Improving Services Toolkit: children with long-term conditions

Guidance on use and interpretation

This toolkit is aimed at commissioners and service managers who are reviewing services for children with long-term conditions in their area. It has developed from the excel-based Disease Management Information Tool (DMIT) which is available within the overall toolkit.

The toolkit provides evidence and data which can be used to help develop strategies and business cases. It examines emergency hospital admissions for children with long-term conditions. It also looks at how long these children spend in hospital, information on whether they were admitted from A&E or by other means, and children who are admitted more than once during the period. The toolkit helps commissioners and service managers do the following:

- Examine the use of hospital services by children living in the area
- Compare rates of admissions and bed days/length of stay against geographical and non-geographical comparators
- View trends, to see whether current activity levels appear to be going up or down
- Set goals, based on activity levels in other areas
- View likely costs based on current activity levels, and gain an idea of savings that could be made if activity levels could be reduced
- Identify potential relationships between factors that may suggest areas for further investigation locally
- View variation across the country
- Find key resources to help plan and prepare for service redesign

The toolkit provides access to the following tools:

1) Reviewing children and young people's use of secondary care: Information tool
2) Charts and maps
3) Reviewing clinical management of children and young people's long term conditions: clinical audit data
4) Evidence and resources
1) Reviewing children and young people's use of secondary care: Disease Management Information Tool (DMIT)

This tool is presented as a macro-enabled excel file (*.xlsm) which you can download to your own computer. Once the file opens, you may need to select ‘Enable content’ when prompted. Guidance on how to navigate the tool is available on the first page of the spreadsheet.

The tool allows you to select your area and then generate a range of data tables and charts. These can be copied and pasted into your own documentation (please reference “National Child and Maternal Health Intelligence Network, Public Health England”). The charts show activity levels relating to emergency hospital admission for children, and also lengths of stay following admission.

Variation charts (as shown below) are displayed for a single year’s data (the most current available). They allow you to see the range of values nationally. The two horizontal lines relate to your own area (dashed line) and the comparator you selected (unbroken line).
From the charts above it can be seen that the area selected has a higher emergency admission rate than the national average, however, when comparing the area to its four ‘most similar’ areas*, the rates of emergency admissions in the area are in fact much lower than might be expected. This could suggest that the services in the area are well designed, targeting the right groups of children with long-term conditions, and monitoring outcomes appropriately.

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* Calculated taking into account a range of variables relating to deprivation, population age structure and ethnicity of the population: [http://www.rightcare.nhs.uk/index.php/commissioning-for-value/](http://www.rightcare.nhs.uk/index.php/commissioning-for-value/)
When selecting to view historical data, line chart(s) are shown, showing trends over the most recent few years. These can be used to highlight where local system changes such as service commissioning or decommissioning, a change in population or a change in staffing has resulted in a change in children’s use of acute services.

The chart above implies that something happened locally causing a sharp fall in admissions in the area before or during 2010/11. While there is a small increase and decrease in later years, these seem to follow the overall national trend, and so are less likely to relate to any specific local change relating to service provision or demand.

Metadata providing detail of all the indicators shown in the tables and charts is available from the main menu (the screen where the local area is selected). There is an option to print a full report, which opens a PDF document showing all possible charts and tables available from the tool. This may be useful as a reference document for detailed analysis.
2) Charts and maps

Using this tool you can view online charts and maps showing the relevant indicators relating to hospital activity levels for children with long-term conditions. The correlation chart view allows you to quickly see the relationship (if any) between two indicators. For example, you may know that you are in an area of high deprivation, and need to see whether deprivation is linked to longer stays in hospital for children to add to the contextual information. A guide to how to navigate this tool is provided.

The correlation chart above shows that the correlation coefficient between the two variables is 0.53, which implies a moderate positive correlation. In general, this means that areas with high levels of smoking are quite likely to have higher rates of emergency hospital admission, and areas with few women smoking in pregnancy would probably expect lower rates. This chart does not provide any information about the causes of this correlation – it may be that smoking in pregnancy itself is partially responsible for children being admitted to hospital, or that other factor(s) (such as deprivation) influences both. This tool should not be used to give evidence for the cause of any relationship.
Selecting your own area from the list of areas on the left hand side (not shown in the image above) highlights your area's point in the main panel. You can therefore see whether your area tends to fit with the overall relationship shown, or seems to be an outlier. If, for example you are an area with relatively high smoking rates but low rate of emergency admissions to hospital, it would be useful to understand why. It may be that you already have services in the area which target and successfully work with children with asthma to avoid their condition worsening. As explained above, any relationship shown on the chart does not imply causation, so should only be used to supplement existing knowledge or suggest areas for further investigation. It is also worth considering any limitations of the indicators selected, for example:

- The two datasets are not linked. In the example above, no conclusion can be drawn about whether the children admitted to hospital had mothers who smoked in pregnancy – the two indicators are independently calculated and drawn from separate sources.
- The indicators selected may have their own limitations in the context they are used. In the example, smoking in pregnancy is used as a proxy for overall adult smoking in the population, but this may not be accurate – for example particular areas may have high rates of men smoking but low rates of mothers smoking.
- Ideally, the indicators should be as close in time as reasonable: in the example above the two are both drawn from 2013/14 (one is a full financial year, one a quarterly data set). For some indicators, particularly those drawn from surveys, this may be problematic.
- Indicators based on hospital admissions may be influenced by local variation in referral and admission practices as well as variation in incidence or prevalence.
The map view allows you to view indicators on a full map of England, with area shading showing whether areas are ‘high’ or ‘low’ for the selected indicator. The maps provide a useful visual representation of geographical variation, and can be used to help identify priorities and develop business cases for service redesign. For example, the map below shows average length of stay in hospital for children following admission (darker shading indicates a higher number of days), and it is quite clear to see whether your local area is high or low (there is a facility to ‘zoom in’ and view the map at a lower level). Putting this into context alongside local clinical and experience measures will help to inform whether this is as would be expected, or if children are being discharged too early or remain in hospital when they could have been discharged earlier.
3) Evidence and resources

This section provides the two or three key documents which help explain the evidence, policy and good practice around caring for children with long-term conditions and may suggest a starting point for the next steps. Links to any other useful resources are also provided.