
MH-CCP Version 1.11(S) – User Guide

Summary version without appendices (September 2002)

About MH-CCP version 1.11(S)

MH-CCP Version 1.11(S) is a cut-down version of the document *Mental Health- Clinical Care and Prevention (MH-CCP) model, Version 1, 11th revision (Version 1.11)*. It contains all the text of the model itself, but some of the tables are in a more compact form. Appendices A-J have been edited down to various degrees, leaving those parts that are essential to the model or that address key issues. The whole is about half the length of the original document of 158 pages.

The core of the MH-CCP model is a series of Excel spreadsheets that enable the model to be applied to different populations, and so that its parameters and assumptions may be changed to reflect different priorities, resources, and so on. This printed version is a “static” view of one particular implementation of the MH-CCP model, for one “standard” set of parameters that reflect the best current estimates we could make of key factors, with the rationale for choosing them laid out in a way that allows another user to consider how they might suit an intended application, or might need to be varied.

MH-CCP was developed through 1999 and 2000 by staff of the Centre for Mental Health, New South Wales Health Department, and then reviewed and considered by staff of the (regional) Area Health Services in NSW. Version 1.0 was released for comment on 7 April 2000, and Version 1.11 was finalised for release as a planning tool in January 2001. In the process, the supporting document doubled in size, as Appendices were added to address particular issues. Since that time, it has been used by Area and Departmental staff in planning for about 18 months. Thus MH-CCP has passed through field testing in a practical working environment. In general it has been found useful.

User's Guide

In working through the model and explaining it to users, we have found that those who simply wish to apply it “as is” do not need the additional information in the Appendices. These are of value for re-working the model, however. Thus Version 1.11(S) retains the gist of the appendix information, and the references. This User Guide is based on the order of presentation that seems to be most useful when teaching people how to use the model for their own planning tasks. Typically, that process leads to querying the basis for one or more parameters, but these tend to vary from one situation to another. Thus this guide simply describes the standard model, and the documentation should be consulted if any variation seems to be needed.

MH-CCP is designed to calculate the resources required (full time equivalent staff, beds) to provide an agreed level of mental health care for a population. It also predicts the standard “output” statistics for such a system of care. A separate cost model can then be applied to those resource/ output predictions. A key feature of MH-CCP is that it is a model for mental health services to 100% of the population, not merely a subgroup.

Age Structure

MH-CCP has six age-specific sub-models, for ages 0-1; 2-4; 5-11; 12-17; 18-64; 65+. In the document and spreadsheets, the four younger age groups have also been combined into an overall age 0-17 model; and all age groups have been combined into a crude total population model. These are useful for quick aggregate calculations, but MH-CCP is not designed to be used in that way.

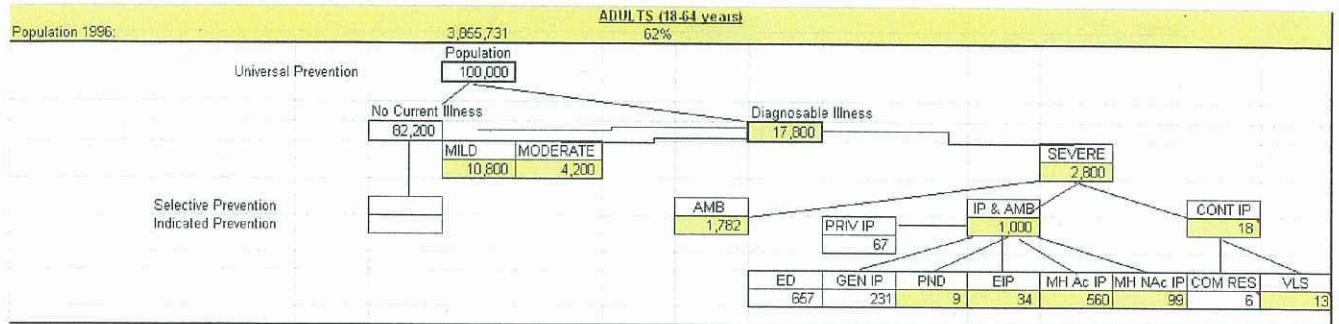
Data Requirements

The data needed for MH-CCP are:

- Populations, subdivided into the designated age groups
- Estimate of 12-month prevalence of service need, by age group and service stream
- Specification of the “average” service to be provided to one person in each stream
- Priority specification: the percentage of each group who will receive services
- Ambulatory care clinical time use data: the face-to-face or “billable time” portion of community staff work hours, per Full Time Equivalent Staff, per annum.
- Inpatient Care statistics: Staffing ratios, occupancy by type of inpatient care
- (For cost modelling only) : Unit resource costs (salaries, overheads).

Where local information is available, it may be inserted in the model. However, it should be noted that the “prevalence of service need” data is based on epidemiological information that is unlikely to be available at the local level. In fact, for some of the most critical parameters in MH-CCP there is no direct estimate available for Australia at all, and it was necessary to construct estimates by alignment and reconciliation of different sources. The same is true in every other country in the world.

