A critical analysis of the data presented in the KMPT Acute service review and redesign 2012

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Stephen Allan

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Stephen Allan

PSSRU

University of Kent

Introduction

NHS Kent and Medway and Kent and Medway NHS and Social Care Partnership Trust (KMPT) have undertaken a review of inpatient mental health services across Kent and Medway, recognising the need to improve the quality of care received by acute mental health inpatients, both in terms of the safety and outcomes of the patients, and promote equality of access to high quality mental health wards.

The Acute service review and redesign 2012 (hereafter referred to as 'the review') developed proposals to improve acute mental health care in Kent and Medway. The proposals were to: develop three Centres of Excellence for acute inpatients; strengthen the Crisis Resolution Home Treatment (CRHT) teams; expand the Psychiatric Intensive Care Outreach (PICO) service to cover the whole of Kent and Medway; and consolidate psychiatric intensive care in to one place. The results of these proposals would be a reduction in the number of acute inpatient beds from 160 to 150 and in the number of Psychiatric Intensive Care Unit (PICU) beds from 20 to 12, but that there would be a reallocation of beds around the county to create more equality in availability.

The proposals were based on an analysis of acute inpatient mental health services data which found that: there had been a reduction in demand for acute inpatient beds over the last four years; too few beds in East Kent leading to out-of-area placements; concerns over the quality of the A Block at Medway Maritime Hospital which provides acute inpatient care for Medway and Swale; and there is no current PICO service in East Kent.

Concerns have been raised by members of the public at the consultation stage about the validity of the data used. This paper analyses the data presented in the review asking if it is robust and if it can be used to inform a decision on proposals for acute mental health services in Kent and Medway. Only the quality of the data is assessed in this note; in no way does it make inferences as to the suitability of the proposals outlined in the original review. Where possible, the note discusses many potential issues with the data presentation where possible. Indeed, some of the concerns raised may be seen as inconsequential, but in so doing this critique draws attention to the relevant data (or lack thereof) so that decisions can then be made as to which, if any, issues are to be addressed.

The conclusion of this critique is that, whilst there is a lot of data presented to try and be as open as possible, the review does not make the confidence levels attached to the data clear. In addition, there does seem to be some data missing from the review. Of particular concern are the acute ward stay days trend forecasts which use a simple regression on 4 observations for the overall totals in Kent to estimate a time trend. The low number of observations is worrying, and this is especially so as data would seem to be available for at least 2 further years (which would not solve the small sample size issues). In addition, no account is taken of socio-economic factors, which seems remiss.

This note shows that extending the regression analysis for Kent and Medway as a whole to include all Local Authorities' demand data and including socio-economic factors reduces the

downward trend in acute ward stay days, but even this has a wide range of confidence. The positive aspect of this additional analysis is that projected demand would still seem to fall under the proposed 150 acute inpatient bed supply, even before accounting for the potential fall in demand from the use of PICO in East Kent. Overall, whilst the issues raised do not necessarily indicate a problem with the suggested proposals themselves, they do call into question the voracity with which the data in the original review was presented and therefore reduce the likelihood that the data can be used to inform a decision on proposals for acute mental health services in Kent and Medway.

This note continues with a review of the issues found in the data presented in the review. The third section then takes a more detailed look into the issues surrounding the trend forecasts in acute inpatient demand, and then a conclusion follows.

Issues in the presentation of the data in the review

The review presents a lot of data to present a case for the proposed changes to the acute mental health care service in Kent and Medway. As such, the effort to put this data in to the review is commendable, as it does not shy away from presenting data that is not necessarily ideal to the purpose of the proposals in the review. However, there are a number of issues with the data presented (or not) in the review. This section goes on to outline these issues. Some of the concerns raised would appear to be potentially important issues with the data, but other concerns are (likely) minor issues. Taken individually, these latter issues probably do not leave any cause for concern; however, when taken as a whole, they do bring in to question the level of clarity in the data on which the proposals have been based. As to the former issues, they raise serious doubts about the validity and robustness of the data.

Each of the following is an issue with the data presentation in the review:

1. Forecasts of future acute inpatient bed demand are based on extremely small samples (four observations for each LA and for Kent as a whole).
2. No allowance for projected population change.
3. No use of socio-economic characteristics.
4. Data is not shown for 2006/07 and 2007/08.
5. More clarity in discussing Appendix H.
6. Total number of beds required in Appendix C.
7. No data on external adult acute bed use.
8. Bed occupancy rates and average length of stay.
9. Total number of acute service users.
10. Potential lack of clarity in figure 2.
11. Appendix A does not show any data on CRHT use.
12. Footnote 6 does not show the data for the demand for CRHT in KMPT.

