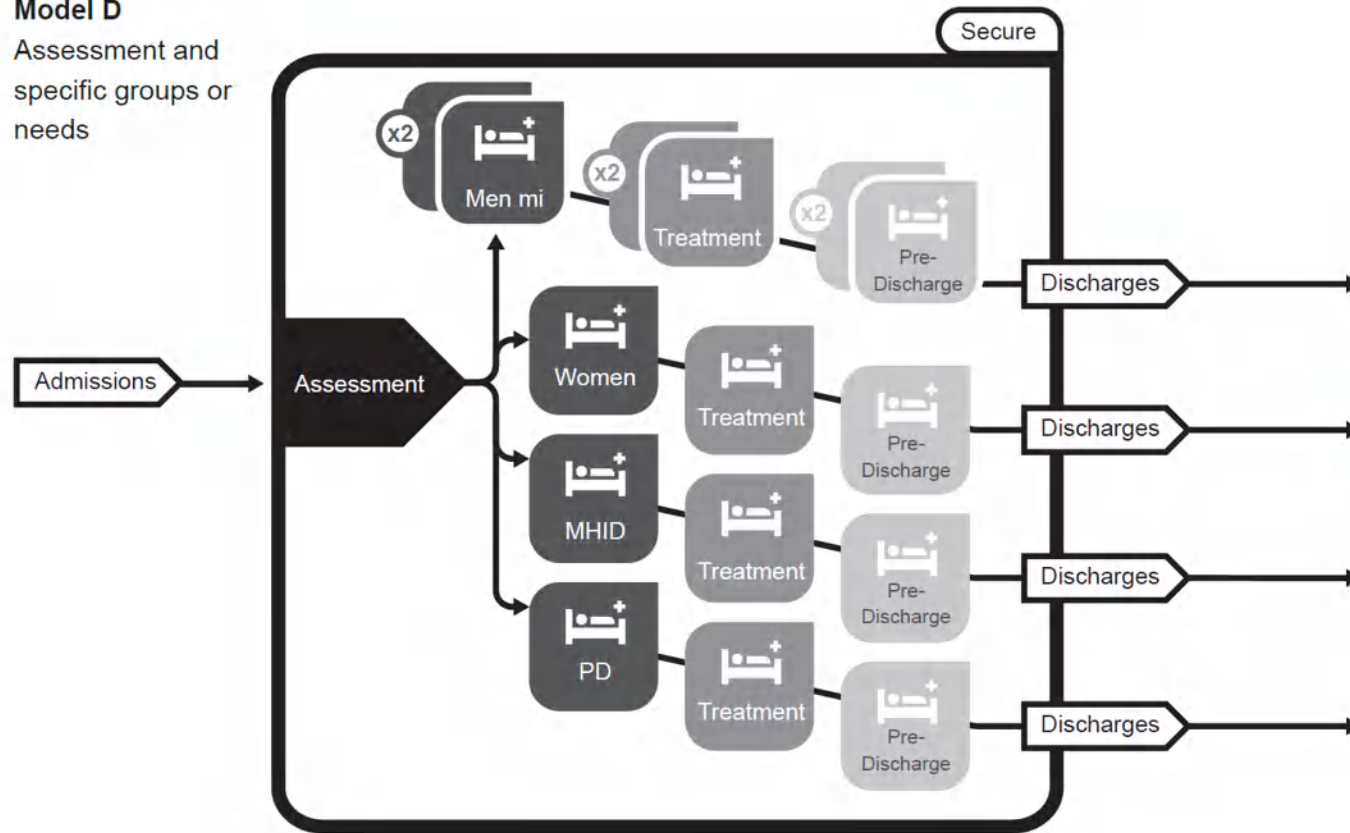
Model C2
Stratification for very large populations



	Triage / proportionate	consistent	Transparent	Safe	Clinical needs based	Population based
Model C2	Yes	Yes	Yes	Yes	partially	Yes