Reading the Model (1) The Epidemiology/ Utilisation Module



The first panel in each age-specific MH-CCP spreadsheet is based on analysis of available epidemiological data to estimate the 12-month prevalence of illness that requires a particular kind of service. Much of the text of the MH-CCP model, and background analyses not reported in detail, are needed to arrive at the estimates above.

For 18-64, the estimate of illness is 17.8%, divided between three main groups, labelled “MILD” (10.8%), “MODERATE” (4.2%) and “SEVERE” (2.8%). The basis for this, and the inclusion/ exclusion definitions, are described in the documentation. The “care plans” for the MILD and MODERATE groups are relatively simple. The SEVERE group, equivalent to the US classification of “Serious and Persistent Mental Illness” (SPMI) is where most resources are used. There are care plans for many sub-groups within the “SEVERE” group.

The group labelled “AMB” (Ambulatory Care Only) group is the largest, corresponding to 1.78% of the population, but is also the lowest in unit treatment requirements.

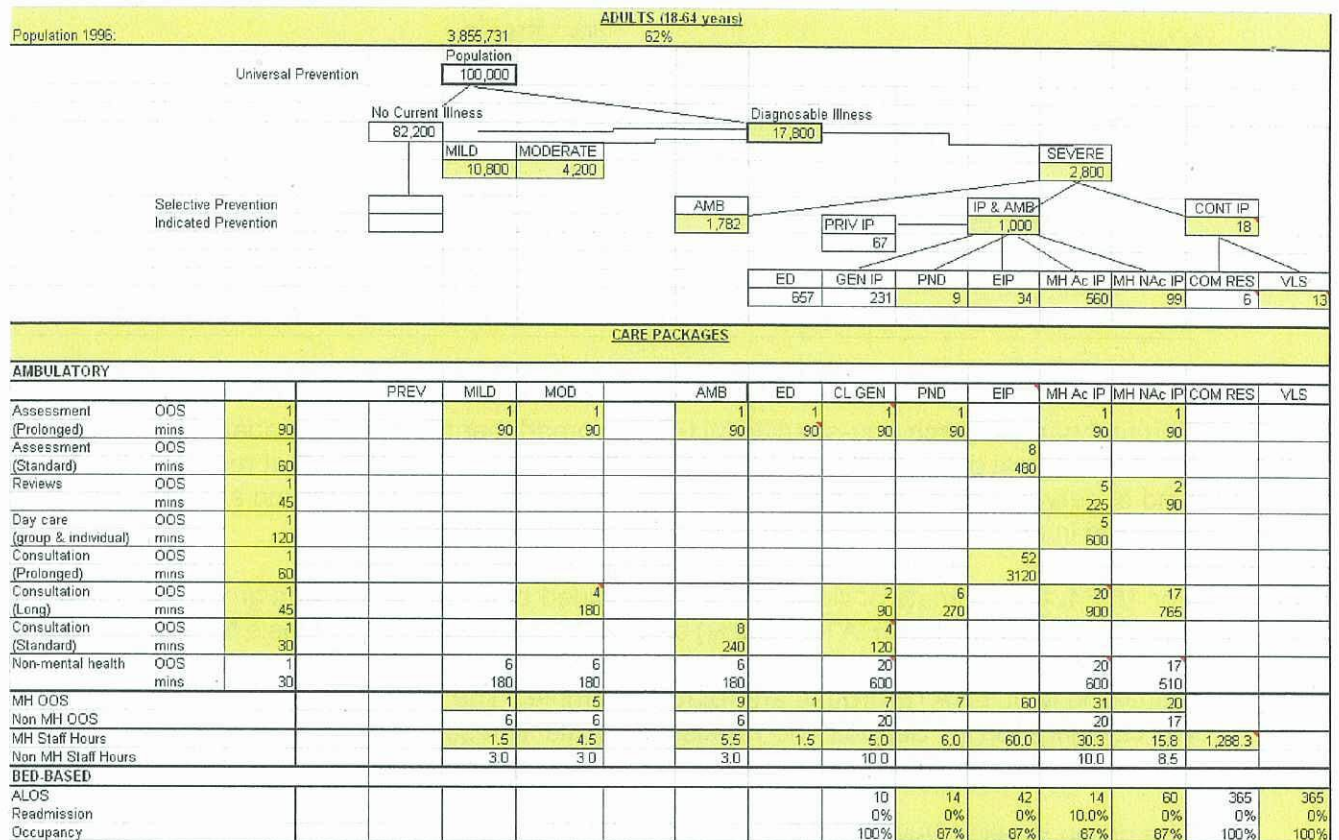
At the other extreme, the group labelled “CONT IP” (Continuous Inpatient-style care, 365 days per year) is very small, but has the highest resource demand. It is divided further into the group labelled “VLS” (Very Long Stay) who receive continuous care in hospital inpatient settings; and the group labelled “COM RES”, who receive continuous care in 24-hour staffed community residential settings. Staff in the latter case are regarded as part of the Ambulatory care staff calculations, rather than as inpatient care staff.