The first issue is at the heart of the whole review, as the future forecasts are used to explain the appropriateness of the proposed reduction in acute inpatient beds. Extremely small samples mean that the confidence which can be assigned to the statistical results is extremely small. This is not to say that the forecasts are incorrect (although it is more likely they are incorrect given they are based on very weak data because of the sample size) but the review should have made clear the weakness of this analysis and presented alternative scenarios (such as using the average of the previous four years like that used in Appendix G when looking at PICU demand). In section III, this note goes into more detail on the weak level of confidence that can be associated with the forecasts presented in the review, and in addition some robustness checks to these forecasts are calculated, which show that a range in the demand forecasts would have been appropriate.

Appendix C of the review describes the process used in estimating future demand for acute inpatient beds. The review does not ignore potential population change completely, as it is used as one of the reasons why the final reduction in supply will be 18 beds as opposed to the projected 32 bed decrease in demand. However, this assumes that the projected bed demand is correct, and, as is discussed in the previous paragraph and section III that follows, that is not likely to be the case.

It would have been useful if the review had actually outlined the effect of population change on bed demand, something this critique now shows with a mathematical example. This is achieved using the figures cited in the review and assuming that the ONS projection of a 3.6% population increase by 2020 is correct. The review (Page 6) assumes around 12,000 people in Kent and Medway have a severe complex and enduring mental health problem, of which there were some 3,790 service users in 2011/12. So 31.7% of those with a severe complex and enduring mental health problem were service users of the acute service in 2011/12. Of the 3,790 service users, 1,555 (41.0%) were treated in acute inpatient wards. Total ward days for 2011/12 (Appendices B and G) were 58716 stay days (52522 acute inpatient and 6194 PICU). So the average length of stay of those treated in acute inpatient wards was 37.8 days.[1] 12,000 people with a severe complex and enduring mental health problem out of a 2010 projected total population of 1,680,500 (Appendix D) is 0.00714% of the population. Assuming that the 3.6% increase in working age population in Kent and Medway is correct, there will be 42,300 additional working age individuals in 2020, of which approximately 302 (0.00714%) will have a severe complex and enduring mental health problem. Of these, approximately 95 (31.7%) people will be service users of the acute service in 2020. Using the 2011/12 figures still, 39 (41.0%) of these will be treated in acute inpatient wards for a total number of stay days of 1474, which equates to 4 additional beds a year.

This, of course, is just one example, and the proposed changes to acute mental health services may well reduce both the percentage of people using acute inpatient wards as well as the average length of stay. So a range of forecasts on increased acute inpatient bed demand may

[1] The difference between this average length of stay and the figures quoted in the review are discussed later in this section. Using the stated average from the review of 29 days for 2011/12 gives an increase in demand from population growth of 3 additional beds a year by 2020.

have been more realistic. For example, assuming only 25% of acute service users go on to stay at acute inpatient wards, and only for an average of 23 days (the PCT target mentioned in the review), 1.5 extra beds would be required by 2020. These same figures with a population increase of only 2% would suggest 0.8 extra beds would be used per year. A range of 1-4 extra beds per year being required by population change seems likely, and we can add this to the projected demand estimates in section III to assess whether the proposed 150 bed supply would be adequate to cover demand in future years.

Appendix C also discusses the use of socio-economic factors in the estimation of acute inpatient demand forecasts. The review refers to Appendix E as evidence of socio-economic factors not playing a role in acute inpatient demand. This shows the rate of ward stay days per 100,000 population, and this does seem to show little relationship between population and acute inpatient demand. However, there is an extensive literature that points to socio-economic factors being very important in determining mental health service demand, much of it using UK data. For example, Barr *et al.* (2012) link increased suicides to the recent economic downturn, Brown *et al.* (2005) find a lack of psychological wellbeing is linked to increased debt levels, and McKee-Ryan *et al*. (2005) found that unemployment of an individual was linked to lower psychological wellbeing using meta-analysis. The Audit Commission (2010) also found that admission rates were linked to several socio-economic characteristics such as race and employment status, and this briefing is included as a footnote in the review itself. In the section that follows, socio-economic factors are included as control factors in robustness checks for the forecasts of future acute inpatient demand. The analysis shows that these factors are significant in affecting demand, so the review's non-use of socio-economic factors in calculating future acute inpatient bed demand seems incorrect.

