Manchester City Council
Report for Resolution

Report to: Manchester Health and Wellbeing Board – 23 January 2013

Subject: Health Protection in Manchester

Report of: Dr Kevin Perrett, Consultant in Public Health Medicine – Health Protection
David Regan, Director of Public Health

Summary

Health protection –the control of Infectious diseases (including healthcare associated infections) and the health effects of non-infectious environmental hazards – presents considerable challenges for our city. Manchester City Council will have important additional mandated duties to protect its population from threats to public health from 1 April 2013.

This paper briefs Manchester's Health and Wellbeing Board on key health protection issues. It describes some recent notable successes – improved vaccination rates and reduced levels of healthcare associated infections - but also makes clear some of the challenges that remain, particularly in tackling the growing incidence of TB in Manchester. The recommendations listed below are put forward to ask for the Heath and Wellbeing Board's support in tackling Manchester's key health protection challenges.

Recommendations

The Health and Wellbeing Board is asked to:

1. Note the considerable progress that has been made in Manchester in tackling some of the key health protection challenges the city faces, and some of the major challenges that remain.

2. Request that Central Manchester Clinical Commissioning Group (CCG), as the main commissioner of TB services in Manchester, work with North and South CCGs, and with the provider trusts, particularly Central Manchester University Hospitals Foundation Trust (CMFT), to ensure that service capacity is able to meet the standards of national NICE guidance (see 4.12).

3. Agree to the establishment of a Manchester Health Protection Sub-Committee reporting to the Health and Wellbeing Board. The Terms of Reference should be consistent with the outline provided in section 5 and agreed by the new sub-committee.

4. Request that the first key task of the new sub-Committee is to review what health protection plans are already in place in Manchester for the event of a public health emergency, and, in light of the current transition, advise the

Director of Public Health and other key stakeholders on what additional or revised plans may be needed. This review will also consider the operational responses to smaller outbreaks, ensure that they are sufficient and robust and clarify the respective roles of partner organisations represented on the Board (see section 6).

Board Priority(s) Addressed:

1. Getting the youngest people in our communities off to the best start
2. Educating, informing and involving the community in improving their own health and wellbeing
3. Moving more health provision into the community
4. Providing the best treatment we can to people in the right place and at the right time
5. Turning round the lives of troubled families
8. Enabling older people to keep well and live independently in their community

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Background documents (available for public inspection):

The following documents disclose important facts on which the report is based and have been relied upon in preparing the report. Copies of the background documents are available up to 4 years after the date of the meeting. If you would like a copy please contact one of the contact officers above.

‘Public Health Annual Report: Protecting the health of the people of Manchester’. Report of the Director of Public Health for Manchester. 2011, Manchester City Council and NHS Manchester.

See also various references given in footnotes in this paper.

Health Protection in Manchester: notable successes, key challenges, and health protection arrangements, particularly for potential outbreaks

1.0 Introduction and background

1.1 'Health protection' is one of three domains of public health. Infectious diseases (including healthcare associated infections) and non-infectious environmental hazards lie at the core of this relatively specialist area of public health.

1.2 Manchester has more than its share of health protection challenges. This report briefly describes notable recent successes, some of the key challenges we still need to tackle, and the evolving arrangements for protecting the health of the population of Manchester, particularly in the event of an outbreak.

1.3 Local Authorities already have statutory health protection functions and powers,[1] principally in the area of environmental health (what is often called 'traditional public health', such as ensuring good food hygiene). Following this year's 1 April transition, Manchester City Council will have important additional mandated duties to protect its population from threats to public health.[2]

1.4 The Director of Public Health has the overall lead for health protection for Manchester City Council and for the Health and Wellbeing Board. A Consultant in Public Health Medicine, Dr Kevin Perrett – the author of this report - is a specialist in health protection and leads for Public Health Manchester on the issues outlined in this report.

1.5 The purpose of paper is to brief Manchester's Health and Wellbeing Board on the key health protection issues in Manchester and to advise on the most appropriate arrangements for health protection in Manchester in the context of the current organisational changes.

1.6 The report sets out some specific recommendations for the Board's approval.

2.0 Two notable successes: substantially increased vaccination coverage in the under 5s and a much reduced incidence of MRSA and Cl. difficile

2.1 Vaccination continues to have a historical place - on a par with the provision of clean water and improved sanitation - as one of our society's most fundamental tools in the continuing battle for better public health. But Manchester has, for many years, had lower than average vaccination coverage levels, often markedly so.

2.2 Since the beginning of 2009, as Annex A shows, vaccination coverage in younger children has improved very substantially in Manchester, from 7% to

[1] Under the Public Health (Control of Disease) Act 1948, as amended by the Health and Social Care Act 2008, and regulations made under it, as well as other legislation, such as the Health and Safety at Work Act 1974 and the Food Safety Act 1990.
[2] Health and Social Care Act 2012, which will come into force in April 2013.

13% depending on the indicator examined. For example, the coverage for the first dose of MMR vaccine has risen from 83% to 93%.

2.3 The recent increase in vaccination levels has been driven by Public Health Manchester's Immunisation Promotion Project – through both data cleansing and by 'chasing-up' defaulting children ('tailgunning') – and delivered by our local general practices.

