



Cheshire and Merseyside FYFV Working

Group

Cross-Cutting Theme/LDS Programme:

Demand Management and Prevention at scale

Service/Theme: Antimicrobial resistance

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3rd NHSE & ALBs, October 2016 FYFV Submission

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Template – Rationale and Notes for Use

Rationale

The Five Year Forward View (5YFV) sets out how the health service needs to change, arguing for a more engaged relationship with patients, carers and citizens so that we can promote wellbeing and prevent ill-health. It represents the shared view of the NHS' national leadership, and reflects an emerging consensus amongst patient groups, clinicians, local communities and frontline NHS leaders. It sets out a vision of a better NHS, the steps we should now take to get us there, and the actions we need from others.

The FYFV Executive summary highlights the following:

- The NHS has dramatically improved over the past fifteen years.
- there is now quite broad consensus on what a better future should be
- radical upgrade in prevention and public health
- when people do need health services, patients will gain far greater control of their own care
- the NHS will take decisive steps to break down the barriers in how care is provided
- England is too diverse for a 'one size fits all' care model to apply everywhere. But nor is the answer simply to let 'a thousand flowers bloom'
- **Create integrated out-of-hospital care - the Multispecialty Community Provider**
- **Primary and Acute Care Systems**
- **Urgent and emergency care**
- **Smaller hospitals will have new options to help them remain viable**
- **Specialised Care**
- **Midwives will have new options to take charge of the maternity services they offer**
- **The NHS will provide more support for frail older people living in care homes**
- In order to support these changes, the national leadership of the NHS will need to act coherently together, and provide meaningful local flexibility
- We will improve the NHS' ability to undertake research and apply innovation
- it suggests that there are viable options for sustaining and improving the NHS over the next five years, provided that the NHS does its part, allied with the support of government, and of our other partners, both national and local

The seven lines in **bold** are '**New Models of Care**' explained at pp. 20-26 of the 5YFV. Sustainability & Transformation Plans (FYFVs) are a delivery mechanism for the 5YFV, they are the practical expression of the belief that one of the most powerful ways to achieve change is by working together – across entire communities and pathways of care – to find ways to close the gaps between where we are now and where we need to be in 2020/21.

In October 2016, FYFVs are required to submit more detailed plans to NHSE and the partner ALBs. Completion of these PIDs for our 3 LDSs and 7 Cross-Cutting Themes will allow us to present a consistent and coherent picture of these 10 suites of programmes at the heart of the C&M FYFV.

Use

All Cross-Cutting Theme Leads and LDS Programme Leads are requested to use this template both as a guide and the structure of the description of how the Vanguard/Programme/Initiative is configured, what it is aiming to achieve and the benefits that will accrue. **For all the sections within the template there are brief notes of guidance as to the suggested content for that section at the beginning. These are in italics and maybe left in the document, for the sake of clarity, or deleted when understood, according to the preference of the team compiling the report.**

The current owner of this template is the C&M FYFV Portfolio Management Office (PMO) and, therefore, all suggested amendments to the template should be passed to the PMO.

Executive Summary

The executive summary should contain only text and include no new material; it should contain only words already found elsewhere in the document. The executive summary should aim to convey all the key messages of the report on a page. It should enable the reader to understand the important points upon which to focus, at a glance.

AMR is the greatest threat to global health in our lifetime and failure to act now will mean that by 2050, 10 million lives per year will be lost to drug resistant infections and elective surgery, such as hip replacement and caesarean sections, will be high risk.

Cheshire and Merseyside has one of the highest rates of healthcare acquired infection and combined general practice and hospital antibiotic consumption in England.

Investing in action now to reduce unnecessary use of antibiotics will:

- Reduce the development of antibiotic resistance and health care acquired infection
- Save antibiotics for the treatment of serious infections, such as sepsis, thus saving lives
- Reduce morbidity and mortality for patients
- Reduce the number of community acquired infections which require hospitalisation
- Reduce the length of hospital stay
- Reduce the number of bed days lost due to outbreak management and increase the efficiency of the NHS
- Reduce the cost of treating infection as expensive last option antibiotics will not be necessary
- Reduce the overall prescribing costs due to reduce volume of antibiotics being used
- Drive action to prevent infections, such as catheter management and hydration to prevent urinary tract infections

There key priority areas for local action have been identified to complement the national program of work. These are:

- Back Up prescribing,
- Education and training
- Antimicrobial stewardship

Delaying addressing antimicrobial stewardship and resistance will mean it will be much harder to achieve control and we can be certain of is that, in the absence of interventions to slow the emergence of resistance, and improve infection prevention and control that the impacts will be felt not just in isolated areas but at a far more fundamental level, across our societies and healthcare systems. To make the health and social care system sustainable investment is needed now.

1. National, Regional, Local Context

This section should describe relevant national standards, trends and challenges related to the team/service line activity that is the subject of the document. In particular, NHSE or other Arm's Length Body (ALB) policy guidance, national frameworks and demographic trends are likely to be some of the key points of reference to consider when constructing your vision. However, the section must be concise and limit this description to those aspects that bear directly upon the context in this geographic location. ***This section should also exploit the NHSE 'FYFV footprint analyses pack for Cheshire and Merseyside' as well as the 'FYFV Aides Memoire'.***

Moreover, this section should go on to describe relevant regional/local standards, trends and challenges related to the team/ service line activity that is the subject of the document; in particular, regional/local commissioning intention and contractual arrangements. The report should bring into focus any regional/local pilots or projects that have a bearing on the team/service. The key local stakeholders, who are influencing the current and future scope of team/service delivery, should be identified.

Your Plan for the 'Cross-Cutting Theme' or 'LDS Programme' should then describe which policies and guidance you will use the change programme as an opportunity to further develop.

Your content starts here.....

Nationally

'AMR is the greatest threat to global health in our lifetime'

Trends/ challenges

- In total about 700,000 people die every year from drug resistant strains of common bacterial infections, HIV, TB and malaria. This number is likely to be an underestimate due to poor reporting and surveillance.
- It is accepted that that by 2050, 10 million lives a year and a cumulative 100 trillion USD of economic output are at risk due to the rise of drug resistant infections if we do not find proactive solutions now to slow down the rise of drug resistance.
- The greatest burden of morbidity for most infectious diseases, except for those transmitted primarily through sexual contact or injecting drug use, falls on the very young or old.
- The economic burden from infectious diseases in England, including costs to the health service, to the labour market and to individuals themselves, is estimated at £30 billion each year, with a large proportion of these costs incurred because of respiratory or gastrointestinal infections.
- In England, the total consumption of antibiotics in primary and secondary care increased significantly by 6.5% over the last four years; from 21.6 DDD per 1000 inhabitants in 2011 to 23.0 DDD per 1000 inhabitants in 2014. Between 2013 and 2014, total consumption increased by 2.4%.
- Upper respiratory tract infections (URTIs) account for 60% of primary care antibiotic prescribing.
- In 2014, the majority of antibiotics in England were prescribed in general practice (74%), followed by prescribing for hospital inpatients (11%), hospital outpatients (7%), patients seen in dental practices (5%) and patients in other community settings (3%).