An additional issue is that data is not shown for 2006/07 and 2007/08. Figure 3 and Appendix F seem to indicate that data on mental health services is available for both of these financial years. Unless there is a clear reason as to why the data could not be used, which should have been made clear in the review if so, then, at best, this seems like an oversight to not use this data and, at worst, this could appear like a deliberate manipulation of the data to fit the outcomes sort after in the review. Additionally, more data would certainly be useful in forecasting the future demand of acute inpatient stay days (Issue 1), although having six observations for each LA instead of four would not solve the small sample size issue by itself.

Appendix H shows the day-by-day demand for acute inpatient beds.[2] While the data shows that Kent and Medway would only have been undersupplied on 5 days over the financial year 2011/12, it also shows that demand would have been above the +7 confidence interval (146 beds) for 74 days out of the year (approximately), about 20% of the year for 2011/12, which was a year of lower demand compared to previous years. The more important number is the proposed 150 acute inpatient beds; how many days of the financial year 2011/12 was demand above 150 beds? The review should have made this clear for clarification purposes if nothing else.

[2] The titles of these graphs would appear to be incorrect given the data presented.

Linked to this last issue is issue 6, which is that Appendix C (Page 35) of the review suggests that, to cover peak demand and seasonality, 160 acute inpatient beds (plus 12 PICU beds) would be required to cover the average level of demand from 2011/12 of 151 beds (plus 10 PICU beds). Yet the proposed changes have only 150 acute inpatient beds plus (12 PICU beds). Again, relying on the forecasts for future bed demand is the only statistical explanation given as to why the 150 bed proposal would be plausible. A more rigorous statistical argument is required as to why this would be sufficient.

Following on from this, the use of external adult acute beds by KMPT is also an issue for which there seems a lack of data. The review does refer to the placement of acute inpatients in other PCTs for 2011/12 in Appendix C (page 35) but does not provide any further data. If this data is available it should be presented and discussed fully since external adult acute bed use could explain falling acute inpatient demand within Kent and Medway. This is potentially concerning as the KMPT Financial Performance Report (April 2012) outlined that spending on acute beds out-of-area amounted to £0.14m in 2011/12 but that for the first month of 2012/13 the spend was £0.11m.

The final issues should be seen as more minor compared to the first 7. Each issue is of itself a small area where the review could have perhaps been a little clearer. The first is that occupancy rates and average length of stay are not presented in the data. The occupancy rate for 2011/12 is discussed in Appendix C, which also provides some discussion of the seasonality issue and what is expected in the future for average occupancy rates. Given occupancy rates are usually an important measure of acute mental health services, it would have proven useful – even given the seasonality issues that means the average is not a very accurate representation of usage at times of peak demand – if the review had included them. The review also states that the average stay reduced from 32 to 29 days from 2009/10 to 2011/12. This seems at odds with the data provided in the review, which gives an average length of stay of 37.8 days.[3] This difference is most likely caused by multiple stays by different individuals, but presentation of this data would prevent any confusion. Overall, inclusion of data for occupancy rates and average length of stay could have been used as an affirmation that improvements had already been started, or that improvements needed to be made, in the acute mental health service provision in Kent and Medway.

The next issue is found on page 6 of the review, where it is stated that there were "*approximately 3000 users of the acute service in 2011-12*". The very next paragraph shows that this figure is for Kent alone, whereas with Medway combined the number of acute service users is almost 3800. An additional issue is found in figure 2 of the review (page 9), which shows that in 2008/09 acute bed demand was (approximately) 225 beds but Appendix B states that acute bed demand was 207 beds in 2008/09. The same overstatement of demand can be said for all the subsequent years in the figure – suggesting perhaps that PICU beds are included in the data for acute beds in figure 2.

[3] See the calculations made earlier in this section.

There are two further issues in the review. Page 8 of the review refers to Appendix A as providing evidence of the increase in CRHT use in the last five years but this is not the case as there is no data provided. This data is however shown graphically in figure 3, but it would be useful to have the actual data as well. Finally, footnote 6 appears to be misplaced, as the briefing referred to does not appear to show information on CRHT demand within KMPT by locality or time of day.