The other sub-group of the “SEVERE” group is labelled “IP & AMB” (Inpatient and Ambulatory), and are defined by their need for specialist public sector Acute Inpatient Care (“MH Ac IP”); or similar Non-Acute care (“MH NAc IP”), or Inpatient care in a public medical/ surgical general bed (“GEN IP”); or in special inpatient care for Early Psychosis Intervention (EIP) or Post natal depression (PND). A sub-group also receives Private Inpatient Care (“PRIV IP”) and they play no further role in this public sector model.

The other groups shown in the diagram are those who attend Emergency Departments (“ED”); and the largest group (“No current illness”) who are nevertheless part of the target population for mental health promotion and illness prevention.

Arriving at the estimates for this part of the model is a combination of population epidemiology and service use statistics. The former is usually used to set the overall numbers, typically higher than current usage; and the latter are typically used to assess the proportions between service streams: for example, public versus private hospital care; specialist mental health care versus general health care; Acute versus Non-Acute. These parameters tend to be system-specific. The basis for all these calculations is stated in the documentation.

Reading the Model (2) The “Care Package” Module



The second “panel” of MH-CCP specifies a unit “Care Package” for an individual in each group. Ambulatory care is specified in terms of contacts or “Occasions of Service” (OOS) of different durations (mins) during a 12-month period. Contacts deemed to be provided by specialist mental health staff are coloured; those expected to be provided by general health staff (including General practitioners) are left uncoloured. These are summarised in the rows labelled “MH OOS” and “Non MH OOS” respectively.

Bed-based care (last rows) is specified by Average length of Stay (ALOS) in the designated type of unit (Acute, Non-Acute, etc). A planned readmission rate (%) and planned occupancy of the type of unit (%) is included.

An important feature of these care plans is that the “package” includes BOTH the ambulatory and (where applicable) the inpatient care. This has caused some confusion, because historically these services have usually been planned separately, rather than in an integrated model. It is emphasised here for that reason. In MH-CCP, all inpatient care is designed to be automatically backed up by Ambulatory care contacts – that is, it is not considered to be adequate practice for a person to receive acute inpatient care and nothing else. The only exception is the group in continuous inpatient care, for obvious reasons.

As an example, the column for a member of the “MH Ac IP” group (560 per 100,000) shows a total care package comprising (reading from the top): one x 90 minute community-based assessment, 5 x 45 minute community-based reviews; 5 x 120-minute “day care” contacts; 20 x 45-minute community contacts with specialist staff and 20 x 30-minute contacts with community non-specialist staff; plus 14 days in a specialist Acute Inpatient unit. How this would be scheduled over a year would obviously vary, but the essential point is that the clinical modules in MH-CCP are based on the way that inpatient care would be used in a planned way as part of an integrated program of care. This should be distinguished from

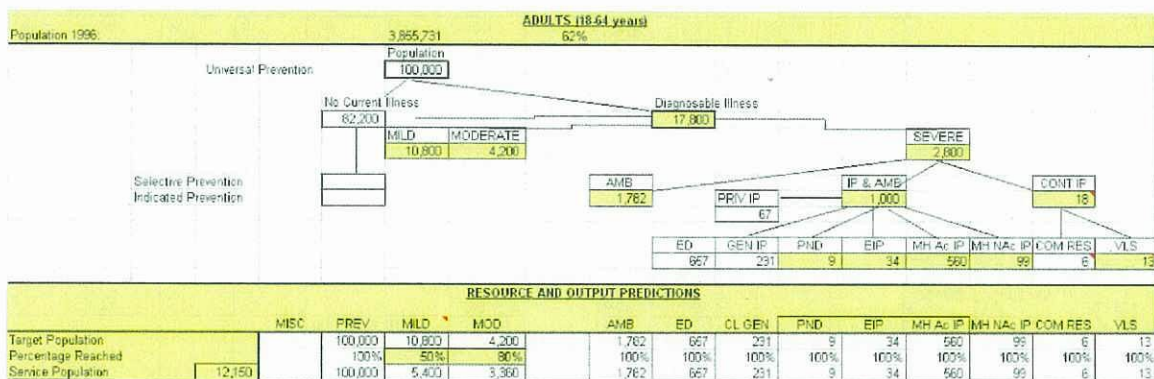
use that often occurs at present, where a person may receive inpatient care because they have NOT received adequate community-based care and have relapsed. In the MH-CCP clinical modules a person who required inpatient care would need it because of the severity of their illness even when supported by a high level of community-based contacts.

Another point to note is the common theme that all people with diagnosable illness receive at least a 90-minute specialist assessment. In the case of the largest group (“MILD”) the rest of the care is by non-specialist staff.