2.4 Another notable success is that cases of healthcare associated infections have fallen dramatically across Manchester in recent years, as shown by the two tables in Annex C. Over the three years up to 2011, the incidence of both of the two most important infections, MRSA bacteraemia (Methicillin Resistant *Staph. Aureus* bloodstream infections) and *Cl. Difficile* (a serious gut infection), has fallen to about a third of previous levels.

2.5 This is a particularly welcome achievement given that our hospitals have all struggled at different points to deliver lower levels of these infections. Such dramatic change requires intense organisation-wide improvements in healthcare.

2.6 Much of this improvement has been driven by a reduction in infections in hospital patients, but healthcare associated infections also occur in the community. It's now the case that over 50% of MRSA and *Cl. difficile* cases are 'community cases'.

Healthcare associated infections in the community and the role of the Community Infection Control Team

2.7 In 2008/09, Manchester Primary Care Trust (PCT) invested substantially in a Community Infection Control Team (CICT), the counterparts of the infection control teams in our local hospitals. Whilst the Team has a wide remit of health protection responsibilities, it has an especially important role in reducing healthcare associated infections in the community through the implementation of infection control policies and best practice, particularly through undertaking audits and providing training, in settings such as care homes and general practices.

2.8 The investment in the Community Infection Control Team (who are expected to move with the rest of PCT Public Health team to Manchester City Council on 1 April 2013) is now, more than ever, proving important in further reducing healthcare associated infections.

3.0 Key challenges

3.1 Our two most notable achievements - substantially improving immunisation coverage in younger children in Manchester, and the massive reduction in the incidence of healthcare associated infections across the city - prove that major health protection challenges, even problems that proven difficult historically to solve, can be successfully tackled in Manchester. But more remains to be done.

Vaccination coverage in Manchester can be improved further

3.2 Although our vaccination coverage in younger children is much higher, we still haven't reached all the six national targets for children under age 5 (although we have reached the 95% target for children reaching age one). We hope to hit all those targets this year and, if we don't, we do expect to be very close to them.

3.3 We are still finding it extremely challenging to deliver high levels of vaccination across the vaccination programme more broadly, for school-aged children, for newborns needing BCG (to protect against TB), and for those in at-risk groups who need flu vaccination.

3.4 Annex B shows that, whilst vaccination coverage in Manchester has improved substantially across the full range of the different vaccination programmes in recent years, the ' Red, Amber, Green (RAG)' status against recommended and national target levels all remain, apart from those in children under 5, either red or amber.[3]

3.5 Action is being taken on all those parts of the vaccination programme, but a sustained and longer term effort will be needed to improve our performance against all these indicators.

Our goal is no avoidable healthcare associated infections

3.6 Despite the massive reductions in incidence, healthcare associated infections (HCAIs) continue to be one of the biggest challenges the health service faces. This is because, whilst we are performing much better, the targets we are setting ourselves are becoming ever-more challenging year-on-year, and rightly so. Currently, citywide, we remain under the 2012/13 performance trajectories for MRSA and *Cl. difficile*, but only by small margins.

3.8 Our ultimate target must be no *avoidable* infections associated with the healthcare provided in Manchester. We are probably getting fairly close to that goal for MRSA bacteraemia cases but the numbers of *Cl. difficile* cases are still relatively high. And MRSA and *Cl. difficile* are certainly not the only the only healthcare acquired infections.

3.9. Other important infections exist and are causing problems in Manchester, including Carbapenemase producing coliforms (CPCs) and Vancomycin Resistant Enterococci (VRE). And new infections will emerge to challenge us.

4.0 A particularly important challenge for Manchester: tackling the increasing incidence of Tuberculosis (TB)

TB in Manchester is increasing year-on-year

[3] Annex B is a Public Health Manchester internal document, not a formal performance measurement tool.

4.1 A particular challenge, and one on which we have not yet made sufficient progress, is Tuberculosis (TB). TB has not gone away, as some imagine, and is on the increase in NW region. This is particularly the case in Manchester, which has one of the very highest incidences of TB in the country, a problem that is growing year-on-year (whilst the national trend is that the rate of TB cases is relatively steady).

4.2. The number of cases of TB has nearly doubled in the last decade[4] and, in 2011, Manchester had a TB case rate of 45 cases per 100,000 population, above the WHO threshold of 40 cases per 100,000 used to define an area of high TB incidence.

4.3. Annex D provides three charts that show:[5]

- The substantial number of TB cases seen in hospitals in Manchester, over 300 in 2011, and that the numbers are rising further year-on-year.
- That the number of cases in children seen in hospitals in Manchester, although much lower, is rising even more steeply
- That most of those with TB disease are members of local BME communities, in whom the rate of TB is many times higher than in the White British ethnic group

4.4. TB is normally a very 'slow-burning' infection and TB disease usually occurs as the result of a reactivation of latent (dormant) infection acquired in childhood. Most TB cases in Manchester occur in adults born, and infected with TB, in countries with a very high incidence of TB, such as Pakistan or India, or the countries of sub-Saharan Africa. As TB often has a very long latent period, those who do develop active TB disease were usually infected many years, or even decades, previously, usually as children.