Model D

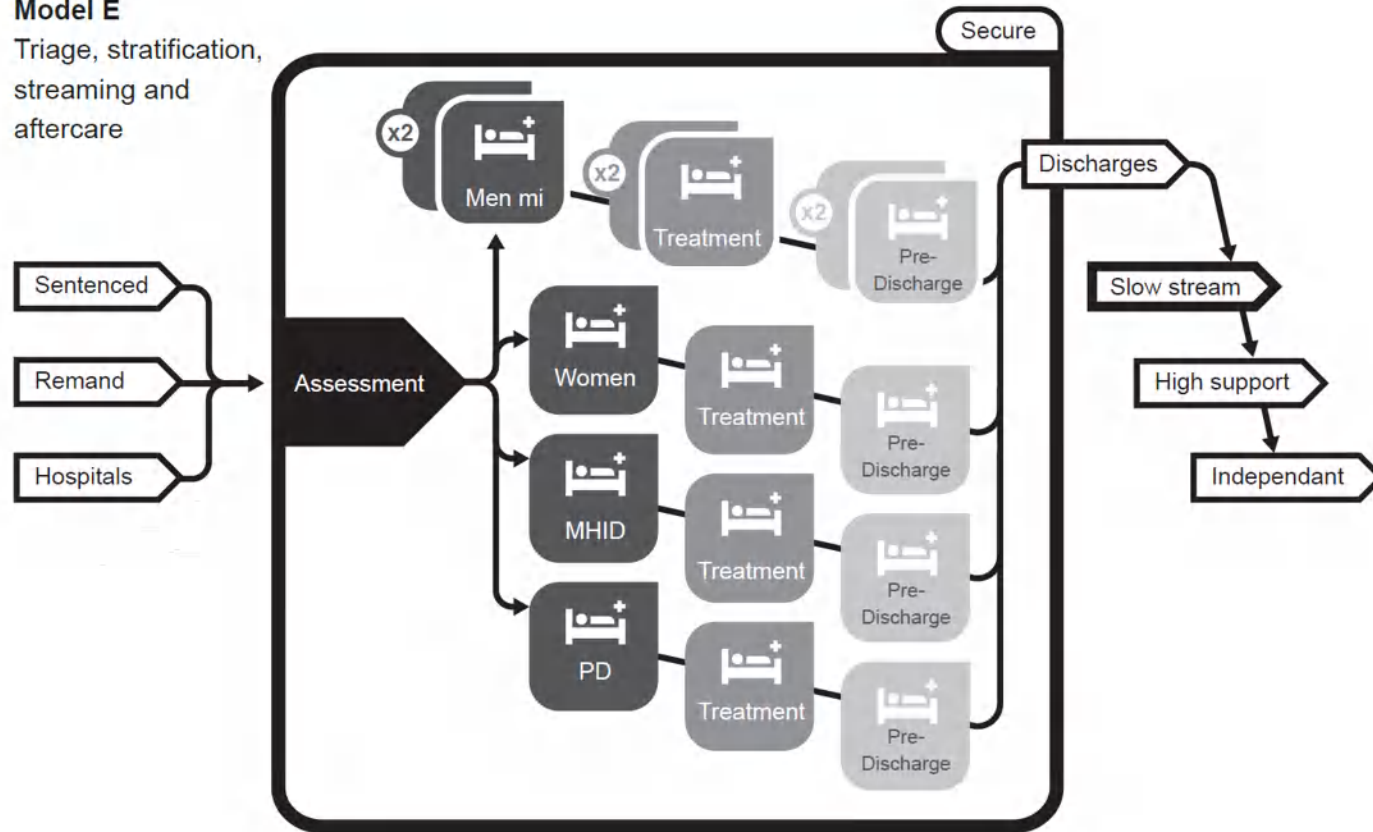
Assessment and specific groups or needs



	Triage / proportionate	consistent	Transparent	Safe	Clinical needs based	Population based
Model D	Yes	Yes	Yes	Yes	Yes	no

Model E

Triage, stratification, streaming and aftercare



	Triage / proportionate	consistent	Transparent	Safe	Clinical needs based	Population based
Model E	Yes	Yes	Yes	Yes	Yes	Yes

Active management of length of stay

15 beds can accommodate up to 60 admissions a year if managed to a limit of 3 months

$t_{1/2}=30$ days;

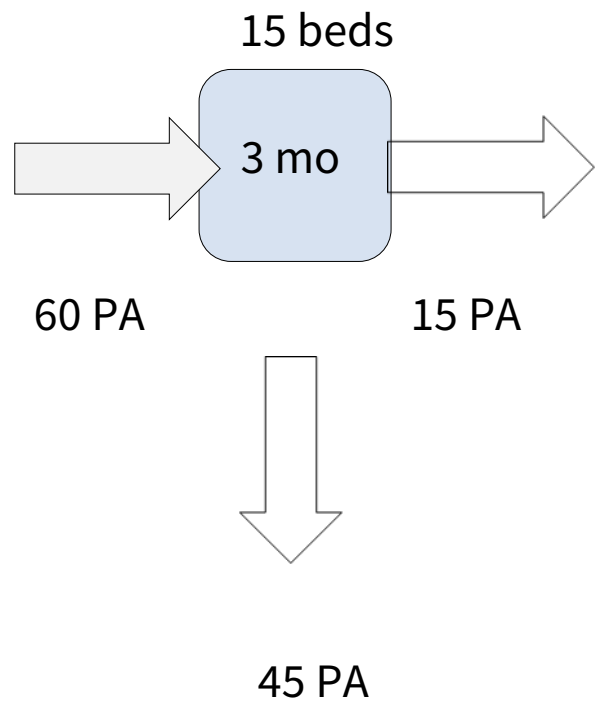
15 beds can accommodate up to 15 admissions a year if managed to a limit of 12 months