From this section of the model it is possible to work out the care that an “average” individual in the group would receive. It is also, of course, possible to vary it: to prescribe more or less care, increase or decrease the length of stay, and so on.

This section of the model is thus the one where input from clinicians can be invited, and where scenarios of prescribing different patterns of care can be explored for their impact on resource predictions.

Reading the Model (3) The Priority Setting Module



The figure above has hidden the “Care Package” module to highlight the (very simple) priority-setting mechanism in MH-CCP. The Epidemiology/ Utilisation module states, for a given population, how many individuals need each care package. The priority setting module simply sets the percentage of each group who will receive it.

Note that this implies the principle that a package should not be “diluted” and spread across more individuals. In practice, more people might be treated by shortening length of stay below the agreed “good average” level, or seeing the person less often or for less time, but MH-CCP is NOT a model for sub-optimal care. If resources are limited, MH-CCP requires the explicit statement of who will receive the “adequate” amount, as against none.

As an example, the Target Population for public sector specialist mental health services in the US may be explicitly defined as SPMI (or “SEVERE” in MH-CCP terms), and this can be modelled by setting “percentage reached” to zero for all other groups.

In the “standard” MH-CCP model, this percentage is set to 50% for “MILD” and 80% for “MODERATE”, partly to illustrate the process, and partly to reflect beliefs about the likely rate of initial uptake of forms of service that have not historically been supplied in the public sector.

Reading the Model (4) Resource and Output Predictions

CARE PACKAGES															
AMBULATORY															
			PREV	MILD	MOD	AMB	ED	CL GEN	PND	EIP	MH Ac IP	MH NAc IP	COM RES	VLS	
Assessment (Prolonged)	OOS mins	1		1	1	1	1	1	1	1	1	1	1		
Assessment (Standard)	OOS mins	60								8					
Reviews	OOS mins	45								460			5	2	
Day care (group & individual)	OOS mins	120											225	90	
Consultation (Prolonged)	OOS mins	60								52			5		
Consultation (Long)	OOS mins	45			4			2	6	3120			20	17	
Consultation (Standard)	OOS mins	30			180			90	270				900	765	
Non-mental health	OOS mins	1		6	6								20	17	
MH OOS				1	5		9	1	7	7	60	31	20	20	
Non MH OOS				6	6		6						20	17	
MH Staff Hours				1.5	4.5		5.5	1.5	5.0	6.0	60.0	30.3	15.8	1,283.3	
Non MH Staff Hours				3.0	3.0		3.0		10.0			10.0	8.5		
BED-BASED															
ALOS								10	14	42	14	60	365	365	
Readmission								0%	0%	0%	10.0%	0%	0%	0%	
Occupancy								100%	67%	67%	67%	67%	100%	100%	
RESOURCE AND OUTPUT PREDICTIONS															
			MISC	PREV	MILD	MOD	AMB	ED	CL GEN	PND	EIP	MH Ac IP	MH NAc IP	COM RES	VLS
Target Population				100,000	10,800	4,200	1,782	657	231	9	34	560	99	6	13
Percentage Reached				100%	50%	80%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Service Population		12,150		100,000	5,400	3,360	1,782	657	231	9	34	560	99	6	13
AMBULATORY															
Non-MH OOS	Other	MH			32,400	20,160	10,689	-	4,620	-	-	11,197	1,680		
MH OOS		61,964			5,400	16,800	16,034	657	1,617	63	2,061	17,355	1,976		
Non-MH hrs		40,373			16,200	10,080	5,345	-	2,310	-	-	5,538	840		
ASSESS hrs		20,669			8,100	5,040	2,672	986	347	14	275	2,939	296		
CONT hrs		51,120	8,900		-	10,080	7,126	-	609	41	1,786	13,996	1,260	7,123	
PREV hrs		937		937											
CONTACT hrs		72,726	8,900	937	8,100	15,120	9,799	986	1,155	54	2,061	16,935	1,556	7,123	
PROM hrs		468													
P'SHIP hrs		2,342													
TOTAL AMB hrs		40,373	75,636	8,900	937	8,100	15,120	9,799	986	1,155	54	2,061	16,935	1,556	7,123
BED-BASED															
SEPS	Other	MH	MISC	PREV	MILD	MOD	AMB	ED	CL GEN	PND	EIP	MH Ac IP	MH NAc IP	COM RES	VLS
Other Seeps		237									9	34	616	99	13
BEDDAYS		20,827								231				6	
Other Beddays		4,326								2,310	126	1,443	8,622	5,928	4,709
BEDS		63.7									0.4	4.5	27.2	18.7	12.9
Other beds		11.9								6.3				5.5	
TOTAL IP FTE		91.2									0.6	6.8	40.7	22.4	20.6
TOTAL MH FTE		156.7	10.0	0.8	6.9	12.9	8.4	0.8	1.0	0.6	8.6	55.2	23.7	6.1	20.6
Clients/MH FTE/Year		78.0			780.8	260.3	212.9	780.8	234.2	14.0	4.0	10.1	4.2	0.9	0.6

The last module of MH-CCP is entirely mechanical, once the others are specified. The body of the table simply takes the “service population” figures as the multiplier for the total contacts (OOS) and contact hours for each individual care package, and for the bed-days of inpatient care, in each column.