- There is limited evidence of benefit re antibiotics: acute otitis media, pharyngitis, acute bronchitis and the common cold.
- Between 2010 and 2014 the rate of bloodstream infections caused by E. coli and K. pneumoniae has increased by 15.6% and 20.8% respectively.
- The number of antibiotic resistant E. coli bloodstream infections has increased overall between 2010 and 2014.
- There has been a 23% reduction in S. pneumoniae bloodstream infections between 2010 and 2014; this may be related to increased pneumococcal vaccination rates.

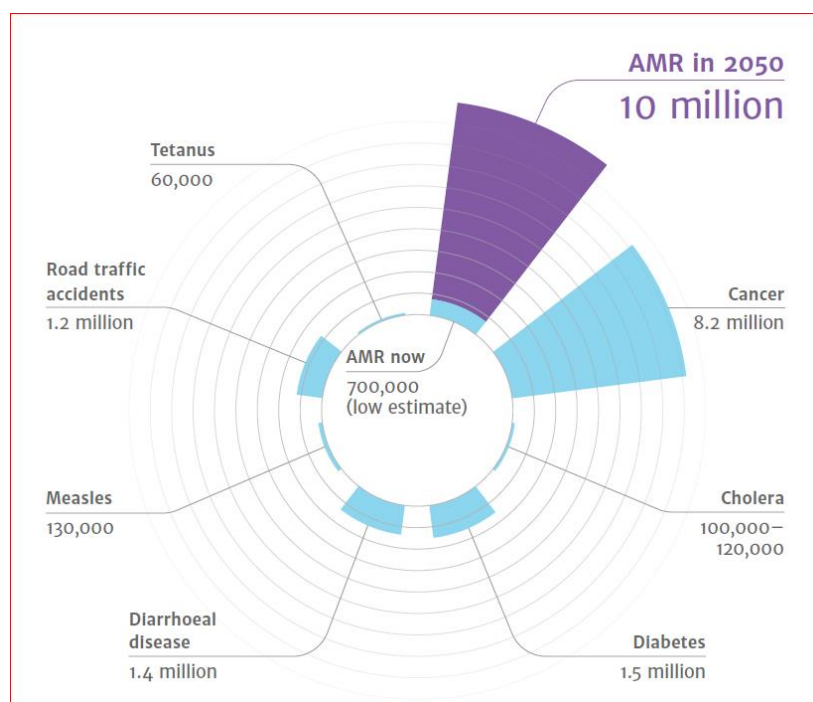
Regional and local

‘Cheshire and Merseyside has one of the highest rates of healthcare acquired infection and combined general practice and hospital antibiotic consumption in England.’

Trends/ challenges

- The North West has the highest number of Carbapenemase producing Enterobacteriaceae (CPE) in the UK, these are extremely drug resistant gram negative bacteria
- Cheshire and Merseyside has one of the highest rates of MRSA bacteraemia in England (1.8 per 100,000 population). Cheshire and Merseyside also has one of the highest rates of reported Clostridium difficile in England (31.3 per 100,000 population) (PHE 2016)
- Between 2010 and 2013, the highest combined general practice and hospital antibiotic consumption was in Merseyside, with similar levels reported as Southern Europe with 30.4 DDD per 1,000 inhabitants per day, over 30% higher than Thames Valley with the lowest consumption, (22.8 DDD per 1,000 inhabitants per day).

Global deaths attributable to AMR every year



Review on Antimicrobial Resistance

Standards and Policy context

WHO AMR Global report on surveillance 2014 produced in collaboration with Member States and other partners, provides a picture of the magnitude of AMR and the current state of surveillance globally. The European Centre for Disease Control produced a similar report which provides a picture of the AMR situation in Europe.

In the UK the National Institute for Clinical Excellence Guidance (NG15): Antimicrobial stewardship: systems and processes for effective antimicrobial medicine use provides good practice recommendations on systems and processes for the effective use of antimicrobials.

In addition the UK has the Five Year Antimicrobial Resistance Strategy (2013 to 2018) sets out actions to address the key challenges to AMR with an overarching goal being to slow the development and spread of AMR. It focusses activities around 3 strategic aims:

- (1) Improve the knowledge and understanding of AMR
- (2) Conserve and steward the effectiveness of existing treatments
- (3) Stimulate the development of new antibiotics, diagnostics and novel therapies.

Finally since 2016 in the UK the CQUIN scheme has a target for antimicrobial stewardship which is intended to deliver clinical quality improvements and drive transformational change and the quality premium rewards clinical commissioning groups (CCGs) for improvements in the quality of the services that they commission and for associated improvements in health outcomes and reducing inequalities. There is also a focus on reducing antimicrobial resistance and includes incentives for achieving this.

Cheshire & Merseyside Strategy

- Cheshire and Merseyside Antimicrobial Resistance Strategy and Action Plan, launched 2014, in the context of the UK Five Year Antimicrobial Resistance Strategy 2013 to 2018. This was developed by a multiagency cross health and social care group who contributed their time for free, however now investment is needed to implement the plan and drive change.
- This document has been created following a three year review by PHE North West's Cheshire and Merseyside Health Protection Team and draws from the findings of five different Antimicrobial Resistance (AMR) steering groups which were set up to explore the following identified local priorities:
 1. Back Up prescriptions in primary care
 2. Near patient testing/point of care testing
 3. Education, awareness-raising and training
 4. Developing a comprehensive antibiotic stewardship programme for primary and community care
 5. Data and Intelligence

- Within the context of the sub-regional strategy implementation of the action plan is at Clinical Commissioning Group and Local Authority footprint. Each locality has established a multidisciplinary AMR working group to progress implementation.
- AMR is a standing item on the Health Protection Fora through which the Directors of Public Health gain assurance with regard to Health Protection.
- National risk register contains AMR as well as the Cheshire and Merseyside LHRP risk register.

Key local stakeholders

Implementation of the strategy action plan requires cross sectoral involvement, but absolutely key are commissioners and providers including:

- 9 Local Authorities
- 12 CCGs
- Acute and Community Trusts
- Primary Care providers
- Care and nursing homes
- Community pharmacies

At a national and regional level there are many organisations with involvement and a vested interest in addressing antimicrobial resistance including:

- NICE
- Health Education England
- The Royal Colleges
- Public Health England NW
- NHS E C&M
- Cheshire and Merseyside Public Health Collaborative (ChaMPs)
- Primary and secondary education
- Undergraduate and postgraduate Medical, Dental, Nursing and Veterinarian education

Not addressing this issue will mean that within the next 5 years hospital beds will be closed due to outbreaks; deaths will occur from untreatable infections; and length of hospital stay will increase due to resistant health care acquired infections. To make the health and social care system sustainable investment is needed now.