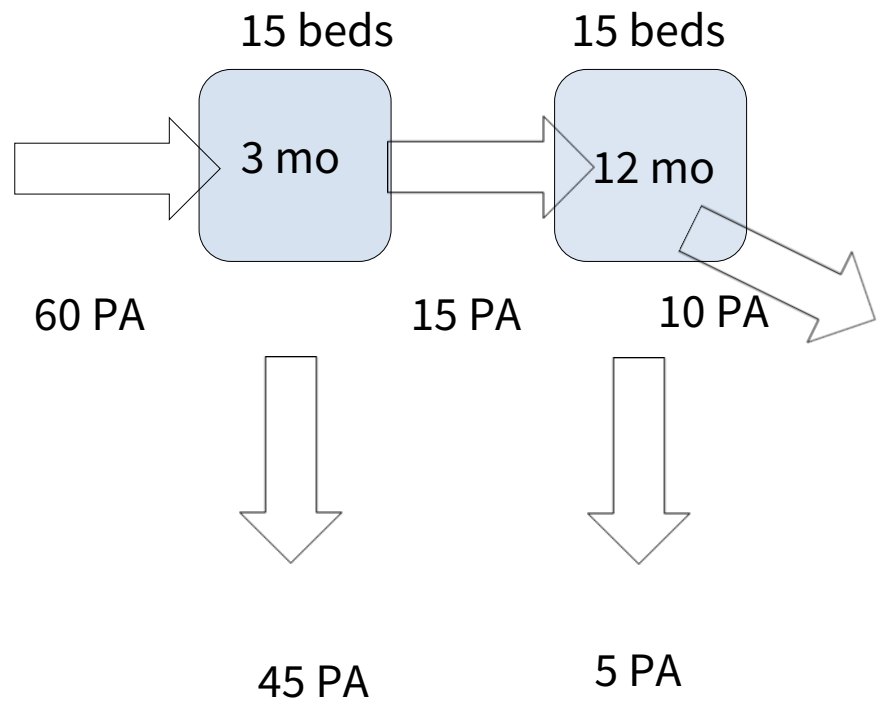
$t_{1/2}=120$ days

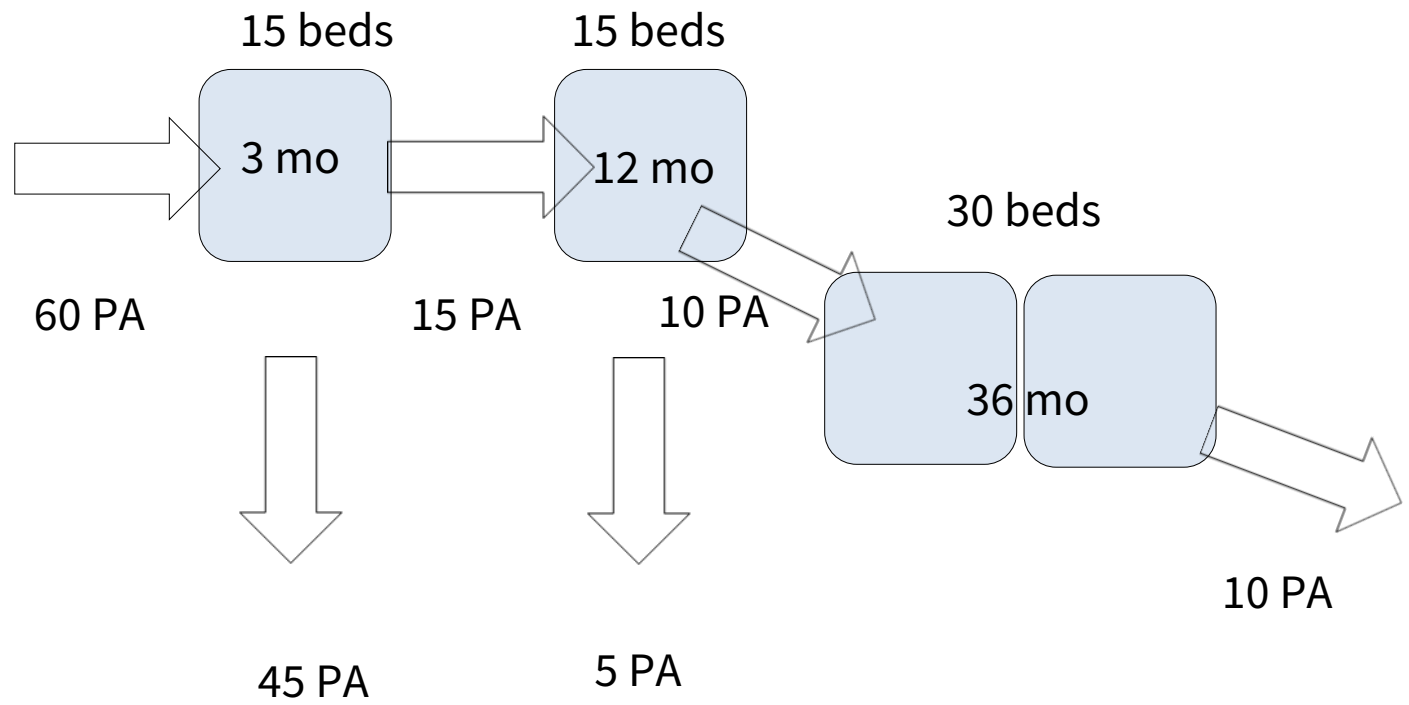
30 beds can accommodate up to 10 admissions a year if managed to a limit of 3 years