Analysing acute inpatient bed demand

This section outlines the area of the data presentation that potentially raises the largest question in terms of the validity of the data. The review presented (in Appendix B) a four year history of the demand for acute inpatient beds by Local Authority within Kent and Medway, and also presented trend forecasts of acute ward stay days for 2012/13 and 2013/2014. Appendix C discussed the approach used in the analysis of the demand for acute inpatient beds in Kent and Medway. However, as the previous section outlined, there are two key concerns with the trend forecasts for acute inpatient demand for the next two financial years:

1) The trend forecasts are based on extremely small samples (4 observations).
2) The trend forecasts do not take into account socio-economic characteristics.

Given these two key concerns, it is unlikely that the trend forecasts are accurate. It is possible that the forecasts are indeed correct, but in this (unlikely) scenario the review has failed to provide any clarity to the potential pitfalls of the projections presented. This section first analyses the approach to the trend forecast itself before going on to discuss how the confidence that is put in these figures seems misplaced. Additional regressions go on to show that the estimated future acute inpatient demand presented in the review would seem to be a very positive scenario, but even under less positive scenarios future acute inpatient bed demand still seems to fall under the new proposed supply of 150 beds.

Table 1 presents a snapshot of Appendix B from the review. We use Ashford and Canterbury as examples of the LAs (the discussion that follows could apply to any LA). The figures in red are the trend forecast figures and are estimated from a simple regression for each LA:

$$D = a + bY + e \tag{1}$$

Where D is the demand in terms of stay days, a is a constant, Y is the year (2008/09 takes the value 1, 2009/10 equals 2, and so on), and e is a random error term. The coefficient b is the time trend that shows how much demand changes from year to year. The review uses the 4 observations of demand presented in Appendix B to perform regressions of equation (1) for each LA. For Kent as a whole, the same regression is used using the total demand figures for

each year instead, so again using only 4 observations. The output of these regressions for the example LAs and Kent and Medway as a whole is presented in Table 2 below.

Table 1: Inpatient bed demand for selected LAs and Kent and Medway

LA	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Ashford	3771	4918	4325	2241	2518	2000
Canterbury	9195	7692	5778	5012	3304	1857
Kent and Medway	75398	71699	66932	52522	48289	40950

The coefficients from the regressions are used in the review to estimate future acute inpatient demand. So, for example, in Ashford in the year 2012/13 (year 5) the projected demand is equal to 5109.5 + (-518.3*5) = 2518 stay days, and in Kent overall in 2013/14 (year 6) the projected demand is equal to 84986.5 + (-7339.5*6) = 40949.5 stay days.

The major problem with these calculations is that they are based on so few observations, and as such this means that the level of confidence which these figures come with is extremely wide. The 95% confidence intervals for the coefficient b (the time trend) for Ashford is -2717.7 to 1681.1, for Canterbury is -2136.5 to -756.1 and for Kent as a whole is -15079.2 to 400.2. Because of so few observations the statistical certainty that can be placed on the estimated time trends is very limited. Also, positive values for the coefficient b would indicate demand would *increase* over time, and for both Ashford and Kent this cannot be ruled out.

Table 2: Regression results to estimate future inpatient bed demand

Coefficient	Ashford	Canterbury	Kent and Medway
Constant	5109.5*	10535***	84986.5***
Year	-518.3	-1446.3***	-7339.5*
n	4	4	4

Note: *, ** and *** indicates significance at the 10%, 5% and 1% levels respectively.

Note that this does not necessarily suggest that the forecasts presented in Appendix B of the review are incorrect. However, the forecasts presented do lack any precision. For example, the downward trend over time found for Ashford is not significantly different from zero (suggesting that there is no time trend of acute inpatient demand and that it would stay constant from year to year).

For each LA there is little more precision with which a forecast can be estimated other than to increase the number of data observations as suggested in the previous section, but note that this would not solve the small sample issues which this analysis suffers from. What the review neglected to do was to examine all the LA figures combined together to improve the analysis for Kent overall. This would give 52 observations on acute inpatient demand across 13 LAs in Kent and Medway. More specifically, one would estimate the following regression:

(2) $$D_i = a + bY_i + e_i$$

The variables in equation (2) are as described in equation (1), except that now we are looking at all LAs combined, hence the subscript i to represent each LA, where $i = 1,2 \ldots ,13$. This section now goes on to analyse the different outcomes on forecasted acute inpatient demand when all the LA data is combined. Table 3 presents the regression results for Kent under four different scenarios: 1) the original analysis of the review; 2) where all 52 LA data observations of stay days are included in the regression of stay days on year alone; 3) where additional socio-economic variables are included in the regression; and 4) where a binary variable for West Kent is included.