4.4. But we know that TB is also transmitted locally in Manchester, as evidenced by the rapidly growing number of cases in children (who are more likely to have been infected locally) and by clusters of the same strains of TB. Most of the children affected live in the local BME communities most at risk of TB.

4.5. Annex E demonstrates the wide geographical variation of TB in Manchester by electoral ward, reflecting the ethnicity profile of different parts of the city.

The actions being taken to reduce TB in Manchester

4.6 In Manchester BCG vaccination is offered to all newborns to protect them against TB. We hope to see a substantial improvement in BCG vaccination coverage, currently only a little over 80%, in 2013. However, this will help to protect children from the most serious forms of TB, and not the adults born overseas in whom most cases of TB occur.

[4] Over the last 10 years there has been an increase of about 43% in the number of TB cases reported, with a concurrent increase of 27% in the population of Manchester.

[5] These charts show hospital activity data which, as Manchester often provides healthcare to residents from neighbouring areas, will not necessarily show the same picture as data for Manchester residents. However, the picture for our residents is likely to be similar, though the increase in cases in children may be less pronounced.

4.7 We are also undertaking partnership work to better engage and communicate with the most-affected communities locally about TB, its symptoms, the treatment available and the need for screening. This is very important work, but is unlikely to reduce TB rates greatly on its own.

4.8 The priority is to strengthen our local specialist TB services - which are focused at the MRI - which are under considerable strain because of the escalating number of TB cases and from being under-resourced over a long period. This is important to help stop patients inadvertently spreading disease, to identify others, usually family members, who may also be infected, and to help cases to complete the lengthy treatment TB requires (preventing both spread of infection and the emergence of drug resistance).

4.8 We also need to review our system for screening new entrants from other countries for TB, in order to identify more people who have latent (dormant) TB and offer them treatment. This is a complex issue and one that requires sufficient capacity in TB services so that any identified possible TB cases from screening can be reviewed by the specialist TB service.

The need to strengthen specialist TB services in Manchester

4.8 Staff capacity is insufficient, as shown in Annex F. The capacity of our local TB services has been explicitly criticised by the acting Regional Director of Public Health and this is echoed by a review published in a national journal, which said, referring to the lack of TB nurses, "Manchester was most poorly resourced".[6]

4.9 Annexes G and H calculate the shortfall in specialist TB nurses in Manchester's TB service based on the required staffing levels recommended by NICE guidance (see footnote of Annex G for reference). These staffing level requirements are reflected in a new GM TB service specification, which was approved at the NHS GM Clinical Strategy Board meeting on Tuesday 8th January 2013.

4.10 There is currently a shortfall of around over six specialist nurses in Manchester's TB services, a level of under-staffing that is primarily a result of the increase in TB cases in Manchester in recent years.

4.11 Although a collaborative commissioning approach across GM has been discussed, no pooled commissioning budget is planned and therefore it is primarily CCGs who need to address this service gap with NHS provider organisations. In doing so, a review of the latest staffing levels, and also of the need not only for specialist nurse capacity but also admin support and adequate consultant sessions, will be needed.

4.12 **Recommendation:** *Request that Central Manchester Clinical Commissioning Group (CCG), as the main commissioner of TB services in Manchester, work*

[6] Bothamley GH et al. Tuberculosis in UK cities: workload and effectiveness of tuberculosis control programmes. *BMC Public Health* 2011.

with North and South CCGs, and with the provider trusts, particularly Central Manchester University Hospitals Foundation Trust (CMFT), to ensure that service capacity is able to meet the standards of national NICE guidance

5.0 The need for clear oversight of the health protection arrangements for Manchester

5.1 Many organisations have a role to play in protecting the public from infections and infectious diseases, but the three key agencies/departments are, 1. The Health Protection Agency, whose staff and functions will transfer to Public Health England on 1 April, 2013. Environmental Health Services, a longstanding part of the local authority's functions, and 3. Public Health Manchester, who formally become part of Manchester City Council on 1 April.

5.2 The overlapping roles and responsibilities of these three agencies/departments, who work with many different stakeholder organisations, can be complex. This is particularly so at present, given the current health sector reorganisation.

5.3 The Department of Health have recommended that, to assist Directors of Public Health to fulfil their leadership role in health protection, that, "local areas consider setting up a health protection forum or committee…for example as a sub-committee of the (Health and Wellbeing) Board".[7]

5.4 The primary role of a new Health Protection Sub-Committee of the Health and Wellbeing Board would be to assist the Director of Public Health, who would chair the group, in his role in ensuring appropriate oversight of the health protection problems, plans and arrangements for Manchester.

5.5 The membership of the committee could be primarily formed by representatives of relevant existing health protection groups in Manchester,[8] with those existing groups formally reporting to a Health Protection Sub-Committee (these groups all currently report to the Primary Care Trust). A representative from Environmental Health and the Director of Infection Prevention and Control for the CCGs should also be members.