2. Assumptions & Constraints

Assumptions and constraints will describe the context, given the continuing work to redefine and optimise pathways and services that each programme will need to support and underpin. This will include a series of assumptions and constraints about how the pathways or services will operate in the future.

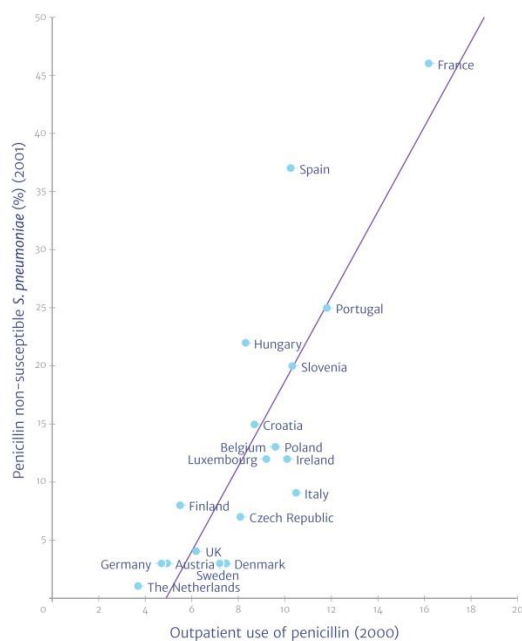
Your Plan should then describe which how your programme relates to, and contributes towards, the changes required in these pathways or services and how you will use them as parameters for your design work.

Your content starts here.....

Assumptions and constraints

- A key assumption is that a reduction in inappropriate antibiotic prescribing will reduce the number of resistant infections associated with high mortality and cost.
- What is known is that countries with high antibiotic use have high levels of resistant infections and that antibiotic consumption drives the development of resistance in both pathogens and normal bacteria carried by individuals without any harm.

THERE IS A HIGH CORRELATION BETWEEN ANTIBIOTIC USE AND RESISTANCE



Source: Goossens H, Ferech M, Vander Stichele R, et al. Outpatient antibiotic use in Europe and association with resistance: a cross-national database study. *Lancet* 2005; 365(9459): 579-87.

Review on Antimicrobial Resistance

- Without good antimicrobial stewardship and infection prevention and control practices in health, social care and community settings the existing multidrug resistant infections will continue to spread.
- New resistance patterns are developing at a faster rate than the development of new antimicrobial agents.
- Investment in the development and then judicious use of antibiotics and new antimicrobial agents is required so that treatment options for resistant infections remain.
- Reduction in antimicrobial use needs to be global and across all sectors including agriculture and veterinary practice.
- Alternative sources of antibiotics, such as the internet and cross counter sales, need to be restricted.
- The development of rapid diagnostics could transform the way we use antimicrobials in humans and animals: reducing unnecessary use, slowing AMR and so making existing drugs last longer, however, this will require investment
- Austerity and financial pressure across all sectors limits resources and opportunities
- The reduction in demand and use of antibiotics requires a universal program of public and professional education and fundamental change in behaviour.

- There is a potential conflict of the reduction in inappropriate antibiotic usage and the early recognition and treatment of sepsis to save lives.

There is work at a national and international level to address many of the above constraints.

3. Model of Care and/or Service Model

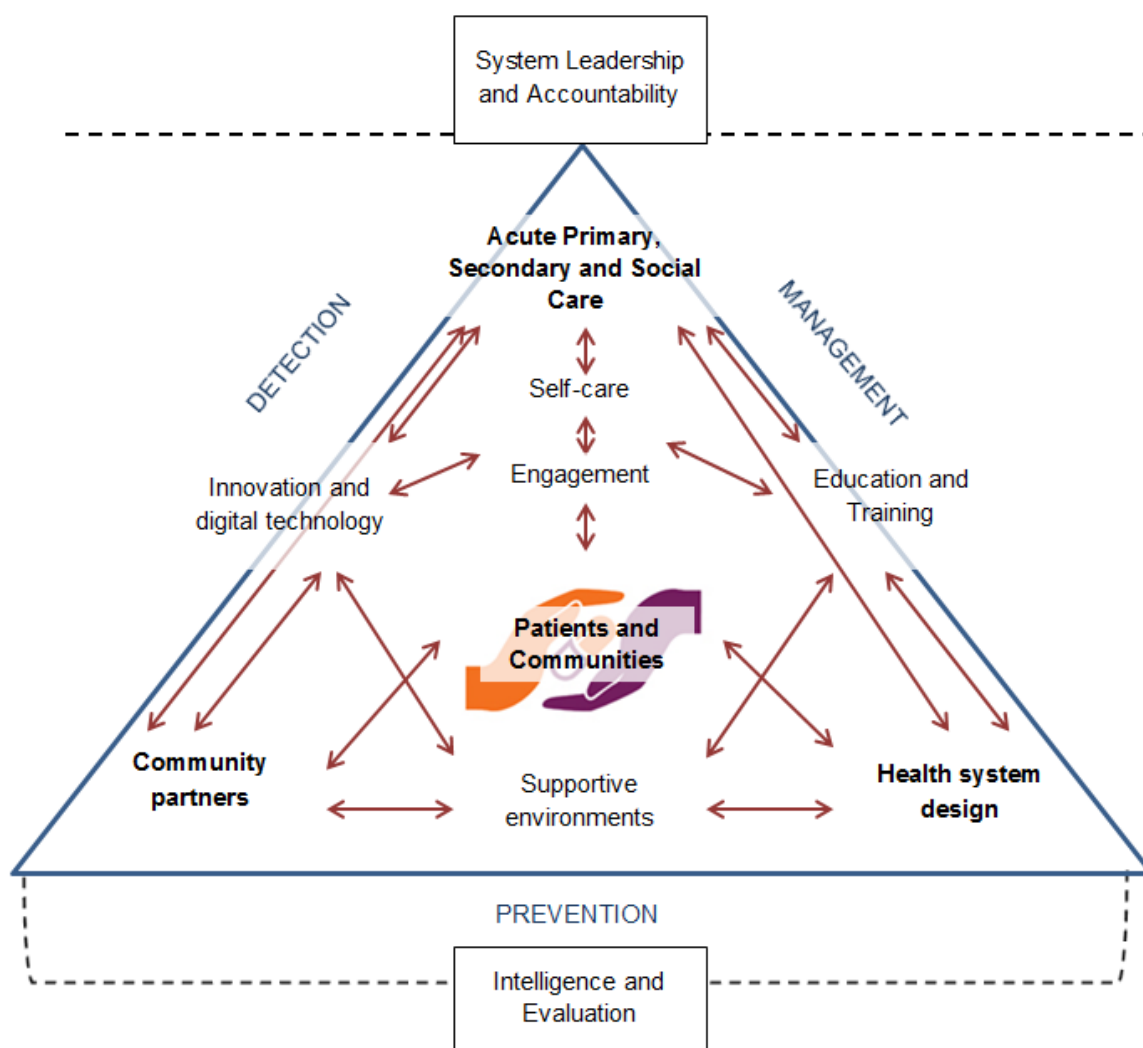
The profile for the pathway/service line being described should contain information regarding, but not limited to, the following;

- *The model of care, including how the three dimensions of quality will be delivered:*
 - *Patient Safety*
 - *Patient Experience*
 - *Clinical Effectiveness*
- *The Service Model, including:*
 - *Sub specialities*
 - *Location(s) of pathway/service delivery*
 - *Attributes of pathway/service delivery (those that merit highlighting)*

Your Plan should then describe which aspects of the model of care and service model you will use the change programme as an opportunity to further enhance.