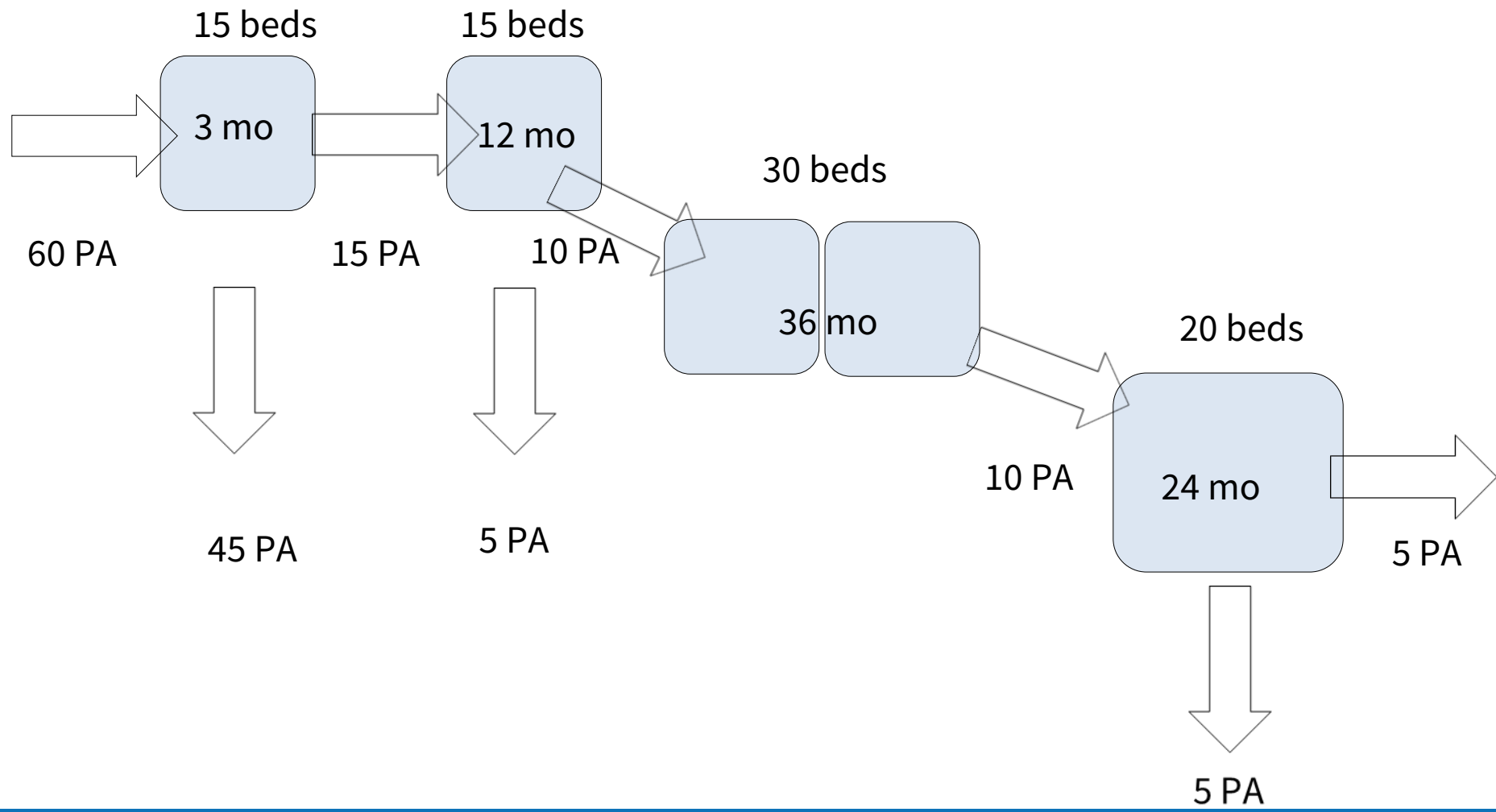
$t_{1/2}=360$ days

20 beds can accommodate up to 10 admissions a year if managed to a limit of 2 years