5.6 **Recommendation:** *a Health Protection Sub-Committee of the Health and Wellbeing Board should be established. The Terms of Reference should be consistent with the outline provided in paragraphs 5.4 and 5.5 above and agreed by the new sub-committee.*

6.0 Responding to public health emergencies after the 1 April 2013 transition

6.1 It is particularly important that we are clear about how we will respond to public health emergencies. A successful response to emergencies, such as the swine flu pandemic of 2009, is one of the 'acid tests' of our ability to

[7] 'The new Public Health role of local authorities'. Department of Health, October 2012.
[8] The relevant existing local health protection groups are 1. the Vaccination and Immunisation Group, 2. the TB Steering Committee and 3. the Strategic Infection Prevention and Control Committee.

protect public health. The challenge of doing so is greater in the complex health and social care, and wider, environment of Manchester.

6.2 An exercise that took place on January 14th 2013 will help to test the arrangements needed in light of the current health economy transformation. Comprehensive, agreed inter-agency plans for responding to public health incidents are required and will need to be updated and tested. Directors of Public Health should provide, "strategic challenge to health protection plans/arrangements produced by partner organisations".[9]

6.3 **Recommendation:** *the new Health Protection Sub-Committee (see para 5.6) should review what health protection plans are already in place in Manchester for the event of a public health emergency, and, in light of the current transition, advise the Director of Public Health and stakeholder organisations on what additional or revised plans may be needed.*

Continuing to respond to 'smaller' outbreaks

6.4 It was finally decided, at national level, at extremely short notice (towards the end of December), that Community Infection Control Teams will transfer to local authorities. The principal risk is that the Community Infection Control Team (CICT) will not be able to continue to provide their longstanding operational response role in the event of *smaller* community outbreaks from 1 April.

6.5 This is because it is not possible to put in place the various clinical governance processes that are needed in time (and it is not clear that robust arrangements would be possible even if further time was available to plan).

6.6 This response involves, as examples, providing urgent vaccinations in a school when there is a measles outbreak or giving antibiotics to a group of students exposed to meningococcal meningitis (note that the coordination in the event of an outbreak is a public health responsibility, and the operational response to larger outbreaks is, and will continue to be, provided by NHS providers).

6.7 Although the circumstances where the CICT needs to respond to outbreaks don't occur often, it is critical to ensure that Manchester has in place appropriate arrangements to continue this function. If MCC is unable to discharge this responsibility directly, then this role has to become the responsibility of NHS providers. An honorary contract or secondment arrangement between the Community Infection Control Team (CICT) and CMFT is currently being pursued to try and ensure that the CICT can continue to provide the same service, in the event of smaller outbreaks, under the aegis of a provider trust.

6.8 **Recommendation:** *the sub-committee as part of the review will consider the operational responses to smaller outbreaks, ensure that they are sufficient and*

[9] 'The new public health role of local authorities'. Department of Health, October 2012.

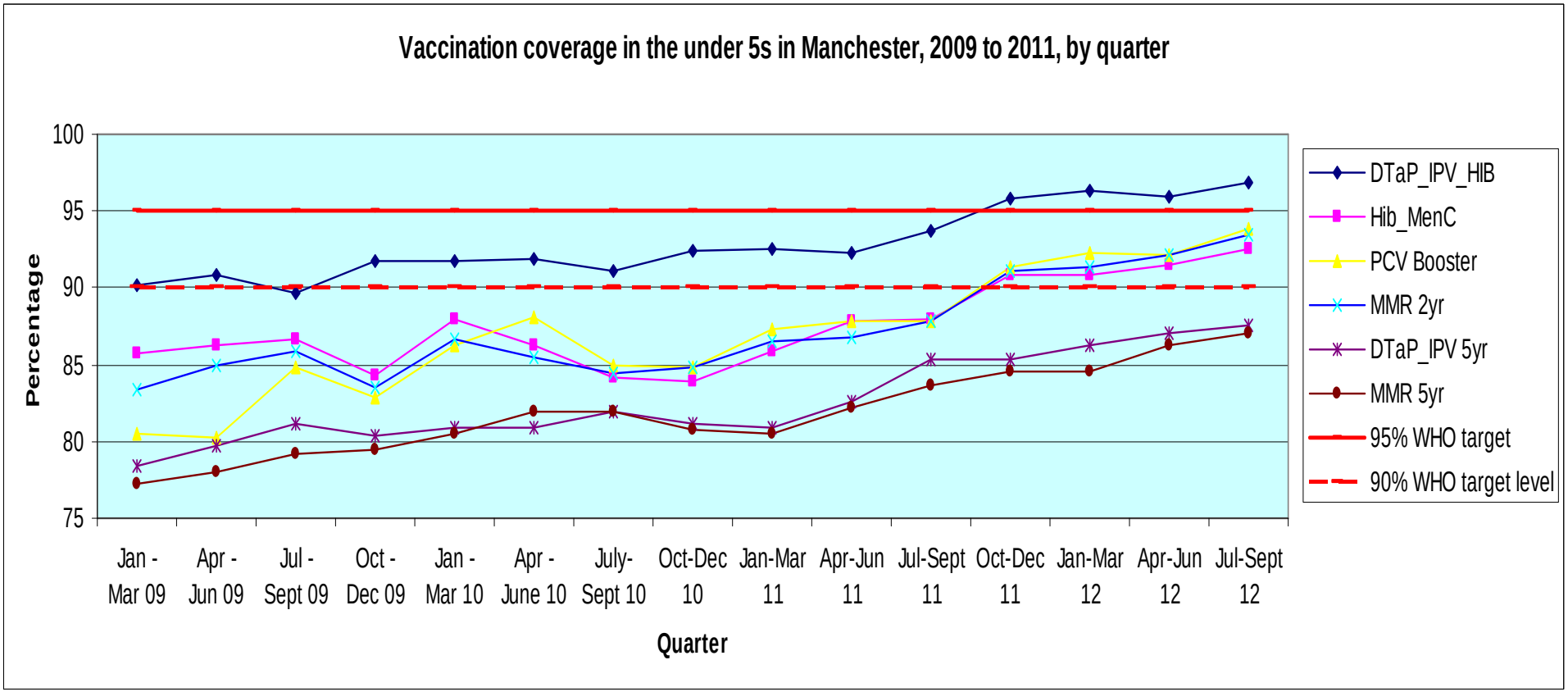
robust and clarify the respective roles of partner organisations represented on the Board