Your content starts here....

The model proposed is embedded within the Cheshire and Merseyside Cross-sector approach to tackle AMR.



It focuses on the role of health and care providers but with clear and strong links with a wide range of partners across the system. Our model of care focuses on empowering patients and communities, enhancing the role of community pharmacies in managing infections which do not require antibiotics and being gate keepers for dispensing antibiotics.

How the model will deliver the 3 dimensions of quality:

- **Patient safety**

In order to ensure public and patient safety is not compromised, oversight by the NHSE with CCGs of complaints, litigation, incidents (and near misses), Patient Advice and Liaison Service, and patient experience reports from key stakeholders in relation to antibiotic prescribing is important.

Addressing the over use of antimicrobials will reduce the risk of patients acquiring multidrug resistant healthcare acquired infections and the preservation of the ability to perform safe elective and emergency surgery. This will also reduce the length of hospital stay, patient morbidity and mortality.

- **Patient experience**

The North West has secured the pilot for the National Public Engagement campaign for AMR. As part of this focus groups will be held to ascertain people's views regarding AMR and the reduction in inappropriate prescribing.

Patient experience will be improved due to reduced hospital stay and ease of discharge. There will be improved quality of care with timely treatment and reduced anxiety for patients.

In the evaluation of the pilot patient experience will be examined.

- **Clinical effectiveness**

The overall reduction in antibiotic prescribing in primary and secondary care result will result in specific antimicrobial use for specific infections and giving a better outcome for the patient

The reduction in prescribing of broad spectrum antibiotics in primary and secondary care will result in a reduction in prescribing costs making it cost-effective.

The implementation of delayed prescribing will maintain treatment options for severe infections, ultimately preserving life.

Delayed prescribing has also been shown over time to reduce the demand for primary care consultations.

There has been agreed a Pan-Mersey formulary which takes into account local resistance patterns. In addition this has been adopted by Cheshire, Warrington and Wirral leading to consistency and standardisation of prescribing.

In addition there has been a change in laboratory reporting across Cheshire and Merseyside so that there are consistent messages given to prescribers when bacteria found are normal and not representative of infection leading to reduced prescribing.

The service model focuses on:

- Patients and communities and the role of self-care
- Community partners
- Community pharmacies
- The primary care team
- Dental practices
- Secondary care
- Social care settings

Attributes

The implementation of the AMR action plan across Cheshire and Merseyside seek to gain consistency of action through multiple interventions which together will change public and professional expectations and practice. It is only by all aspects of the health and social care system along with a public awareness campaign that public and professional behaviour change will be achieved.

4. Performance

Performance should describe the current, as well as trend, levels of demand for the pathway/service being defined; this information should be contrasted with the current, as well as trend, capacity in

the pathway/service. This should lead to an explanation of the current, as well as trend, level of activity.

Your Plan should then describe which dimensions of the performance you will use the change programme to further transform and any opportunities for business development that you use the programme to exploit.

Your content starts here.....

Nationally, PHE produces a quarterly AMR surveillance data work book and template. The workbook contains antibiotic susceptibility testing data voluntarily submitted to the AmSurv system that is presented by PHE Centre geographies and England. The organism/antibiotic combinations presented in the work book are based on recommendations in the UK 5 Year Antimicrobial Resistance Strategy 2013 to 2018.

A panel of metrics will be used to monitor progress. This will also allow comparison between areas at local authority and LDS level to the average for England and the North West.

The panel of metrics includes:

Antimicrobial Resistance

- CCG-assigned MRSA rates by CCG and financial year
- % of E. coli blood specimens with susceptibility tests to a carbapenem; by quarter
- % of E. coli blood specimens with susceptibility tests to a 3rd Generation Cephalosporin; by quarter
- % of E. coli blood specimens with susceptibility tests to ciprofloxacin; by quarter
- % of E. coli blood specimens with susceptibility tests to gentamicin; by quarter
- % of E. coli blood specimens with susceptibility tests to piperacillin/tazobactam; by quarter
- % of community E. coli urine specimens with susceptibility tests to trimethoprim; by quarter
- % of community E. coli positive urine specimens non-susceptible to trimethoprim; by quarter
- % of community E. coli urine specimens with susceptibility tests to nitrofurantoin; by quarter
- % of community E. coli positive urine specimens non-susceptible to nitrofurantoin; by quarter

Antibiotic Prescribing

- Total number of prescribed antibiotic items per 1000 resident individuals by quarter
- Total number of prescribed antibiotic items per STAR-PU by quarter
- % of prescribed antibiotic items from cephalosporin, quinolone and co-amoxiclav class by quarter
- Twelve month rolling total number of prescribed antibiotic items per 1000 individuals per day
- Twelve month rolling total number of prescribed antibiotic items per STAR-PU
- Twelve month rolling % of prescribed antibiotic items from cephalosporin, quinolone and co-amoxiclav class

- Proportion of trimethoprim class prescribed antibiotic items as a ratio of trimethoprim to nitrofurantoin by quarter

Health Care Associated Infection

- All *C. difficile* rates by CCG and financial year
- All MRSA bacteraemia rates by CCG and financial Year
- CCG-assigned MRSA rates by CCG and financial year
- All MSSA rates by CCG and financial year
- All *E. coli* bacteraemia rates by CCG and Financial Year
- All *E. coli* bacteraemia counts by CCG and month
- All *C. difficile* counts by CCG and month
- Trust-assigned MRSA counts by CCG and financial year
- Third party-assigned MRSA counts by CCG and financial year
- All MRSA bacteraemia counts by CCG and month
- Trust-assigned MRSA bacteraemia counts by CCG and month
- CCG-assigned MRSA bacteraemia counts by CCG and month
- Third party-assigned MRSA bacteraemia counts by CCG and month
- All MSSA bacteraemia counts by CCG and month

Antimicrobial Stewardship engagement indicator

- Antibiotic Guardians per 100,000 population per calendar year by CCGs

Current activity/ demand (and trends)