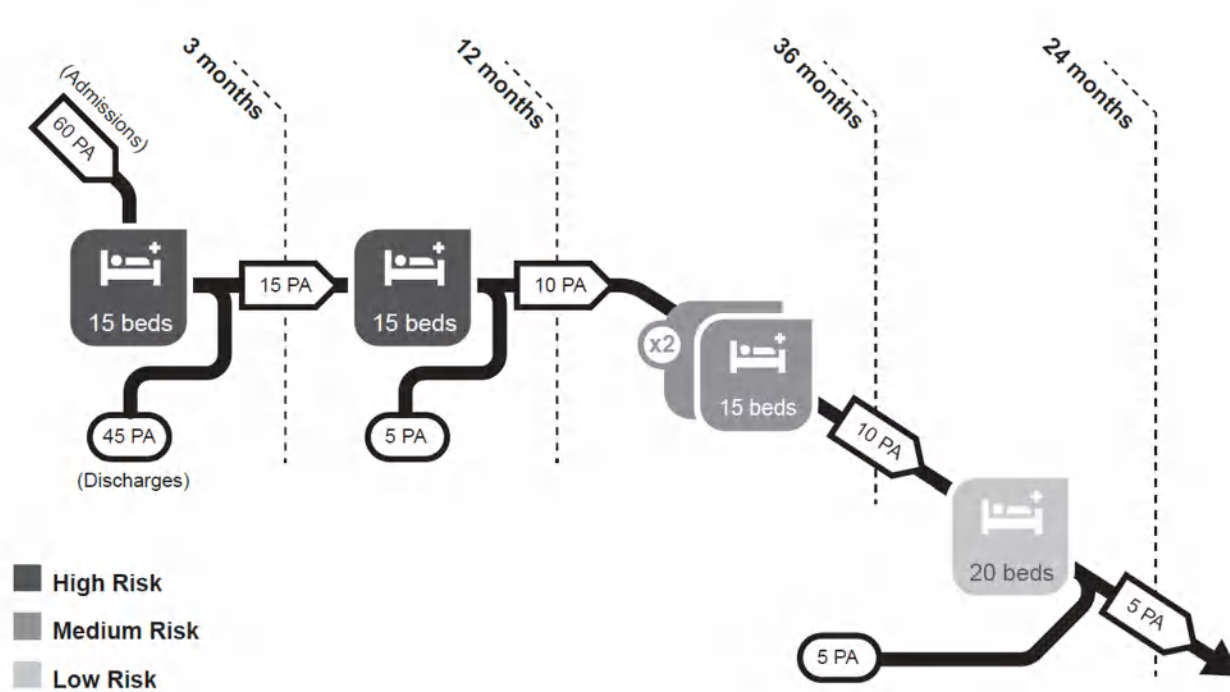








Standard Model:
Stratified therapeutic security



3. Treatments

Treatments

- Multi-modal – pharma and seven pillars
- Therapeutic alliance and hard goal setting
- Resourcing, scheduling, delivery

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PHILOSOPHICAL
TRANSACTIONS
OF
THE ROYAL
SOCIETY

Phil. Trans. R. Soc. B (2008) **363**, 2577–2597
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Published online 8 May 2008

Review

A review of effective interventions for reducing aggression and violence

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This paper addresses the question of whether individual violence can be reduced in frequency or severity, if so to what extent and by which methods. It opens with a brief overview of the nature of personal violence and discussion of some key definitional and methodological problems. However, its principal focus is on the findings obtained from a series of meta-analytic reviews of structured programmes for adolescents and adults who have shown repeated aggression or been convicted of personal violence, drawing together the results of studies conducted in prison, probation, youth justice and allied services. Additional results are considered from a systematic review of studies of violence prevention among offenders with mental disorders. This incorporates the preliminary findings of a meta-analysis of controlled trials of psychosocial interventions with that population. Overall, it is concluded that there is sufficient evidence currently available to substantiate the claim

SPECIAL ARTICLE

How important are the common factors in psychotherapy? An update

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The common factors have a long history in the field of psychotherapy theory, research and practice. To understand the evidence supporting them as important therapeutic elements, the contextual model of psychotherapy is outlined. Then the evidence, primarily from meta-analyses, is presented for particular common factors, including alliance, empathy, expectations, cultural adaptation, and therapist differences. Then the evidence for four factors related to specificity, including treatment differences, specific ingredients, adherence, and competence, is presented. The evidence supports the conclusion that the common factors are important for producing the benefits of psychotherapy.