To convert the Ambulatory Care contact hours into Full Time Equivalent staff numbers, an external parameter table is used, based on time-use data in which the key figure is an estimate of 67% (maximum) staff time spent in “contact”. This is usually referred to as “billable time” where it is paid directly (as in the US). A summary of the analysis leading to this figure is provided in the documentation.

The number of beds needed to deliver the bed-days of inpatient care depends only on planned occupancy and readmission rates. The estimate of FTE staff requirements is based on a model developed by the Queensland Health Department, that includes rosters and grades of staff for standard inpatient units. MH-CCP uses parameters from that model.

Reading the Model (4a) Summary Resource and Output Predictions

		MISC	PREV
Target Population			100,000
Percentage Reached			100%
Service Population		12,150	100,000
AMBULATORY	Other	MH	
Non-MH OOS	80,746		
MH OOS		61,964	
Non-MH hrs	40,373		
ASSESS hrs		20,669	
CONT hrs		51,120	8,900
PREV hrs		937	937
CONTACT hrs		72,726	8,900
PROM hrs		468	
P'SHIP hrs		2,342	
TOTAL AMB.hrs	40,373	75,536	8,900
	Profiled	Calculated	
100% AMB FTE	6.1	51.9	
100% CL FTE	4.6	9.4	7.6
100% PREV FTE	0.4	0.8	0.8
100% PROM FTE	0.4	0.4	0.4
100% P'SHIP FTE	2.0	2.0	2.0
AMB FTE	51.0		
TOTAL AMB FTE	64.5	64.5	10.0
BED-BASED	Other	MH	MISC
SEPS		771	
Other Seps	237		
BEDDAYS		20,827	
Other Beddays	4,328		
BEDS		63.7	
Other beds	11.9		
TOTAL IP FTE		91.2	
TOTAL MH FTE		155.7	10.0
Clients/MH FTE/Year		78.0	

The summary columns on the left of the Resource and Output Predictions table is the aggregate of the specific predictions for each of the right-hand columns for specific care streams.

However, there are two new additions at this point, to address the requirements for “whole population” resources in mental health promotion (“PROM”) and illness prevention (“PREV”); to provide general consultation-liaison “backup” from specialist mental health staff to general health staff (“CL”); and to support other partnerships in care provision (“P’SHP”).

Since these forms of care do not necessarily involve contacts, they are described in terms of contact hours and staff only.

A complexity arises in the FTE staff calculations, because in calculating totals it is simplest to assume that a particular form of care is provided only by staff who are 100% specialised in providing that form of

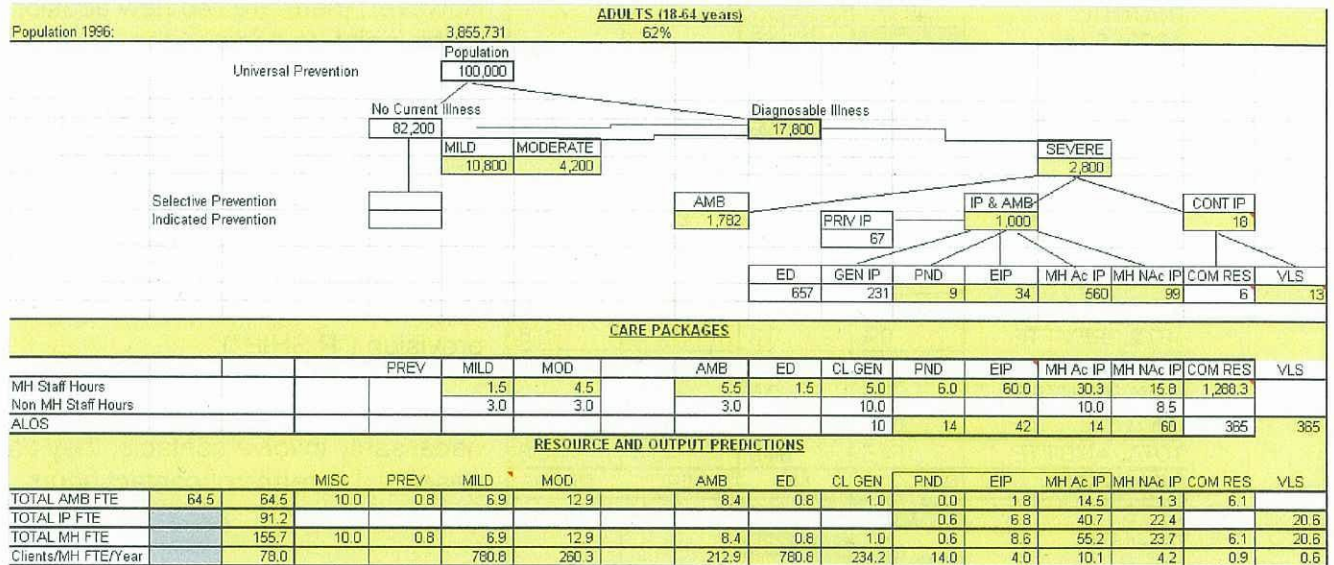
care, but in reality, some of it is provided by designated staff, and some of it is distributed over all staff as a component of their work profile.