- Medicines management within CCGs have data at an individual practice level, this shows that when delayed prescribing is implemented then antimicrobial prescribing starts to reduce. Investment is needed to support practices in implementing delayed prescribing.
- Data on prescribing is publically available at Local Authority level via 'Fingertips'. This shows that antimicrobial prescribing in Cheshire and Merseyside remains in the highest quintile for England.
- The 'AMR workbooks' provide drug /bug combination resistance data at LA level. This allows microbiological prescribing advice to be given to primary care regarding the best first choice antimicrobial. Investment in community microbiologists is needed to make this available across Cheshire and Merseyside.
- Secondary care review prescribing data on a monthly basis, but investment in antimicrobial pharmacists is needed to ensure that this happens reliably and in sufficient depth.
- Dental prescribing will be available at practice level by the end of the year, allowing high prescribing practices to be identified and supported to change practice.
- In 2017/ 18 targets have been set for Acute Trusts to publish:
 - total and broad-spectrum antibiotic prescribing by Defined Daily Dose (DDD) per 1000 admissions (2016/17 AMR CQUIN data)
 - The proportion of antibiotic prescriptions that are reviewed within 72 hours (2016/17 AMR CQUIN data)
 - Hospital-onset *E. coli* bloodstream infection (BSI) rates per occupied bed-days

- For Clinical Commissioning Groups to publish:
 - Rates of resistance to nitrofurantoin and trimethoprim among *E. coli* and other coliforms isolated from urine specimens submitted from the community
 - Ratio of trimethoprim to nitrofurantoin prescribing in community settings
- Over the last year a reduction in primary care prescribing has been demonstrated, however due to the high prescribing baseline Cheshire and Merseyside remains in the top quintile for antibiotic prescribing.

5. Staffing

This section should describe all those staff groups that make a substantive contribution to the delivery of the pathway/service being described. The current numbers, as well as the trends, should be graphically demonstrated for the following groups:

- *Social Care*
- *Medical*
- *Nursing*
- *Allied Health Professionals (AHP)*
- *Managerial*
- *Administrative and Clerical*

This section should also address the current position and trends relating to:

- *Sickness and absence*
- *Annual appraisals*
- *Recruitments and retention*
- *Availability*
- *Productivity*
- *Any on-going actions in response to staff surveys*

Your Plan should then describe which aspects of the pathway/service staffing you will use the change programme as an opportunity to further develop.

Your content starts here.....

Due to the nature of the cross-sector approach, the staffing groups that contribute to the delivery of the AMR reaches into many thousands, enabling actions at pace and scale. Key staff groups include:

- Community pharmacy staff
- Community dental staff
- Primary care teams including GPs, Practice nurses, Health care workers, receptionists
- Secondary care- Microbiologists, pharmacists, junior doctors, consultants, nursing staff.
- Directors of Public Health
- Quality leads in CCGs
- Medicines management leads

Key issues

- There is very limited availability of GP champions to help practices implement delayed prescribing and antibiotic audit. These champions need protected/ paid sessions in order to do this.
- Community microbiology advice is very limited. Again designated paid sessions are needed though this resource could be shared between areas with smaller populations.
- In secondary care there are pharmacists with AMR in their portfolio however this time is often not protected and vulnerable to not being prioritised during times of staffing pressures.
- Data on non- medical prescribers is not reported separately from the medical principle they prescribe for.
- Prescribing data is not available for private dental practices.
- For any prescription issued there is a six month window for it to be dispensed and this means that community pharmacists are key to ensuring that any antibiotics prescribed are for the current episode of illness and not for a subsequent episode. This will require additional time and may require an increase in the number of community pharmacies

Information Management & Technology

This section should describe the current, as well as planned use of IM&T as an enabler to the aims of the programme. The analysis should include current experience with IM&T including issues that cause problems. The levels of capability to use the IT systems should feature along with levels of support and training required.

Your Plan should then describe what new systems and other IM&T solutions form part of the wider improvement aspirations for the pathway/service and how they will be realised.

Your content starts here.....

Across Cheshire and Merseyside there is a need to implement electronic prescribing as some practices continue to use paper prescriptions. Prescribing at out of hours services and accident and emergency units is not reflected in the prescribing data.

In addition a patient information system which allows different organisations to see when a patient has a resistant infection alert on their notes from another Trust is needed. This will allow the receiving service to isolate the patient effectively, treat any infection appropriately and prevent spread of the resistant organism to others.

6. Facilities & Estates

This section should describe the future plans for pathway/service within a given environment(s). There will be a description of the facilities that will be required by, and made available to, the pathway/service as well as a comprehensive understanding of the space to be occupied. The section will also include details of equipment requirements that may be new or significant enhancements.

Your Plan should then describe how the pathway/service will deliver its vision for the future within the new environment.

Your content starts here.....

The AMR action plan can be put into place within existing facilities and estates belonging to key stakeholder partners, largely in community pharmacies, primary and secondary care.

Community pharmacies already have space for private consultations regarding the issue of antibiotic including a review of symptoms, although the capacity may need to be increased.

Improvement in available of molecular diagnostic techniques.

7. Interdependencies

This section should describe the current interdependencies that the pathway/service has with other teams and services. This includes both those products and services you require from others to operate successfully as well as those products and services that you provide which are essential to the operations of others. Any current issues should be highlighted along with the plans for the plans to resolve them.

Your Plan should then describe how those interdependencies will be assured through the programme of change. This could be by reference to programme participation as stakeholders; joining/monitoring a programme upon which you may have a key interdependency. Alternatively, you may simply choose to reference the specific programme plan that will be addressing that interdependency.

Your content starts here.....

Within this system, a wide range of interdependencies and partnership working is evolving between key stakeholders.

There are key interdependencies with:

- Healthcare-associated infection and infection prevention and control programmes, including:
 - reduction of infections in the first instance, and therefore need for antibiotics for example, reduction of urinary tract infections in care homes,
 - ensuring infections are diagnosed and treated quickly and effectively in line with treatment regimens
- Primary care quality improvement and medicines management programmes to tackle variation in quality of prescribing in primary care, including:
 - implementation of antimicrobial stewardship
 - comprehensive implementation of delayed/back-up prescribing
 - improving access to expert advice
 - robust education and training for prescribers on AMR
- Care home quality improvement programmes e.g. the care home award scheme recently piloted in Cheshire & Merseyside
- Public awareness, self-care and demand management programmes
- IT development programmes
- Laboratory
- Emergency planning, response and resilience programme

- Undergraduate and postgraduate education programmes

Key stakeholders include:

- 12 CCGs
- NHSE (C&M)
- NHS Providers
- Dentistry
- Community pharmacies
- PHE (NW and national)
- Cheshire and Merseyside Public Health Collaborative (Champs)
- Local Authorities
- Patient groups and representatives
- Health Education England
- Care home sector

The importance of interdependency is embedded within the Cheshire and Merseyside AMR strategy and action-plan. There has been multiagency multidisciplinary participation in developing the overarching strategy and action-plan for Cheshire and Merseyside. The programme steering group will be reviewed to assure the interdependencies.