Key words: Common factors, contextual model, psychotherapy, alliance, empathy, expectations, cultural adaptation, therapist differences, specific ingredients

(*World Psychiatry* 2015;14:270–277)

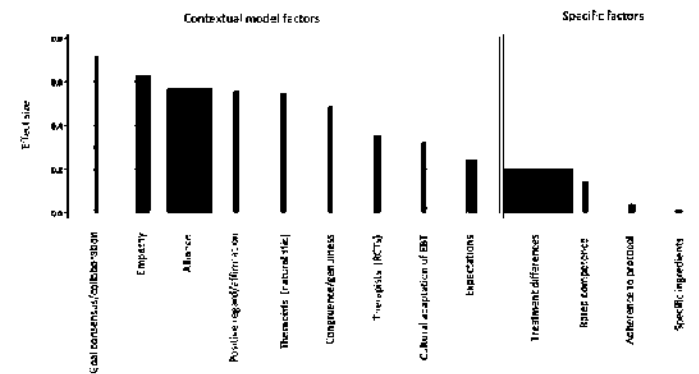


Figure 1 Effect sizes for common factors of the contextual model and specific factors. Width of bars is proportional to number of studies on which effect is based. RCTs – randomized controlled trials; EBT – evidence-based treatments

Multimodal treatments to prevent violence and enhance recovery:

- **core treatments:**

physical health, mental health, substance misuse, offending behaviours, family and intimacy (5 h per patient per week)

- **rehabilitation:**

self-care and activities of daily living, education occupation creativity (20 h per patient per week)

- **Tiered treatments and competencies**

- **Quality standards:**

- 25 h per patient per week, of which

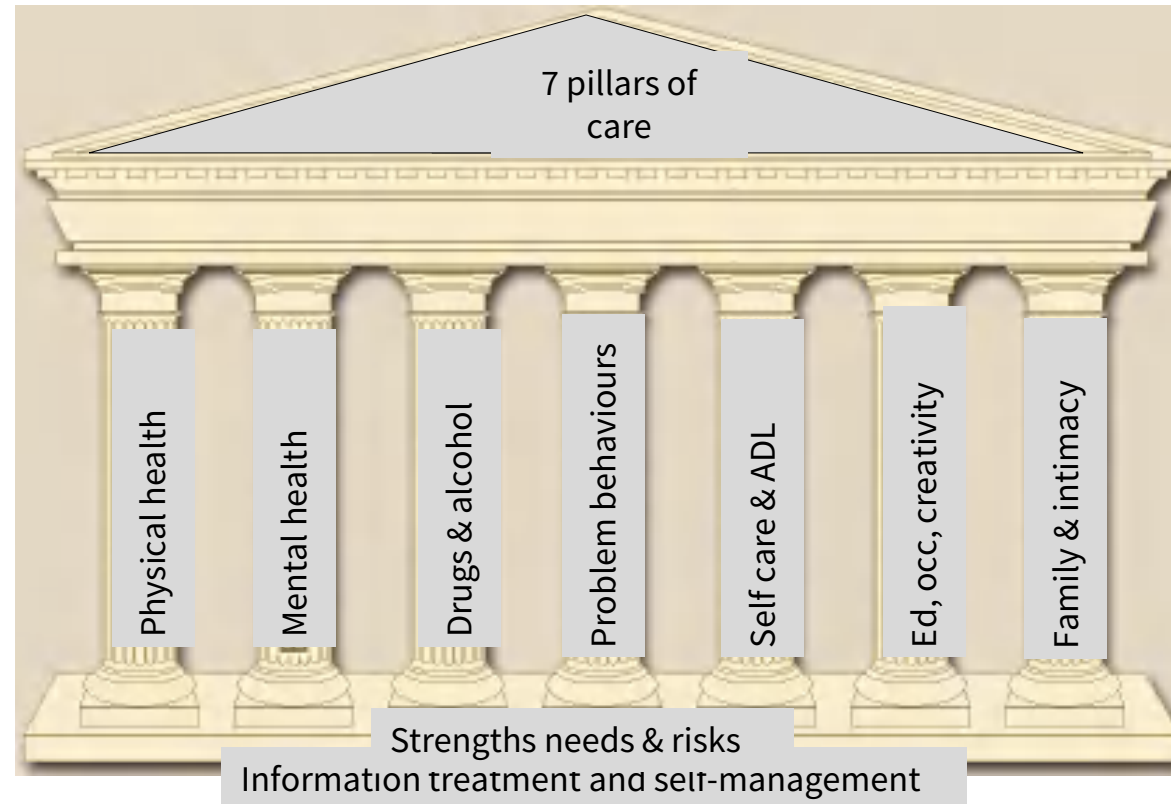
- 5 h of core treatments at higher tiers per patient per week

