ISSUES

On 31 October 2014, the Assistant Minister for Health, Senator the Hon Fiona Nash, announced major changes to workforce classification systems, which included adopting the Modified Monash Model (MMM).

While the underlying structure of the MMM has been well publicised, and is provided again in the background below, there are a number of parameters which will affect how the MMM will be implemented as a remoteness classification system. These are listed below, with the Department’s initial position:

a) The size of buffer zones to be placed around large towns.

The model uses buffers around towns (excluding towns in Remote and Very Remote classifications). There is a road-distance buffer of 20km around towns with greater than 50,000 persons, 15km around towns with 15,000 to 50,000 persons and 10km around towns with 5,000 to 15,000 persons.

b) Whether towns near large centres in RA 1 should have their classification affected by the large town.

All towns in RA 1, 2 and 3 have buffer zones applied, and the MMM classifications are phrased such that areas in RA 2 and RA 3 will be classified according to nearby town size regardless of the towns RA. For example:

MM 2: Areas in RA 2 and RA 3 that are in or within 20km road distance of a town with more than 50,000.

In particular, this means that MM2 contains both towns within 20km of Sydney and towns within 20km of Hobart.

c) Whether islands should be automatically considered as being in the “most remote” classification.

All islands with a significant population, which are distinguished from the Australian mainland in the ABS geographies, and which are more than 5km off-shore have been classed as MM 7.

d) On what time-frame should the MMM be updated.

Updating will occur after each update by the ABS of their Remoteness Areas classification. As this requires an update of the ARIA+ index, towns of population greater than 5,000 will be the ARIA+ Service Centres A-D, and the ARIA+ road distance calculations will be used for determining buffer zones around these towns.

The Technical Working Group is asked to consider the Department’s position on these issues and either endorse them, or provide alternative recommendations to resolving the issues.

Further details around each implementation issue, and the reasoning behind the Department’s position, is presented after the background.
BACKGROUND

The Modified Monash Model is based on the paper: *Who should receive recruitment and retention incentives? Improved targeting of rural doctors using medical workforce data*, authored by John Humphreys, *et al.* This paper demonstrated the link between town size and key workforce indicators.

The paper was a feature of the 2012 Senate Inquiry: *The factors affecting the supply of health services and medical professionals in rural areas*, and was supported by the committee that recommended the methodology and data utilised by Professor Humphreys and his colleagues be incorporated into a new remotesness classification scheme.

The paper also featured in the consultations that informed the 2013 Review of Australian Government Health Workforce Programs (the Review). This review was conducted by an independent external expert, appointed by the Government of the day.

As noted in the review, the stakeholder consultations around the use of the John Humphreys *et al.* methodology noted that even the largest towns in Remote and Very Remote Australia, as defined by the Australian Bureau of Statistics (ABS), still faced challenges due to the tyranny of distance.

This resulted in the Review recommending the Modified Monash Model, which makes use of the ABS classification Australian Standard Geographical System – Remoteness Area (RA), and contains seven remoteness classifications to be applied to towns:

- **MM 1**: RA 1;
- **MM 2**: RA 2 and RA 3 with population > 50,000;
- **MM 3**: RA 2 and RA 3 with population 15,000 to 50,000;
- **MM 4**: RA 2 and RA 3 with population 5,000 to 15,000;
- **MM 5**: RA 2 and RA 3 with population < 5,000;
- **MM 6**: RA 4;
- **MM 7**: RA 5.

The Review also noted that a number of implementation issues remained.

Based on the Review’s recommendations, the Department established the Remoteness Classification Technical Working Group (RCTWG). This group met in July 2013, at which it was agreed that “buffer zones” around towns in RA 2 and RA 3 with populations greater than 5,000 should be considered. These buffer zones would mean that small towns near large ones (e.g., Kuranda near Cairns) would inherit the larger town’s MM classification. This would ensure that MM 5 would only contain small, isolated towns in RA 2 and RA 3.

The group also decided that in determining the buffer zones, methods that should be explored included road distance, road quality and travel times. Furthermore, a variety of buffer zone sizes should be considered.

Since that time, the Department has directed a significant amount of resources to developing approaches to resolving the implementation issues.

**A: The size of buffer zones to be placed around large towns.**

The Department views the use of buffer zones as being a critical component of the successful use of the MMM. This is because larger Australian towns generally have small “satellite” towns on their boundaries. Without the use of buffer zones, these satellite towns would be

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1. The *Australian Journal of Rural Health* (2012) 20, 3-10
considered as being in a “more remote” category despite their close proximity to the larger centre.