Key outputs and outcomes from across the system will be captured into a single indicator panel metrics to support assurance.

At Local Authority/CCG level, local groups are at different stages of development to oversee implementation at a local level, and will include relevant local stakeholders across linked programmes. AMR is reported to Health and Wellbeing Boards through local Health Protection Fora, with different arrangements at local level to report through NHS Quality Fora. AMR has been added to the risk register of the Local Health Resilience Partnerships (LHRPs) in Cheshire and in Merseyside, and progress against plans will be monitored by the partnerships.

8. Benefits

This section should describe the impact the programme will have on the following three 'gaps' which are at the heart of the 5YFV:

- ***The health and wellbeing gap:*** *if the nation fails to get serious about prevention then recent progress in healthy life expectancies will stall, health inequalities will widen, and our ability to fund beneficial new treatments will be crowded-out by the need to spend billions of pounds on wholly avoidable illness.*
- ***The care and quality gap:*** *unless we reshape care delivery, harness technology, and drive down variations in quality and safety of care, then patients' changing needs will go unmet, people will be harmed who should have been cured, and unacceptable variations in outcomes will persist.*
- ***The funding and efficiency gap:*** *if we fail to match reasonable funding levels with wide-ranging and sometimes controversial system efficiencies, the result will be some combination of worse services, fewer staff, deficits, and restrictions on new treatments.*

*Your Plan should then describe which benefits will accrue against which 'gap' in terms of **baseline, target, and planned trend of improvement to meet the benefit target in time**. The objectives to support benefits realisation should be SMART objectives, that is: Specific, Measurable, Achievable, Realistic, Time bound.*

Your content starts here.....

Benefits to the health and wellbeing gap

If AMR is not addressed then within our lifetime surgery such as hip replacement will become too risky to perform due to the risk of infection and emergency surgery will have a high mortality risk as infections will not be able to be prevented or treated.

In addition, death due to community acquired infections, which were previously easily treated, will increase. The burden of this will fall disproportionately on the very young and very old, as well as on the least affluent part of society as this is where the greatest burden of disease lies. This will widen health inequalities.

Addressing the issue of AMR has the potential to reduce the length of hospital stay; reduce delays in time to surgery; reduce the cost of pharmaceuticals and facilitate patient discharge. These efficiencies could then be reinvested to introduce rapid diagnostics to further improve prescribing and infection prevention and control.

The care and quality gap

Without action and investment antibiotic resistance will continue to spread and new resistances develop for infections that can currently be treated. Over the last two years the rate of development of new resistance patterns has been far more rapid than expected.

As a result serious infections such as septicaemia will not be treatable and mortality will increase. Already antibiotics which were abandoned because of their severe side effects have to be used to treat such infections.

The number of urine infections which are resistant to antibiotics has increased year on year, requiring hospital admission and prolonging length of stay. The level of resistance will continue to rise unless preventative strategies are implemented.

In hospitals where outbreaks of multidrug resistant infection have occurred, the number of bed closures necessary to control the outbreak has led to severe pressures and has had a high financial and reputational cost to the organisation.

The funding and efficiency gap

At present it is not known what the return on investment for antimicrobial resistance is, however, PHE (Statistics and Modelling team) are estimating key parameters that can be used to estimate the cost of resistant infections in healthcare settings and (in the longer term) AMR in the community.

It is clear doing nothing is not an option, as this will mean that in the long term more will have to be spent to address antimicrobial resistance. Where the evidence of effectiveness is lacking, evaluation is a key part of the intervention.

To fully implement the action plan investment will be needed as there is not capacity in the system to accommodate the additional actions. The action plan is a suite of interventions which are synergistic and need to happen consistently across the Cheshire and Merseyside footprint. The effect of the whole will be greater than the sum of the parts.

9. Proposed Action Plan

*The art of the Action Plan is to ensure that it is comprehensive, compelling and timely. The Action Plan should address all of the salient points highlighted in the other sections of the report; namely, all those points where **Your Plan** will act as a change programme to help close the three gaps. As such, and like the executive summary, it should therefore contain no information that does not already appear in the contents of the PID.*

Otherwise, the content of the Action Plan should deliver milestones which address, but are not limited to, the following three 'gaps' (as described in the 'Benefits' Section above):

- **The health and wellbeing gap:** *if the nation fails to get serious about prevention then recent progress in healthy life expectancies will stall, health inequalities will widen, and our ability to fund beneficial new treatments will be crowded-out by the need to spend billions of pounds on wholly avoidable illness.*
- **The care and quality gap:** *unless we reshape care delivery, harness technology, and drive down variations in quality and safety of care, then patients' changing needs will go unmet, people will be harmed who should have been cured, and unacceptable variations in outcomes will persist.*
- **The funding and efficiency gap:** *if we fail to match reasonable funding levels with wide-ranging and sometimes controversial system efficiencies, the result will be some combination of worse services, fewer staff, deficits, and restrictions on new treatments.*

The 5YFV states that none of these three gaps is inevitable. A better future is possible – and with the right changes, right partnerships, and right investments we know how to get there. Changes to capacity and or activity in response to trends in demand

The Action Plan should also promote accountability by having a named individual for each task. Finally, the action planning must provide assurance as to how the change will be made to happen and that there is the capacity and capability in place to underpin delivery. All action plans should be governed by a Programme Board or similar entity.

Your content starts here.....

Cheshire and Merseyside Antimicrobial Resistance Strategy Action Plan – Overarching Areas for Development

	Area for Development	Suggested Action Plan	RAGB	Responsible persons / body	Evidence
1.	Ensure every Trust, Community Trust, [including non-medical prescribers] and CCG has an AMR action plan	<ul style="list-style-type: none"> ➤ Obtain assurances that every trust has an AMR action plan ➤ Obtain assurances that every trust has an Antimicrobial Stewardship Committee 			
2.	<p>Implement Back Up Prescribing for the treatment of upper respiratory tract infections</p> <p>Audit post implementation (read code 8BPO)</p>	<ul style="list-style-type: none"> ➤ Implement Back Up Prescribing via Practitioner-Centred Approach or Patient-Centred Approach (see appendix 2) ➤ Consider implementation in Accident and Emergency Departments, Walk-In Centres, Out Of Hours and with Non-Medical Practitioners. Consistency can be achieved by harmonising access to GP records. ➤ Consider involving Healthwatch prior to implementation 			
3.	Engagement – Pharmacy	<ul style="list-style-type: none"> ➤ Ensure consistent messages are given by all prescribers and all 			