This accounts for the two columns in the ambulatory care FTE calculations. The one headed “Calculated” is directly derived by adding up the requirements. The one headed “Profiled” translates this into a combination of designated (100% specialised) staff, and staff (labelled “AMB FTE” as distinct from “100% AMB FTE”) who provide a mixture of service types within their work profile. Thus, in the example above, the 0.4 FTE per 100,000 in mental health promotion is deemed to be entirely “100% PROM FTE” staff, whereas the 0.8 FTE per 100,000 for prevention is equally divided between designated and general staff. The calculation of the resulting profile requires use of the Excel “SOLVER” facility, but this is a relatively minor part of the model, and not described here. The main point is that the total is the same.

In a nutshell, these results suggest that a comprehensive mental health service to meet all requirements of 100,000 adults aged 18-64 would require 64.5 FTE specialist staff providing community-based services, supported by a significant amount of generalist community-based staff (40, 373 hours generalist care versus 75,536 hours specialist); and further supported by 63.7 specialist hospital beds and 11.9 other beds. The total specialist staff requirement would be 155.7 FTE for 100,000 adults aged 18-64.

Discussion

The adequacy and appropriateness of the MH-CCP parameters can of course be debated at great length. However, one important feature should be noted right from the beginning. Currently, specialist mental health services treat about 1% of the population. MH-CCP is a model to treat (overall) about 17% of the population. Despite that, it implies only about a 50% increase in resources, rather than a 17-fold increase. The reason is indicated below:



In this figure, many lines of the tables have been hidden to concentrate on the “bottom line”. As we move across the “severity” spectrum from left to right, the estimated numbers in need get smaller, and the resources needed to treat each get larger.

Current services are almost entirely focused on the “SEVERE” group of about 2.8% of population, and do not reach all of them. Moreover, a significant amount of the more expensive resources, such as inpatient care, are consumed by patients who should not need them if other supporting resources were at the levels modelled in MH-CCP, and resources were available at earlier ages and for less severe illness. Thus current Average Length of Stay and readmission rates are higher than the figures in MH-CCP.

Most importantly, the largest group (“MILD”) is considered to need only a 90 minute specialised assessment, with the remaining care delivered in general health services, supported by consultation-liaison backup from specialist mental health staff. Thus although they represent the bulk of the total “need” (10.8% versus 17.8% total), including them within the scope does not add proportionately to the resource requirements. In addition, the illustrative MH-CCP model assumes that only about half this group would seek out care, as is found in population surveys, so it is not a demand that would be immediately apparent.

An indicator of this “service intensity” is given in the last line of the table, namely “Clients per MH FTE per year”. In the extreme, a person in continuous inpatient-style care consumes as much staff time as 1,250 people in the “MILD” group.

One of the most important challenges for the MH-CCP model was to explain the discrepancy between population epidemiology suggesting that about one person in five or six “has a mental illness” with service data indicating that only about 1% of the population receives specialist public sector care. Under a set of well-defined assumptions, it has done so, and it suggests that it is entirely feasible to bridge the gap.

Using the MH-CCP Model

1. Formal

When released for use by (regional) Area Health Services in NSW in January 2001, MH-CCP was accompanied by a brief explanation which said in part:

“..the main purpose of the model is to serve as a framework and guide for planning processes and for understanding the link between population need and services by:

- indicating the specific requirements of a comprehensive population-based mental health service, including mental health promotion and prevention of illness,
- providing summaries of epidemiological, clinical, and service utilisation data,
- predicting the resources needed to provided a designated standard “care package” for each clinical and age grouping identified in the model,
- predicting the standard output measures that result,
- assisting priority setting by providing estimates of the proportions of various service needs that can be met with current or future planned levels of resources.

Any of the information in the MH-CCP model may be used in support of Area planning decisions. However, it is not a prescription, and must be used in conjunction with other information.”

2. Gap analysis

Currently, many debates about mental health services are comparative ones, in which (for example) data from the annual *National Mental Health Report* is used to compare one State/Territory in Australia versus another. Similarly, internal resource distribution processes within States and Territories may compute “relative need” of one administrative region versus another for a share of a fixed total. Lastly, expenditure on mental health, or levels of resources, may be compared with general health expenditures or resources, both nationally and internationally.