Regression 2 is very much the same as the analysis presented in the review and re-estimated here in regression 1. However, the difference is that the number of observations is greater and so a little more certainty can be assigned to this analysis. As noted in section II, the arguments presented in Appendix C for the non-use of socio-economic characteristics in estimating acute inpatient demand seem weak. This note includes the following socio-economic characteristics as variables under the third regression scenario: population of the LA and the number of people claiming income support in the LA.[4] In addition, the fourth regression includes a binary variable taking the value of 1 for West Kent and 0 for East Kent. The use of this variable was to try and capture the effect of the PICO service on acute inpatient demand in West Kent but could easily capture some other difference between West Kent and East Kent.

The results, presented in Table 3, show the variation that can be found in the analysis because of looking at so few observations. In column 1, the original regression for Kent from the review, the time trend is significant at 10%, but in column 2, where all the data available for LAs in Kent over the last 4 years is included, the time trend is not significantly different to zero. However, when including additional control variables in the combined regression there is evidence that the time trend is negative and significantly different from zero.

The inclusion of socio-economic variables is validated as they have a significant positive effect on acute inpatient demand. The effect of population on bed demand is only significant, and then only at 10%, when the West Kent control variable is included (column 4). However, the number of income support claimants has a highly significant effect on influencing acute inpatient bed demand whether or not the West Kent variable is included. The reviews decision not to include socio-economic variables in the calculation of future acute inpatient bed demand appears to have been incorrect.

[4] For 2008/09, 2009/10 and 2010/11 data on population and income support claimants from 2008, 2009 and 2010 were used, respectively. 2010 is the last year for which data is currently available and so observations in each LA for 2011/12 have the same values for population and income support claimants as the observations for each LA in 2010/11.

Table 3: Various regression results

Model	1 (as the review)	2 (Combined LAs)	3 (4 + socio-economic controls)	4 (3 + West Kent (PICO) control)
Constant	84986.5***	6214.2***	255.8	464.2
Year	-7339.5*	-501.2	-359.4*	-387.2**
Population/1000	-	-	9.4	17.3*
Income Support Claimants	-	-	1.3***	1.1***
West Kent	-	-	-	-838.7*
N	4	52	52	52
95% Confidence	-15079.2	-1203.3	-736.2	-730.6
Interval for b	400.2	200.8	17.4	-43.9
2012/13 stay days	48289	48207	52813	51908
2012/13 beds	**132**	**132**	**145**	**142**
2013/14 stay days	40950	41688	48141	46874
2013/14 beds	**112**	**114**	**132**	**128**

Note: *, ** and *** indicate significance at the 10%, 5% and 1% levels respectively.

Interestingly, the West Kent variable is significant and negatively impacts on acute inpatient bed demand. Assuming that there are no other differences between West Kent and East Kent other than the PICO service, the results in column 4 suggest that PICO services reduce acute inpatient bed demand for a LA with the service by 839 days a year, or 2.3 beds a year. Introducing a PICO service in East Kent could therefore reduce acute inpatient demand by up to 14 beds a year.[5]

The table also presents the estimated forecast for future demand for the next two financial years. For the second column this is calculated in a similar manner to the first shown previously in the section, with the estimated demand for acute inpatient beds for 2012/13 for each LA being equal to 6124.2 + (-501.2*5) = 3708, and therefore the overall demand for Kent and Medway is equal to 3708*13 (the number of LAs in Kent and Medway) = 48206.6. Note the main downside of putting all the observations for every LA together means that it is assumed that every LA will have the same demand, which is obviously not a very realistic situation.

For the final two columns, including additional variables allows acute inpatient demand to be calculated for the 'average' LA. So for example, the fourth column suggests that bed demand is equal to: 464.2 + (-387.2*Year) + (17.3*Population/1000) + (1.1*Income Support Claimants) + (-838.7*West Kent). Using the mean values of the control variables gives acute inpatient demand for 2012/13 equal to 3993 for the 'average' LA in Kent and Medway, and therefore total inpatient demand is equal to 51908 (3993*13).