7.0 Conclusion

7.1 We have made considerable progress in tackling some of the key health protection challenges in Manchester. In the last three to four years, vaccination rates in younger children have been substantially increased, and the rates of healthcare associated infections have been reduced very dramatically.

7.1 There are still major challenges, particularly in tackling the major escalation in TB in the city, and more needs to be done. This report summarises the key successes and challenges, and sets out recommendations to ensure that the health protection arrangements for Manchester are robust and kept under appropriate review.

Annex A:
Vaccination coverage in young children in Manchester - recent trends in the key vaccine indicators in younger children



Source: COVER data (Health Protection Agency)

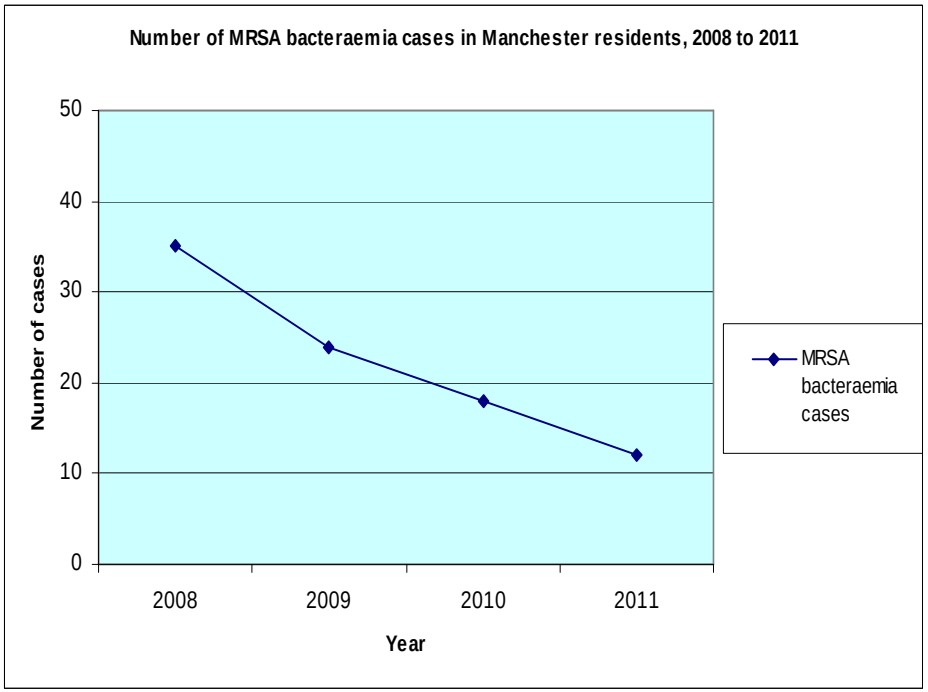
Annex B:
Vaccination coverage for all ages in Manchester – RAG rated performance against 'gold standards'