For instance, the distance between the town borders of Kuranda and Cairns is less than 5kms. If Kuranda, population 2,400, was treated on its own merits it would be considered MM 5, a category that also contains Hay, Gundagai and Port Douglas. Yet the population in Kuranda would not have difficulty in obtaining services from Cairns such as: finding a specialist, major hospital treatment at a location within easy reach of family support, allied health services and all the other services found in large towns. The same could not be said of other towns in MM 5.

The Department explored a number of approaches to building buffer zones around towns greater than 5,000 persons. Internally, buffer zones built on the basis of “as the crow flies” were investigated, and found to raise significant issues in being overly inclusive. Examples of this included buffer zones reaching over lakes and bays. However, the models were useful in giving initial estimates around the impact of using buffer zones.

The Department also investigated whether it was possible to use travel time or road quality as the basis for constructing buffers. However, expert advice provided determined that there was no available data that provides complete coverage on road quality and travel time. Moreover, in available road networks, this information tends to be missing precisely where it’s needed most – the minor and local roads of rural and remote Australia.

The Department did obtain road distance buffers from the Australian Population and Migration Research Centre (APMRC), which also develop the ARIA+ index. The buffers provided were 10km, 15km and 20km, and were then converted to the ABS geography in order to ensure the MMM could be integrated with other spatial overlays, such as the Socio-economic Index for Areas (SEIFA).

After investigation, the Department found that the buffer structure that produced the most intuitive results was 20km around towns with greater than 50,000 persons, 15km around towns with 15,000 to 50,000 persons and 10km around towns with 5,000 to 15,000 persons.

This is in-line with geographical theories of spatial interactions, which confirm the expectation that the larger a city, the larger footprint the city has on the area around it in terms of service provision.

B. Whether towns near large centres in RA 1 should have their classification affected by the large centre.

An issue that was not overly discussed previously in consultations, but became very apparent through the work on the MMM, was that of small towns near cities in RA 1.

An example of this is Picton near Sydney, which has a population of 3,300. As it is not near any large town in RA 2 and RA 3, if RA 1 is to be disregarded then Picton would be considered as MM 5. Yet, as with Kuranda near Cairns, the range of services in Sydney that are reasonably available to residents of Picton is much larger than the range of services available to the population of other MM 5 towns such as Hay and Gundagai.

Furthermore, if RA 1 is not considered, then Picton’s rating of MM 5 would be compared to towns such as:

• Kuranda, QLD (pop 2,386) which would be MM 2 due to its proximity to Cairns;
• Creswick, Vic (pop 2,642) which would be MM 2 due to its proximity to Ballarat;
• Margate, Tas (pop 2,220) which would be MM 2 due to its proximity to Hobart; and
• Howard Springs, NT (pop 694) which would be MM 2 due to its proximity to Darwin.
For these reasons, the Department recommends that cities and towns in RA 1 have buffers which affect the rating of areas in RA 2 and RA 3. This is in keeping with the intention that MM 5 should only contain small, isolated towns in RA 2 and 3.

Combining this with the Department’s buffer choices, the definition of MM 2 would become:

**MM 2:** Areas in RA 2&3 that are in or within 20km road distance of a town with more than 50,000.

Note that the definition does not require the large town to be in RA 2 and RA 3, and so would include Picton as it is within 20km of Sydney.

**C: Whether islands should be automatically considered as being in the “most remote” classification.**

In general, the Department is reluctant to modify the RA system that underpins the MMM. However, a notable issue with the determination of RA has been the classification of islands (not including Tasmania). Examples include Palm Island, QLD and Wurrumiyanga on Bathurst Island, NT – both of which are RA 4, despite being a considerable distance off-shore and requiring lengthy travel time on boat/ferry to reach the mainland.

The approach to resolve this issue is to consider any island as being MM 7 if it:

- is not connected to the mainland under the ABS Statistical Area 1 geography;
- is more than 5km offshore.

**D: On what time-frame should the MMM be updated.**

The Department recommends that the MMM should be updated after each update of the ABS Remoteness Areas classification (which occurs after each Census).

This approach provides stability. It also allows for the use of by-products of the ABS Remoteness Areas classification being used to update the MMM, including:

- the identification of towns greater than 5,000 as being the ARIA+ Service Centres A to D (ie Service Centres greater than 5,000 population);
- using the updated road distance calculations for the MMM buffer zones.