None of these processes actually answers the question of whether or not the resources are adequate relative to the need, which is the question MH-CCP set out to address, in detail, by age group and type of resource.

Typically, a gap analysis of the difference between current actual resources and the MH-CCP predictions for the same population will not show a uniform difference. It has been found useful to express these actual levels as a “% of MH-CCP predictions” for a chosen planning date, which then gives a “profile” of regional resources. Often it will be found that some particular component of the service has 100% or even more of MH-CCP predictions, while others may be much lower. This provides a useful introduction to debates about service development priorities, whether within a region, or across regions. For that purpose, it is usually the global resource predictions of MH-CCP that are most useful, by the main age groups.

3. Joint Planning

MH-CCP can also be very useful as a common framework for clinical staff, managers, and financial staff to discuss planning and priorities. In one application of this approach a one-day workshop was run with service staff from different regions and roles. The group worked through the application of the model to four “sectors”, each with quite small populations, and then discussed the results in a context where additional funding was available, but not enough to supply 100% of everything that might be wanted. Much of the work was done with hand-calculators, which helped to familiarise people with the features of the model.

The general effect of this, and the benefit, may be summarised as:

- Clinical staff had the opportunity to look at the “care packages” and see how increasing or decreasing the “package” related to resources.
- Financial staff could become familiar with the clinical issues and their interaction with money.
- All staff could see how the various data collections to which they contributed were useful – which is not usually as apparent to staff in the field as it is to central administrations
- The process “demystified” aspects of the planning model that were unfamiliar to one or another group, and brought all to a level of familiarity with the way the various components contributed to the overall relationship between “need” and costs.

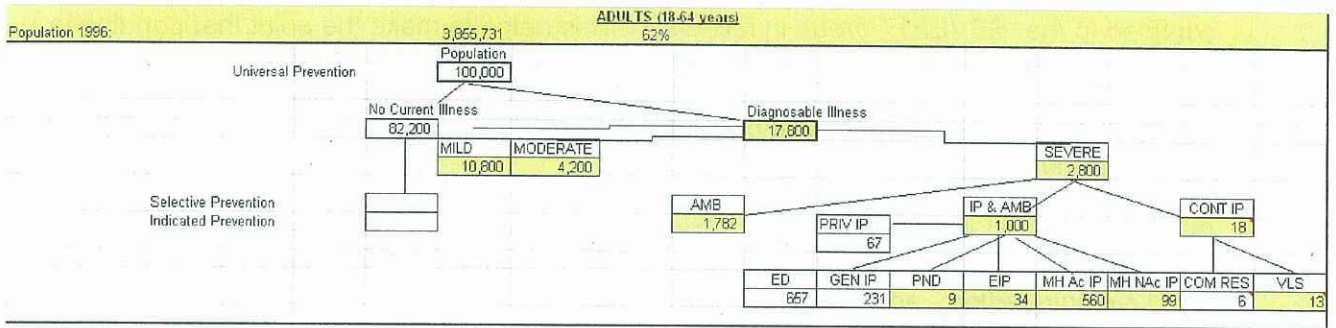
Overall, the benefit was not so much in terms of specific planning calculations, but the realisation (for example) that the predicted need for the more specialised services was too small to operate an economic service in particular regions; that there were discrepancies between regions in existing resources (shown “objectively” on the same basis, rather than by advocates for one region or another); and that for a given level of resources there was at least a common starting point for discussing what trade-offs might be necessary. Finally, the model highlighted the ways in which alternative care plans might be developed to address the same need, and how these would feed into changing (say) the mix between ambulatory care and inpatient services, partnerships with Non Government Organisations, and the like.

4. Information Planning, Research

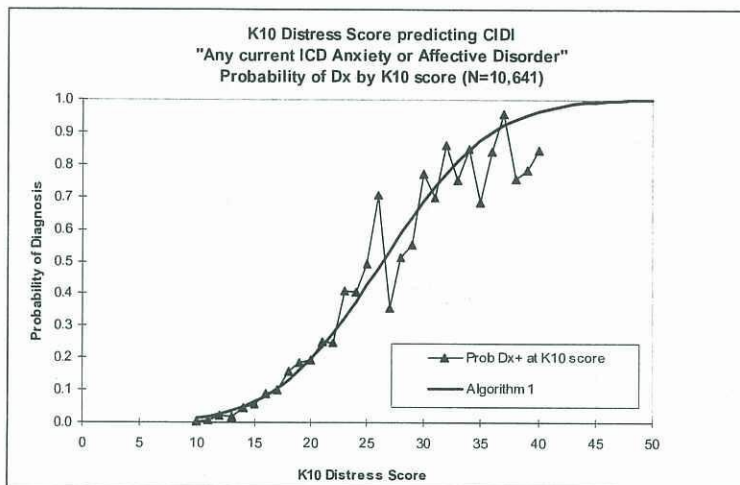
One of the reasons why constructing MH-CCP was difficult is that there is little consistency between population and service data collections. Thus, simply by specifying what is needed to build such a model, MH-CCP has helped to set an agenda for improving mental health information. A similar point is made in a planning document for the US Mental Health Statistics Improvement Program (see www.mhmhsip.org):

