Public Health England

PHE Board Paper

Title of meeting	PHE Board
Date	24 September 2014
Sponsor	Paul Cosford
Presenter	Paul Cosford / Anthony Kessel
Title of paper	Antimicrobial resistance (AMR)

1. Purpose of the paper

1.1 The purpose of the paper is to inform, and to invite comments from, Public Health England's (PHE) Board and a panel of invited experts, on PHE's leadership role to address antimicrobial resistance (AMR).

1.2 The English Surveillance Programme for Antimicrobial Usage and Resistance (ESPAUR) 2014 Report is available to underpin the discussion and includes the most up to date epidemiological data.

2. Recommendation

2.1 The PHE Board is asked to **NOTE** and **COMMENT** on PHEs priorities to address AMR:

a) To provide system leadership across the health and care sector, in recognition that addressing AMR in England relies on actions by other organisations.
b) To bring together PHE activities that contribute towards addressing AMR in a single AMR Programme, which will set out one comprehensive programme of work. This will include activities such as: infection prevention and (outbreak) control; surveillance; vaccination and immunisation; diagnostics; genomics; vaccine development; and social marketing and public engagement; in regard to resistance in key infections of public health concern[1].
c) To develop and agree a way to measure our progress towards addressing AMR.

3. Development of a comprehensive programme of work to address AMR

3.1 From a public health perspective, addressing antimicrobial resistance focusses on limiting the number of people who suffer, and may die as a consequence, from an infection that is resistant to antimicrobials. It further concerns itself with the notion that the lack of effective antimicrobials is a threat to our modern medicine, especially surgery and chemotherapy in cancer treatments, and as such poses a wider risk to the health of the population.

[1] Bacterial blood stream infections (Gram-negative bacteria and MRSA), Meningococcal and Pneumococcal invasive infections, (e.g. pneumonia and septicaemia), healthcare associated infections (e.g. pneumonia, urinary tract infections and surgical site infections, fungal infections, Gonococcal infection (sexually transmitted infection), Tuberculosis, HIV, gastroenteritis (e.g. Salmonella and Campylobacter), influenza and malaria.

3.2 Many areas of expertise within PHE have the potential to contribute significantly to addressing AMR, including microbiology, surveillance, epidemiology, infection prevention and control, drug-development, and research, across various health topics such as TB, healthcare associated infections (HCAI), sexually transmitted infections, fungal and parasitic infections, and vaccines and immunisation programmes.

3.3 Much work is already underway to reduce infections in general and resistance in particular, however at present these areas of expertise operate in a fragmented way across the organisation (see table 1). It is argued that in order to lead a strong public health response to AMR nationally, and internationally, it is key to consider these activities together as part of one whole.

4. Delivery of PHE's role in addressing AMR

4.1 Table 1, and the annex paper, describe PHE's current and potential future work towards addressing AMR from a public health perspective.

4.2 PHE's AMRS and HCAI Programme is leading the implementation of the UK 5-year AMR Strategy 2013-12018 across the health and care sector in four of the seven key areas[2], while contributing to the other three[3]. The strategy focusses predominantly on antibacterial resistance (i.e. antibiotics).

4.3 Clearly a large amount of activity is underway, and planned, however there is potential to further strengthen our activities.

4.4 Table 1 illustrates that leadership for various areas that contribute, or have a significant potential to contribute, to addressing AMR as currently dispersed across the organisation with no overarching leadership of the whole (with the notable exception of the oversight provided across HCAI and AMR and implementation of the UK AMR Strategy).

4.5 It is therefore proposed to bring these PHE activities together into a single AMR Programme which will set out and manage a clear programme of activities. This will enhance PHE's national leadership role for AMR across the health and care sector.

4.6 The Board is invited to comment on this approach and in particular whether, given the scale of the problem, the approach taken is sufficient.