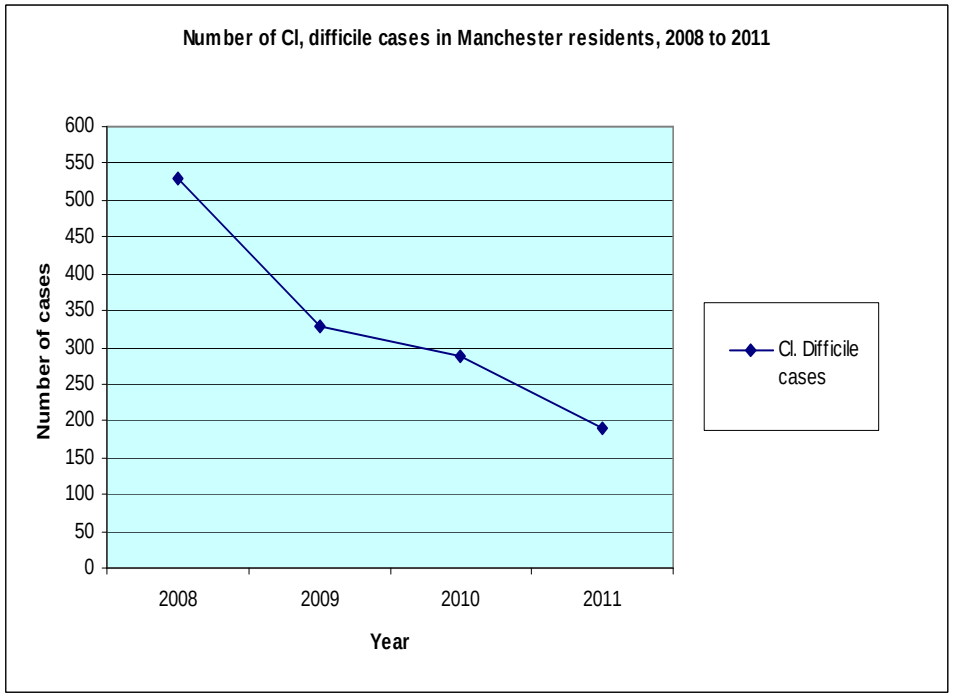
Current vaccination coverage performance in Manchester, by vaccination programme, in comparison to targets

Green = target met; amber = target not met but reasonably close; red = target not met and considerable distance to target

	PREVIOUS PERFORMANCE (MOSTLY 2009)	CURRENT % COVERAGE	%DIFFERENCE FROM PREVIOUS PERFORMANCE	TARGET	DATA SOURCES	TARGET DEFINITION
Routine vaccination of the under-5s						
DTaP/IPV/Hib, age 1	90.2	96.0	5.8	95	Previous performance data = COVER data for Q1 2009; current performance = COVER data for Q1, 20012/13	A 95% target for the indicator at age 1 and for MMR at age 2 has been set, which are national targets, but 90% for the other four indicators (as they are booster doses). Debatably, all of these targets should be 95%.
PCV, age 2	80.5	92.2	11.7	90	Ditto	Ditto
Hib/MenC, age 2	85.7	91.5	5.8	90	Ditto	Ditto
MMR, age 2	83.4	92.1	8.7	95	Ditto	Ditto
DTaP/IPV, age 5	78.4	87.0	8.6	90	Ditto	Ditto
MMR, age 5	77.2	86.2	9.0	90	Ditto	Ditto
School age vaccination						
Routine HPV for Y8 girls	70.3	82.8	13	90	Previous performance = 2008/09 school year data; current performance = uptake for Y8 girls in 2010/11 school year	90% for three doses, a national target
Teenage booster	62.4	77.8	14	90	Local data, data issues present. Previous performance = 2009/10 school year; current performance = 2011/12 school year	90%, a national target
Seasonal flu vaccination						
Over 65s	71.3	72.7	1.4	70	Previous performance = 2008/09 winter data; current performance = 2011/12 data.	Target is 70% (based on CMO's guidance for the 2011/12 winter)
At-risk groups under 65	48.7	52.9	4.2	60	Previous performance = 2008/09 winter data; current performance = 2011/12 data.	Target is 60% (based on CMO's guidance for the 2011/12 winter)
Proportion of general practices returning data	99	99	0	100	Previous performance = 2008/09 winter data; current performance = 2011/12 data.	Target 100% (as all data should be returned).
Pregnant women	n/a	24.3	n/a	60	Previous performance = 2011/12 data (pregnant women not included as a seasonal flu vaccination at-risk group until 2009/10 winter)	Target is 60% (based on CMO's guidance for the 2011/12 winter)
Healthcare workers	32.5	58.1	25.6	70	Previous performance = 2009/10 data; current performance = 2011/12 data; both figures are indicative only having been calculated by taking a mean of the reported uptake for PAT, CMFT, UHSM and the MMH&SCT	Target is 70% (based on recommendation for 2012/13 winter)
Neonatal vaccination						
BCG	74	82.5	8.5	95	Local data, data comparison issues. Previous performance = children born Jan-Dec 2008, as at May 2009; current performance = children reaching age 1 in Q1 2012.	Target set as 95%, in line with GM service specification
Hep B vaccination for at-risk neonates	100	91	-9.0	95	Previous coverage = COVER data for Q1 2009 (denominator very low and not clear data is reliable); current performance = COVER data for Q1, 20012/13	Target set as 95%, in line with DTaP/IPV/HIB age 1 target
Looked after Children						
Looked after Children	55	77.2	22.2	90	2009 = 2008 OC2 data; current performance = OC2 data for 2012	Target of 90% set following local discussion