"The domains of information to be collected from general population surveys may vary depending on the desired level of planning and the availability of resources to conduct the survey. The minimum domain requirements are (1) mental health status questions that directly, or through established algorithms, provide information on diagnoses, symptoms, and functional status, and (2) respondent demographic and location information. ***Both the mental health status and demographic information should correspond directly to data elements collected by treatment providers during their assessments of consumers.*** In this way, the same questions asked in the surveys can be used to collect data for assessment, treatment planning, and progress monitoring for individual consumers, and be aggregated and compared with estimates of unmet demand and need calculated from survey results." [emphasis added].

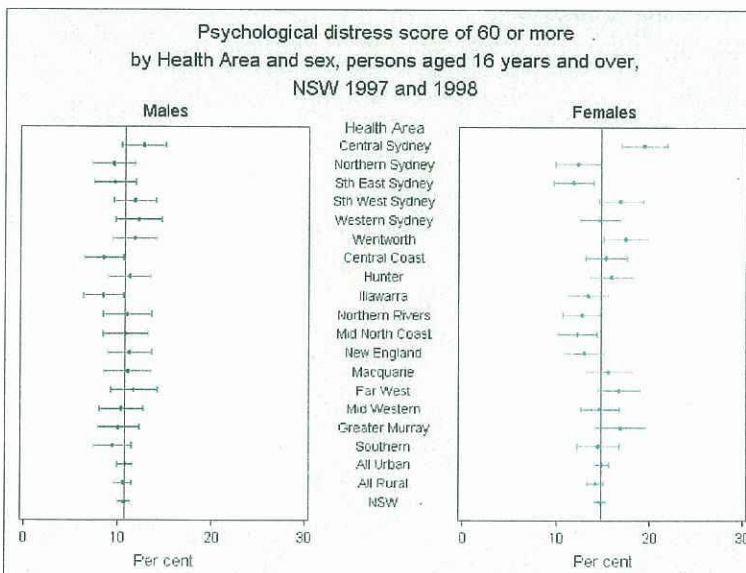
Example: NSW Health Survey measures of MH-CCP parameters.



Since 1997 NSW has conducted a telephone survey that takes the same size of sample in each of the 17 geographic Area Health Services in the State. From 2002 this has become a continuous all-age health survey. Within it, there is a measure of “psychological distress”, the Kessler K10, which is known to correlate strongly with diagnoses of anxiety and or depression (see below).



From the results in the figure at left, we can reasonably conclude that the K10 data serves as a good index of the prevalence of anxiety/ depressive disorder. These disorders in turn are the bulk of those characterised as “MILD” (10.8%) and “MODERATE” (4.2%) severity in the MH-CCP model.



The results at left are from a sample of 2,000 people in each Area Health Service in NSW, and they indicate two things:

- Variation around the state average is small
- Some regions differ significantly.

It is easy to apply these relativities as an index for the “MILD” and “MODERATE” groups in MH-CCP, to address local variation in the relevant need.

This process would have the effect of slightly increasing the need for ambulatory care staff in some regions relative to others.

It would not have an impact on estimated need for inpatient services, since these are confined to the "SEVERE" group in MH-CCP. This helps to make the point that population survey data is of most value in estimating what might be called the "primary care" need in mental health services. It also shows the importance of longitudinal client-centred service data to estimate the need for the most expensive services, which is driven by rarer and more disabling illnesses.

Finally, the model demonstrates that knowing the prevalence of illness alone is not enough. We need to know the prevalence of such things as "illness needing acute inpatient services in a 12-month period", and for that we need service data.

Conclusions

It is important to stress that it is not very useful to argue whether the MH-CCP model is "right" or "wrong" in total. MH-CCP simply provides ways of working through different scenarios. Its main virtue is that it has the right structure to do so in a way that is transparent to those most directly concerned. There are many models that try to arrive at estimates of "need" in other ways. They are often based on complex statistical calculations that tend to disguise the fact that the underlying assumption may be as simple as "utilisation = need", and they often beg the question of "need for what?" by expressing it in dollars.

MH-CCP puts all its cards on the table. One may dispute the epidemiology, the care plans, the usage parameters, or other key features. However, it is not possible to do this in the abstract. It has to be done in a quantified way, and the basic structure of MH-CCP is clearly the right "shape" for working through the implications of any set of assumptions. That is, whatever the population may be, there will be people with various needs, and to meet those needs there must be a plan of care, and that care plan must use resources such as people with various skills who work certain hours, and beds of various types that must be attended and have certain operating parameters and costs.

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