These additional regressions may themselves not be correct as they too give a wide range of confidence as to the exact value of the downward time trend, as shown by the confidence

[5] Note that this variable may capture some other difference in the delivery of acute mental health services between West Kent and East Kent, and in addition PICO services will affect PICU bed demand (and therefore in turn could increase acute inpatient demand), the demand for which are not included in the regressions. Therefore, the projections of bed demand presented later in the section do not explicitly take into account a potential fall in acute inpatient bed demand from a PICO service being introduced in East Kent as it could be misleading.

intervals for the coefficient b. Also, given the data, time-series analysis could be used to further refine the results, but this is beyond the scope of this current critique. However, the point that this section makes is that, at the very least, a discussion of the weakness of the estimates of future inpatient bed demand should have been presented in the review, and, more likely, additional estimates should have been derived to give some range of confidence of the likely bed demand in future years. The estimates derived above suggest a range of acute inpatient bed demand from 132-145 for 2012/13 and 112-132 for 2013/14. Adding in a range would have increased the openness of the review and not necessarily weakened it, as one of the overarching aims of KMPT is to reduce demand still further. However, it is also noteworthy that 7 extra acute inpatient beds will be required because of the fall in the number of PICU beds. Also, assuming the projected population change occurs proportionally over the 10 years, at the upper end of the demand increase due to population change presented in the previous section, we would expect a maximum of 1 extra bed demanded over each of these two years. These additional projections give a final range of acute inpatient bed demand of:

2012/13: 140 – 153

2013/14: 120 – 140

Only in one specification and for one year (estimates from column 3 for 2012/13) is the projected demand above the proposed 150 bed supply, and the preferred specification (the estimates from column 4) suggest a demand of 150 and 136 beds for 2012/13 and 2013/14 respectively. In addition to this, the introduction of a PICO service in East Kent should potentially lower acute inpatient bed demand. Therefore, this additional analysis presents a generally positive case that the estimated acute inpatient bed demand will be below the proposed 150 bed supply.[6]

Naturally, there will be some lower 'base' level in the demand for acute patient beds; whether or not this level has been reached for Kent and Medway is open to question. Over the short term one could expect that demand could be reduced below the 'base' level, but on average the 'base' would be the lower limit of bed demand that could be achieved. It is not for this critique to suggest what is achievable, but it should be noted that the marginal returns of reducing bed demand towards this 'base' level will be diminishing as the cost of lowering demand for acute inpatient beds by one unit will escalate the closer to the 'base' level you get.

Conclusions

A number of issues have been outlined in this critique, some seemingly of more cause for concern than others. Using regression analysis, this note has shown that, whilst the downward trend for demand for acute inpatient beds is not necessarily incorrect, there is a wide range of possible outcomes for the trend in demand given the lack of data used in the analysis. In

[6] The suitability of what this means for occupancy rates and the potential use of beds external to the county at times of peak demand is not discussed here but may require consideration.

addition, not controlling for socio-economic factors has almost certainly weakened the analysis used in the review. A positive outcome of the additional analysis from this critique is that, even after controlling for socio-economic factors, projected population increases and the extra acute inpatient beds required because of cutting the number of PICU beds, the projected range for future acute inpatient bed demand is usually lower than proposed supply of 150 beds for Kent and Medway.

In addition to the major concern for forecasted acute inpatient bed demand, there are issues with the presentation of the data and of data not presented which would be of use to be fully transparent in the decision making process towards changes in acute inpatient care in Kent and Medway. Some of these issues are potentially not very burdensome. For instance, it would be useful for the review to make clear just how many days of the financial year 2011/12 that acute inpatient demand was above the proposed available 150 beds. These suggestions are made so as to give as much information as possible since KMPT are committed to continuing to reduce inpatient demand with increased use of CRHT and introducing PICO in East Kent. However, some of the remaining issues could also potentially be of critical concern, in particular the potential non-use of available data on acute inpatient bed demand and spending on acute beds out-of-area.

The main conclusion to be drawn from this note is that the review does not seem to have given a fair and accurate representation of the potential weaknesses in the analysis of the data. The data does not appear to be very robust and so calls into question whether it can be used to inform a decision on acute mental health services in Kent and Medway. This critique does not make any judgement as to the effect of the apparent weaknesses in the data; it is left to be decided as to whether or not any of the issues raised are worthy of leading to a re-assessment of the proposals.

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