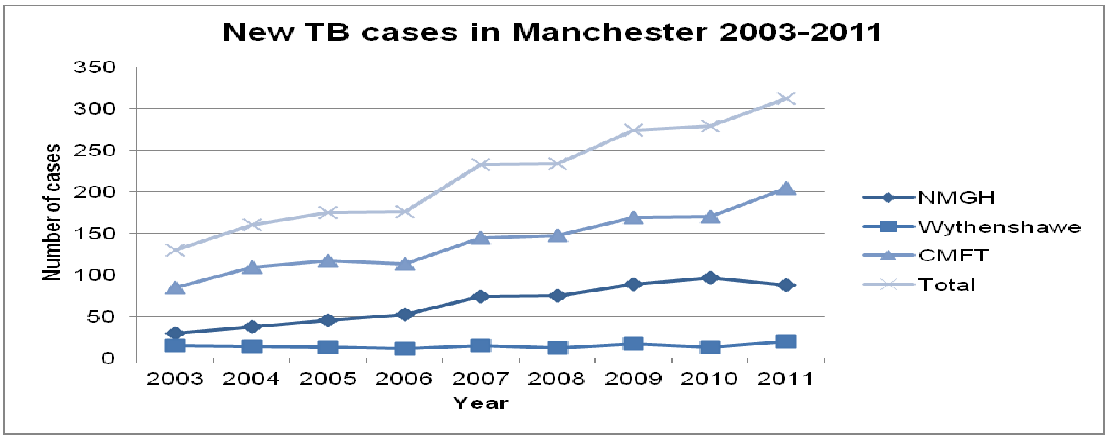
Annex C:
MRSA bacteraemia and Cl. difficile cases in Manchester residents – recent trends in case numbers

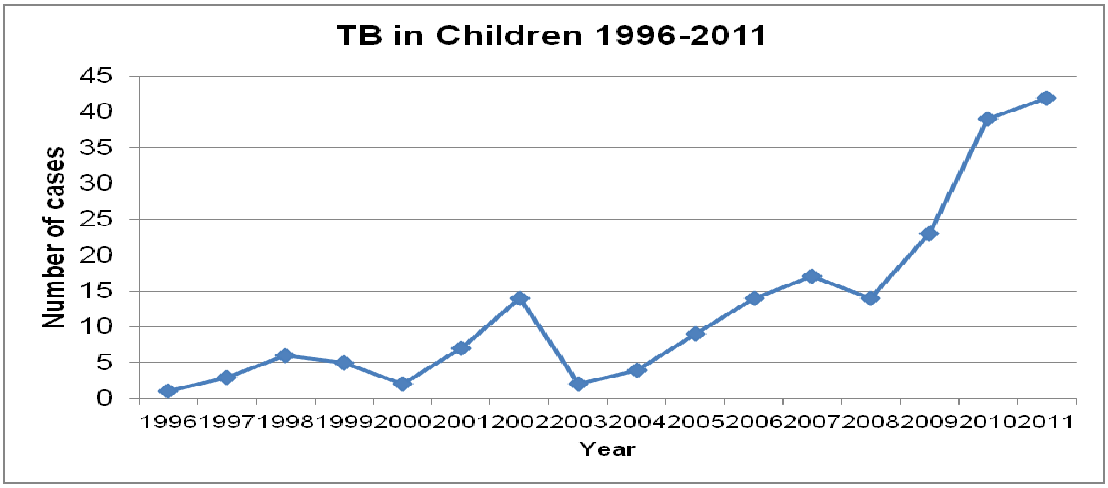


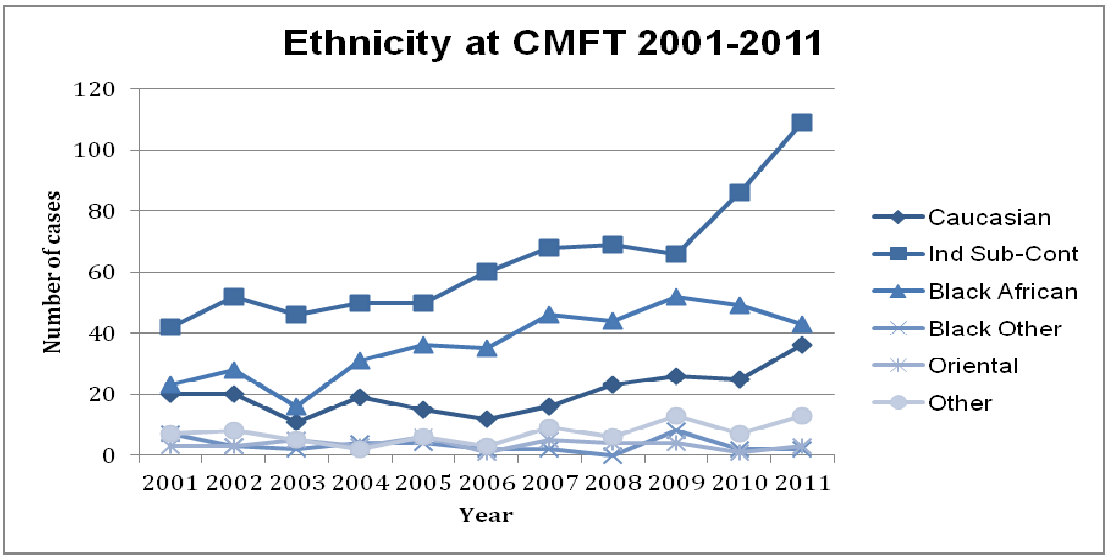


Source: MESS data (Health Protection Agency)