Anna Cichowska
Consultant Public Health Strategy
August 2014

[2] Surveillance, optimising prescribing, infection prevention and control, training and education of professionals and public engagement

[3] Identifying research needs, international collaboration, development of new drugs, treatments and diagnostics

Table 1: Areas of expertise within PHE that have a significant contribution to make towards addressing AMR (further details of activities are provided in the annex paper).

Area of work	Lead	Current key activities	Future activities needed	Next steps required
1. Infection prevention and (outbreak) control	Operational: PHE Centres	PHE Centres provide IPC[4] expert support to local health and care sector	1. Focus on prevention and controlling outbreaks of resistant infections 2. Focus on antimicrobial stewardship	**- Aligning operational and strategic activities** **- Strengthening PHE's leadership role across the health and care system; both at national and local health economy level**
	Strategic/national: AMRS[5]&HCAI[6] Programme	AMRS & HCAI Programme leads the development of strategy and national guidance	Bringing health and care partners to lead the development of a national IPC framework	
2. Surveillance	HCAI & AMR Department Colindale	Surveillance of HCAI and AMR	1. Oversight of surveillance of resistant infections at a single point 2. Linkage of clinical outcome data to AMR surveillance data 3. Agree measurement of resistance for corporate priority on AMR 4. Inclusion of resistance and antibiotic usage data into SGSS[7]	**- Discussion with surveillance leads** **- Implementing recommendations from the Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infection (ARHAI) in regard to establishing monitoring of Carbapenem-resistant organisms; on early detection of multidrug Gran-negative outbreaks**
	ESPAUR[8]	Bringing together data on resistance in selected bacterial blood stream infections and antibiotic usage data in ESPAUR report		
	ICCQIP[9]	Establishment of surveillance for infections in ICU[10]		
	SSI[11] team Colindale	Surveillance of surgical site infections; including resistance		
	GRASP[12]	Surveillance of gonococcal infections; including resistance		
	TB department Colindale	Surveillance of TB infections; including resistance		
	HIV department Colindale	Surveillance of HIV infections; including resistance		
	Respiratory infections department Colindale	Surveillance of respiratory infections; including resistance		
	Gastrointestinal Infections:	Surveillance of gastrointestinal infections; including resistance		
	Fungal infections	Surveillance of fungal infections		
	Parasitic infections	Surveillance of infections with parasites		

[4] IPC: Infection Prevention and Control
[5] AMRS: Antimicrobial resistance and stewardship
[6] HCAI: Healthcare associated infections
[7] SGSS: Second Generation Surveillance System; PHE's new surveillance system providing improved access to data for local use (webbased)
[8] ESPAUR: English Surveillance Programme for Antimicrobial Use and Resistance
[9] ICCQIP: Infections in Critical Care Quality Improvement Programme
[10] ICU: Intensive Care Unit
[11] SSI: Surgical Site Infections
[12] GRASP: Gonococcal Resistance to Antimicrobials Surveillance Programme