- **Logic model: inputs and outcomes**

- 17.5–25 whole-time equivalent therapists for 100

patients to deliver 5 h core therapy for 100 patients

Individual care plan Hospital wide system



Short term
Substantive
Maintenance / recovery

Neurcognitive learning style
Sequencing
Dose-response

Tier	definition	duration	examples	Skills
1	Low Intensity interventions are brief interventions aimed at current distress or transient or mild mental health problems but may have a limited effect on overall functioning or risk of re-offending. The interventions are aimed at mild/moderate mental health problems with little complexity, are time-limited and normally last between 2-6 sessions	2 to 6 sessions.	Information, psychoeducation, counselling,	Knowledge, listening skills, non-directive.
2	High Intensity denotes a standardised psychological therapy delivered to a formal protocol or model for mental health problems with significant effect on functioning and where there is a significant effect on risk of re-offending and future risk of harm	2 to 6 sessions	Manualised group work, manualised interventions. Coping skills, CBT for specific client groups.	Use of manual.
3	Specialist interventions are standardised high intensity psychological therapies developed and modified for specific patient groups. These are aimed at moderate/severe mental health problems with significant effect on functioning. The interventions themselves are generally targeted at patients with more complex risk and needs and are directly related to offending behaviour and its causes	6 to 20 sessions	CBT, interpersonal psychotherapy, short term focused psychodynamic psychotherapy for moderate to severe mental illness and mental disorder with significant complexity	
4	Highly Specialist interventions are psychological therapies or interventions based on case formulations that may be drawn from a range of psychological models and are individually tailored to the patient's mental health problems and where risk assessment and management are key drivers in the execution of the therapy.	Normally last 16 sessions or longer.	Formal psychotherapies for complex problems. Individualised tailored interventions based on case formulations drawn from a range of psychological models, aimed at patients with highly complex and / or enduring mental illness and mental disorder	Supervision and training, research and consultation skills

Treatment Resources

25 hours a week of ‘structured activity’

5 hours a week of core treatment programmes

- Mental health
- Substance misuse
- Offending behaviour
- Family therapies

Treatment Resources 2

Model A: 5 hours / week for 100 patients = 500 hours

Model B: 3 hours 1:1 and a 2 hour group (8 patients 2 therapists)

20 hours / week of face to face time per WTE

Model A:

All Individual Sessions =

- 500 hours 1:1 / 20 =
- **25 WTE** for 100 patients (not MDT members!)

Model B:

2 hours / week of a group of 8, with two therapists for 100 patients =

- 12.5 groups / week, 2.5 WTE

3 hours / week 1:1 for 100 patients

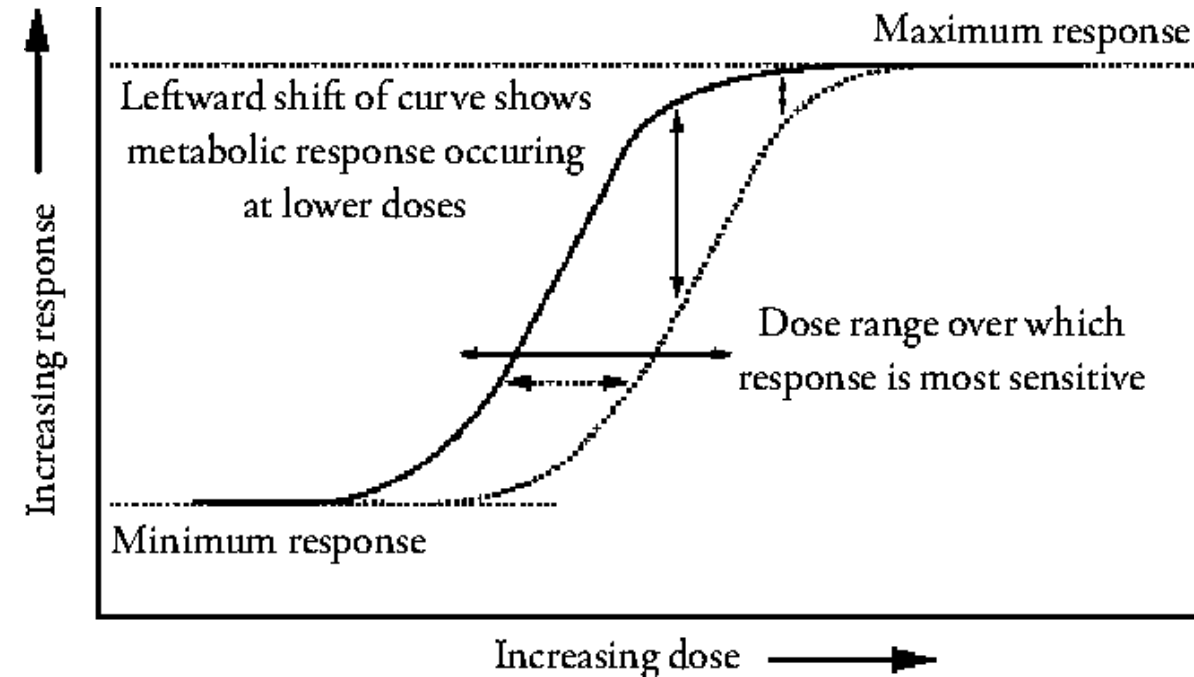
- 300 hours / 20 = 15 WTE

- **Total 17.5 WTE** for 100 patients

4. Evaluation

Logic Model

- Relating resources / in-puts to outputs / outcomes
- Has the model of care defined achievable goals?
- **Will five hours a week of tier 3 and tier 4 programmes in mental health, substance misuse, offending behaviour and family therapy lead to an actively managed length of stay?**



Population health and organisation performance indicators:

- sustainable admission and discharge rates over 5 years

(length of stay)

- admissions per 100 000 per year, discharges per 100

beds per year

- violence and restrictive practices per 100 admissions and per 100 beds

- absconding per 1000 episodes of leave outside the secure perimeter.

- positive drug screens per 100 patient-years

Individual-level indicators – the four recoveries:

- **forensic recovery:** consent and capacity, leave, transfer, conditional discharge, risk and protective measures; treatment programme completion; forensic recovery
- **symptomatic recovery:** positive, negative and general symptoms, remission rates, violent incidents and restrictive practices
- **functional recovery:** neurocognition and social cognition, clinical and global assessment of function, social and occupational function
- **personal recovery:** ward atmosphere, satisfaction, working alliance, perceived coercion; concordance of self-reported and staff-rated treatment completion and forensic recovery

Four Recoveries:

six monthly, independent, reporting to MHRT, routine outcome measures

Personal recovery	Symptomatic recovery	Functional recovery	Forensic recovery
Ward atmosphere	PANSS	MCCB	Leave (rate, time to)
Quality of life	Remission rate	Neurocognition	Transfer
	Young Mania Scale	Social cognition	Capacity to consent
	STAXI / Novaco	AMPS-P	Conditional discharge
	GAF	SOFAS	MacArthur CAT
		GARF	DCL
Self-report DUNDRUM-3			DUNDRUM-3
Self-report DUNDRUM-4			DUNDRUM-4



Observed Outcomes: An Approach to Calculate the Optimum Number of Psychiatric Beds

Richard O'Reilly¹ · Stephen Allison² · Tarun Bastiampiallai²

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Abstract

The number of psychiatric beds, in most developed countries, has decreased progressively since the late 1950s. Many clinicians believe that this reduction has gone too far. But how can we determine the number of psychiatric beds a mental health system needs? While the population health approach has advantages over the normative approach, it makes assumptions about optimal and minimum duration of hospitalization required for various psychiatric disorders. In this paper, we describe a naturalistic approach that estimates the required number of psychiatric beds by comparing the bed levels at which negative outcomes develop in different jurisdictions. We hypothesize that there will be a threshold below which negative outcomes will be seen across jurisdictions. We predict that hospital key performance indices will be more sensitive to bed reductions than the clinical and social outcomes of patients. The observed outcome approach can complement other approaches to determining bed numbers at the national and local levels, and should be a priority for future health services research.

Keywords Psychiatric beds · Deinstitutionalization · Health services research



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Thank You

DUNDRUM toolkit:

DRILL:

DUNDRUM Capacity Ladders:

ResearchGate:

Population outcomes

Rates of homelessness amongst people with SMI

Rates of people with SMI in homeless shelters

Rates of all cause mortality (SMR) amongst people with SMI

Rates of suicide (and SMR amongst people with SMI)

Rates of crime committed by people with SMI

Rates of incarceration amongst people with SMI

Prevalence of SMI in prison populations, remand and sentenced

Burden on carers

Hospital / Service KPIs

Out of area placements

Emergency room waiting times

Involuntary admissions

Occupancy rates in psychiatric units

Average length of stay in psychiatric units

Level of acuity on inpatient wards

Discharge to homelessness

Readmission rates

- General systems theory is based on non-linear systems
- Queue theory
- Flow dynamics and length of stay
- Reliable when studying whole systems
- Reliable when systems are stable over appropriate periods

$$- y = A^{-B} + C^{-D} + E^{-F}$$

- Describes population dynamics
- Mixed exponentials
- Servo systems
- Mandelbrot, fractal and chaotic systems

Cross-sectional length of stay

A = notional acute beds, C=notional medium-term beds,
E = long term beds.

B, D & E = (1.44 X 1/half-life)

95% discharged in four times the half-life.