	Care Homes	<p>pharmacists.</p> <ul style="list-style-type: none"> ➤ Pharmacies should support the AMR strategy as appropriate ➤ Consider scaling up of the Care Home Hygiene Award Scheme 			
4.	Ensure AMR awareness, stewardship and training is delivered to all prescribers, non-medical prescribers and health care workers	<ul style="list-style-type: none"> ➤ Target all prescribers (medical, non-medical, pharmacists) and consider including AMR in yearly mandatory training ➤ There are many training national resources available to support training (see appendix 2) ➤ Training should aim to address and meet the PHE Antimicrobial prescribing and stewardship competencies (see appendix 3) 			
5.	Support public facing media campaigns to aid and inform about Antimicrobial Resistance	<ul style="list-style-type: none"> ➤ Local Authorities and CCGs should consider local engagement with any national or international AMR campaigns and plan local activities to promote the initiative ➤ Dates where AMR can be promoted locally are: <ol style="list-style-type: none"> 1. European Antibiotic Awareness Day in mid-November¹ 2. The World Health Organisation's 			

¹ <http://ecdc.europa.eu/en/EAAD/Pages/Home.aspx>

		World Antibiotic Awareness Week in mid-November ²			
6.	Implementation of AMR and Stewardship education at the primary and secondary school level	<ul style="list-style-type: none"> ➤ It is recommended that the free 'e-Bug' resource produced by PHE is utilised in all schools to encourage a generational change in the attitude to the use of antibiotics http://www.e-bug.eu/ 			
7.	Identify a dedicated Community Microbiologist function to support AMR Stewardship	<ul style="list-style-type: none"> ➤ Ensure protected sessions are available and consider whether these can be enhanced to a more proactive and accessible clinical advisor service for GPs and other antibiotic prescribers in the community 			
8.	Identify an Antimicrobial Stewardship Lead GP	<ul style="list-style-type: none"> ➤ Establish whether this role exists already ➤ If not, consideration should be given to how this resource can be identified and secured 			
9.	Ensure that every secondary care trust is implementing PHE Start Smart - Then Focus toolkit (best practice recommendations)	<ul style="list-style-type: none"> ➤ Obtain assurances that every trust has implemented the tool kit, including a ward-focused antimicrobial team 			
10.	Ensure that every GP Practice is implementing	<ul style="list-style-type: none"> ➤ Obtain assurances that every GP 			

² <http://www.who.int/mediacentre/events/2015/world-antibiotic-awareness-week/event/en/>

	TARGET (Treat Antibiotics Responsibly, Guidance, Education, Tools) (best practice recommendations)	Practice has implemented the tool kit			
11.	Ensure every Trust and CCG has an Antimicrobial Pharmacist and ensure that they are provided with sufficient protected time to fulfil this role	<ul style="list-style-type: none"> ➤ Obtain assurances that every trust has a dedicated Antimicrobial Pharmacist 			
12.	Ascertain assurances that community antimicrobial formularies are confluent with secondary care antimicrobial formularies and obtain assurances that community antimicrobial formularies are used by primary care prescribers	<ul style="list-style-type: none"> ➤ Primary and secondary care formularies should dovetail ➤ Obtain assurances that Community Antimicrobial Formularies exist and include information regarding Antimicrobial Resistance 			

Cheshire and Merseyside Antimicrobial Resistance Strategy Action Plan by Responsible Body

Members of the Public Health England North West's Cheshire and Merseyside's Health Protection Team attended the Cheshire and Merseyside Directors of Public Health System Leadership Meeting on 15th July 2016. The AMR strategy and action plan was presented to the Directors of Public Health. This was a constructive meeting where several outcomes were agreed.

This included agreement to progress the action plan and assign actions for each responsible body:

	<u>Responsible Body</u>	<u>Area for Development</u>	<u>Suggested Action Plan</u>	<u>RAGB</u>	<u>Evidence</u>
1.	Clinical Commissioning Groups	Every CCG should have an AMR Action Plan	<ul style="list-style-type: none"> ➤ Obtain assurance ➤ A comprehensive AMR action plan that covers primary and secondary care is crucial for assurance and ongoing monitoring of local AMR activities 		
		Every CCG should have an AMR Steering Group	<ul style="list-style-type: none"> ➤ Obtain assurance 		
		Every CCG should have an Antimicrobial Stewardship Lead GP	<ul style="list-style-type: none"> ➤ Establish whether this role exists already ➤ If not, consideration should be given to how this resource can be identified and secured 		
		Every CCG should ensure AMR awareness, stewardship and	<ul style="list-style-type: none"> ➤ Target all prescribers (medical, non-medical, pharmacists) and consider 		

	<p>training is delivered to all prescribers, non-medical prescribers and healthcare workers (including in community settings such as district nurses and nursing home staff) across the CCG footprint and to consider including this in mandatory training</p>	<p>including AMR in yearly mandatory training</p> <ul style="list-style-type: none"> ➤ There are many training national resources available to support training (see appendix 2) ➤ Training should aim to address and meet the PHE Antimicrobial prescribing and stewardship competencies (see appendix 3) 		
	<p>Every CCG should identify a dedicated Community Microbiologist function to support AMR Stewardship</p>	<ul style="list-style-type: none"> ➤ Ensure protected sessions are available and consider whether these can be enhanced to a more proactive and accessible clinical advisor service for GPs and other antibiotic prescribers in the community 		
	<p>Every CCG should ensure that there are resources to fund an Antimicrobial Pharmacist and that there is sufficient protected time to fulfil this role</p>	<ul style="list-style-type: none"> ➤ Obtain assurances that every trust has a dedicated Antimicrobial Pharmacist 		
	<p>Every CCG should seek assurances from primary, secondary and tertiary care Trusts that they are progressing the AMR Action Plan and the areas for development that are specific to primary, secondary and tertiary care</p>	<ul style="list-style-type: none"> ➤ Obtain assurances 		
	<p>Every CCG should provide</p>	<ul style="list-style-type: none"> ➤ Obtain assurances 		

		assurances that the AMR Action Plan is progressing in primary, secondary and tertiary care to the Directors of Public Health via the Health Protection Forum			
		Every CCG should consider the required reduction in prescribing antibiotics necessary for CCGs to move from the current level of antibiotic prescribing (and associated quintile) to the lowest quintile (associated with the lowest level of antibiotic prescribing) when linking this to the relevant CQUIN and Quality Premium	<ul style="list-style-type: none"> ➤ Further information can be found here: ➤ https://www.england.nhs.uk/nhs-standard-contract/cquin/cquin-16-17/amr-cquin/ ➤ https://www.england.nhs.uk/wp-content/uploads/2016/03/quality-prem-guid-2016-17.pdf 		
		Every CCG should ascertain assurances that community antimicrobial formularies are confluent with secondary and tertiary care antimicrobial formularies and obtain assurances that appropriate community antimicrobial formularies are used by primary care prescribers	<ul style="list-style-type: none"> ➤ Primary, secondary and tertiary care formularies should dovetail ➤ Obtain assurances that Community Antimicrobial Formularies exist and include information about Antimicrobial Resistance 		
		Every CCG should support public facing media campaigns to aid and inform about Antimicrobial Resistance	<ul style="list-style-type: none"> ➤ Local Authorities and CCGs should consider local engagement with any national or international AMR campaigns and plan local activities to promote the initiative ➤ Dates where AMR can be promoted locally are: 		