Annex D:
Tuberculosis (TB) cases treated in Manchester hospitals –
trends in total new cases, by year (first chart below), in children (second chart), and by ethnic group (third chart)







Source: Annual Report 2011, TB Unit, Manchester Royal Infirmary

Annex E:
Geographical variation in TB case rates in Manchester - number and rate of TB cases by electoral ward in 2011

Electoral ward	Number of cases of TB	Rate (per 100 000 population)
Longsight	27	175.0
Cheetham	30	133.0
Moss Side	20	105.8
Levenshulme	14	90.7
Gorton South	15	76.5
Bradford	11	69.7
Rusholme	9	66.0
Hulme	11	65.1
Whalley Range	10	64.8
Ardwick	11	57.1
Burnage	8	52.5
Gorton North	7	42.6
Crumpsall	6	37.6
Ancoats and Clayton	6	37.2
Northenden	5	33.9
Fallowfield	5	32.9
Withington	<5*	Not calculated
Miles Platting and Newton Heath	<5*	Not calculated
Didsbury West	<5*	Not calculated
Charlestown	<5*	Not calculated
Sharston	<5*	Not calculated
Harpurhey	<5*	Not calculated
Brooklands	<5*	Not calculated
Old Moat	<5*	Not calculated
Chorlton Park	<5*	Not calculated
Woodhouse Park	<5*	Not calculated
Higher Blackley	<5*	Not calculated
Chorlton	<5*	Not calculated
Didsbury East	<5*	Not calculated
Moston	<5*	Not calculated
Baguley	<5*	Not calculated
City Centre	<5*	Not calculated

***** Where case numbers are less than five, for information governance reasons, case numbers are not specified. A case rate has not been calculated for these wards.

Source: GM Health Protection Unit using Enhanced Tuberculosis Surveillance (ETS) data

Annex F:
TB nursing capacity in Manchester (extracted from comparative figures produced for the Greater Manchester TB group)

Manchester TB Nursing Capacity							
Provider	Total active cases per Trust (2010 data)	Current nursing staffing / WTE	Min Staffing if all cases had SCM	Min staffing if all cases had ECM	RAG of Current Staffing Situation	Capacity against RCN & NICE guidance	Additional factors affecting capacity
Central Manchester Foundation Trust (Central)	173	3.3	4.35	8.65		Nursing capacity below RCN/NICE Guidelines for Standard Case Management.	Nurses carrying out adminstrative functions, due to limited admin support. Nurses also carry out contact screening and provide support for UHSM.
Central Manchester Foundation Trust - (North)*	91	1	2.28	4.55		Nursing capacity below RCN/NICE Guidelines for Standard Case Management.	Nurses carrying out adminstration task due to no admin support.
Central Manchester Foundation Trust - (Trafford)	9	0.6	1	1		Nursing capacity below RCN/NICE Guidelines for Standard Case Management.	Nurses carrying out adminstration task due to no admin support.
University Hospital of South Manchester NHSFoundation Trust	12	0	1	1		Nursing capacity below RCN/NICE Guidelines for Standard Case Management.	No nursing capacity and arrangement with CMFT exists
Total		**4.9**	**8.63**	**15.2**			

* refers to NMGH, as TB nurse based there is employed by CMFT

Source: Data gathered from local TB services and collated by GM TB group

Annex G:
Proportion of TB cases in Manchester that require enhanced case management

Trust/hospital (sector)	Data collection period	Standard care cases	Enhanced care cases*	Total cases**	Percentage of cases needing enhanced care
CMFT (Central)	Jan to Dec 2010	60	96	170	**56%**
CMFT (Central)	Jan to Dec 2011	89	91	180	**51%**
Wythenshawe (South)	2010 to 2012	21	24	45	**53%**
North Manchester General (North)	Jan to Dec 2011	46	42	88	**48%**
Total	**-**	**216**	**253**	**483**	**52%**

* 'Enhanced care' is required for patients where a risk assessment shows they have complex medical and/or social needs, as recommended by NICE guidance ('Identifying and managing tuberculosis among hard-to-reach groups', NICE, 2012) and has been defined using Royal College of Nursing guidance ('Tuberculosis case management and cohort review: guidance for health professionals', RCN, 2012)

** May include cases excluded, for lack of data and other reasons

Source: Data provided by TB services in Manchester, collated by Public Health Manchester

Annex H:
Shortfall in specialist TB nurse capacity in Manchester's TB services

Trust/ sector/hospital*	TB cases*	WTE specialist nurses in post	Number of nurses required if 100% Standard Case Management	Number of nurses required if 100% Enhanced Case Management	Number of nurses required if 50% Standard Case Management / 50% Standard Case Management	Shortfall of specialist nurses
CMFT (Central)	173	3.3	4.35	8.65	6.5	**3.2**
CMFT (Central and Trafford)	182	3.9	4.55	9.1	6.8	**2.9**
UHSM (South)	12	0	1	1	1	**1**
Total	-	-	-	-	-	**6.2**

* Based on first two columns of table in Annex F

Source: See footnotes to Annexes F&G; calculations based on NICE guidance