3. Diagnostics	AMRHAI[13] reference laboratory Colindale	Pilot survey of laboratory practices in regard to resistance and assess levers and barriers for introduction of rapid diagnostics	National roll-out of survey Development of rapid diagnostics Introduction of rapid / point –of-care diagnostics	**- Contribute to DH-led steering group on Diagnostics** **- Setting out PHE programme of work for diagnostics**
	Separate leads for various microorganisms	Specialist and reference microbiology services for variety of microorganisms		
4. Genomics	PHE Genomics Progamme	- Genomics Programme is focussing on developing new diagnostics for TB[14] - Applying molecular techniques for outbreak investigation and control	Considering developing new diagnostics for other infections	**- Discussion with Genomics Programme** **- Discussion with NIHR-HPRU (Oxford)**
	AMR NIHR-HPRU (Oxford University)	PHE is a partner in the NIHR-HPRU (Oxford) to bring genomics into everyday practice		
5. Work with NHS and local authorities to strengthen IPC behaviours	Operational: PHE Centres		1. Ensuring surveillance data is guiding local IPC practices 2. Ensuring that IPC guidance is implemented 3. Provide advice to NHSE in regard to CDI performance targets	**- Discussions with NHS colleagues and DPHs[15]**
	Strategic/national: AMRS & HCAI Programme	PHE is working together with NHSE/CMO to implement guidance on Carbapenem-producing Enterobacteriaceae		
		Reviewing approaches to CDI in view of changed epidemiology		
6. Work with NHS to change prescribing behaviours (antimicrobial stewardship)	Operational: PHE Centres		Ensuring that surveillance data is guiding local antimicrobial stewardship programmes	**- Further assessment of what further actions are needed to change prescribing practices / optimise prescribing**
	PHE Primary Care Unit (TARGET[16])	Leading implementation of national antimicrobial stewardship guidance (TARGET and SSTF) in collaboration with NHS and RCGP[17]		
	SSTF[18] as part of ESPAUR			
	HEE[19]: National antimicrobial prescribing competencies (HEE)	Leading in collaboration with HEE implementation of national antimicrobial prescribing competencies		
	NIHR-HPRU (Imperial College London[20])	Collaborating with NIHR-HPRU (Imperial) to support research on best practice in IPC and antimicrobial stewardship		
	PHE Behavioural insights team (Health and Wellbeing Directorate)	Lead behavioural intervention pilot in primary care		

[13] Antimicrobial resistance and healthcare associated infections reference laboratory
[14] The Genomics Programme also aims to develop diagnostic for HIV and Hepatitis C virus
[15] DPH: Director of Public Health
[16] TARGET: Treat Antibiotics Responsibly Guidance, Education and Tools
[17] RCGP: Royal College of General Practitioners
[18] SSTF: Antibiotic Stewardship guidance 'Start-smart-then-focus'
[19] HEE: Health Education England
[20] UCL: University College London

	ESPAUR	Piloting of recently developed Antibiotic Prescribing Quality Measures (APMQs);	1. National roll out of APMQ in NHS; 2. Monitoring any unintended consequences arising from the introduction of these AMPQs	
7. Vaccination and immunisation	Vaccination and immunisation programme	- Monitoring immunisation coverage data for children in the UK - Expert advice to JCVI[21]		**- Discussion**
8. Vaccine development	Vaccine development	Development of vaccines	Development of relevant vaccines	**- Discussion**
9. Public Engagement	Marketing team (Health and Wellbeing Directorate)	Development of public information leaflets	Consideration of a large scale public AMR campaign	**- Further discussion about public engagement activities with a potential for targeted public AMR campaign**
	EAAD[22] - part of ESPAUR	Antibiotic stewardship activities aimed at public (and health professionals)	Annual event – delivery of EAAD 2015; building on outcomes of evaluation from EAAD 2014	
	Public Involvement AMR Forum (PIAF) – part of AMRS & HCAI Programme	Establishing a public and civic society forum to inform PHE and ARHAI AMR activities		**- Organising first meeting of the PIAF and formalise its role**
10. Work with commissioning system to ensure Patient Safety	Strategic/national: AMRS & HCAI Programme	Discussions being held	Ensuring surveillance data is informing commissioning (NHSE and CCGs[23])	**- Agree way forward with NHSE**
11. Work with regulatory system to ensure Patient Safety	Strategic/national: AMRS & HCAI Programme	Discussions starting	Ensuring surveillance data is informing regulatory system (CQC, Monitor)	**- Agree way forward CQC**
12. International	International Health Team	Commonwealth laboratory twinning initiative; pilot workshop in Caribbean region (Dec 2014), with more to follow after this. Contributions to WHO AMR Action Plan (secondment to WHO-HQ Geneva)	Roll-out of Commonwealth laboratory twinning initiative	**- Respond/create to further arising opportunities**

[21] JCVI: Joint Committee on Vaccination and Immunisation
[22] EAAD: European Antibiotic Awareness Day
[23] CCGL Clinical Commissioning Group