			<ul style="list-style-type: none"> ➤ European Antibiotic Awareness Day in mid-November³ ➤ The World Health Organisation's World Antibiotic Awareness Week in mid-November⁴ 		
		Every CCG should share the Antimicrobial Resistance Strategy Action Plan and Checklist for Cheshire and Merseyside 2016 with appropriate stakeholders and partners	<ul style="list-style-type: none"> ➤ Namely: <ul style="list-style-type: none"> -Primary Care Organisations -Secondary and Tertiary Care Organisations -Pharmacies -NHS England 		
2.	Primary Care Organisations	Every GP Surgery should have an AMR Action Plan	<ul style="list-style-type: none"> ➤ Obtain assurances 		
		Every GP Surgery should have implemented and be utilising Back Up Prescribing	<ul style="list-style-type: none"> ➤ Implement Back Up Prescribing via Practitioner-Centred Approach or Patient-Centred Approach (see appendix 2) ➤ Consider implementation in Accident and Emergency Departments, Walk-In Centres, Out Of Hours and with Non-Medical Practitioners. Consistency can be achieved by harmonising access to GP records. ➤ Consider involving Healthwatch prior to implementation 		
		AMR awareness, stewardship and	<ul style="list-style-type: none"> ➤ Target all prescribers (medical, non- 		

³ <http://ecdc.europa.eu/en/EAAD/Pages/Home.aspx>

⁴ <http://www.who.int/mediacentre/events/2015/world-antibiotic-awareness-week/event/en/>

		<p>training should be delivered to all prescribers / non-medical prescribers and healthcare workers. Consideration should be given to including this in mandatory training</p>	<p>medical, pharmacists) and consider including AMR in yearly mandatory training</p> <ul style="list-style-type: none"> ➤ There are many training national resources available to support training (see appendix 2) ➤ Training should aim to address and meet the PHE Antimicrobial prescribing and stewardship competencies (see appendix 3) 		
		<p>GP Surgeries should support public facing media campaigns to aid and inform about Antimicrobial Resistance</p>	<ul style="list-style-type: none"> ➤ Local Authorities and CCGs should consider local engagement with any national or international AMR campaigns and plan local activities to promote the initiative ➤ Dates where AMR can be promoted locally are: <ol style="list-style-type: none"> 3. European Antibiotic Awareness Day in mid-November⁵ 4. The World Health Organisation’s World Antibiotic Awareness Week in mid-November⁶ 		
		<p>There should be an Antimicrobial Stewardship Lead GP for each GP Practice</p>	<ul style="list-style-type: none"> ➤ Establish whether this role exists already ➤ If not, consideration should be given to how this resource can be identified 		

⁵ <http://ecdc.europa.eu/en/EAAD/Pages/Home.aspx>

⁶ <http://www.who.int/mediacentre/events/2015/world-antibiotic-awareness-week/event/en/>

			and secured		
		Ensure every GP Practice has implemented the RCGP / PHE TARGET Toolkit	<ul style="list-style-type: none"> ➤ Obtain assurances that every GP Practice Is using the RCGP / TARGET Toolkit ➤ http://www.rcgp.org.uk/clinical-and-research/toolkits/target-antibiotics-toolkit.aspx 		
		Ascertain assurances that community antimicrobial formularies are confluent with secondary care antimicrobial formularies and obtain assurances that community antimicrobial formularies are used by primary care prescribers	<ul style="list-style-type: none"> ➤ Primary and secondary care formularies should dovetail ➤ Obtain assurances that Community Antimicrobial Formularies exist and include information regarding Antimicrobial Resistance 		
3.	Secondary and Tertiary Care Organisations	Ensure the Trust has an AMR Action Plan	<ul style="list-style-type: none"> ➤ Obtain assurances 		
		Ensure Trusts support and implement Back Up Prescribing where appropriate (e.g. A&E)	<ul style="list-style-type: none"> ➤ Ensure Accident and Emergency Departments are aware of and engage with the local and national AMR Strategy, particularly supporting Back Up Prescribing ➤ Consideration should be given to linking primary care medical and medication records with secondary and tertiary care hospital IT systems to ensure continuity of care. This will help ensure that secondary care clinicians are aware of any recent or pending Back Up Prescriptions when 		

			patients attend Accident and Emergency Departments		
		Ensure AMR awareness, stewardship and training is delivered to all prescribers / non-medical prescribers and healthcare workers – consider including this in mandatory training	<ul style="list-style-type: none"> ➤ Target all prescribers (medical, non-medical, pharmacists) and consider including AMR in yearly mandatory training ➤ There are many training national resources available to support training (see appendix 2) ➤ Training should aim to address and meet the PHE Antimicrobial prescribing and stewardship competencies (see appendix 3) 		
		Support public facing media campaigns to aid and inform about Antimicrobial Resistance	<ul style="list-style-type: none"> ➤ Local Authorities and CCGs should consider local engagement with any national or international AMR campaigns and plan local activities to promote the initiative ➤ Dates where AMR can be promoted locally are: European Antibiotic Awareness Day in mid-November⁷ ➤ The World Health Organisation's World Antibiotic Awareness Week in mid-November⁸ 		
		Ensure implementation of PHE Start Smart – Then Focus Toolkit	<ul style="list-style-type: none"> ➤ Obtain assurances that every trust has implemented the tool kit, including a 		

⁷ <http://ecdc.europa.eu/en/EAAD/Pages/Home.aspx>

⁸ <http://www.who.int/mediacentre/events/2015/world-antibiotic-awareness-week/event/en/>

			<ul style="list-style-type: none"> ➤ ward-focused antimicrobial team ➤ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/417032/Start_Smart_Then_Focus_FINAL.PDF 		
		Ensure every Trust has an Antimicrobial Pharmacist that is provided with sufficient protected time to fulfil the role	<ul style="list-style-type: none"> ➤ Obtain assurances that every trust has a dedicated Antimicrobial Pharmacist 		
		Ascertain assurances that community antimicrobial formularies are confluent with secondary care antimicrobial formularies and obtain assurances that community antimicrobial formularies are used by primary care prescribers	<ul style="list-style-type: none"> ➤ Primary and secondary care formularies should dovetail ➤ Obtain assurances that Community Antimicrobial Formularies exist and include information regarding Antimicrobial Resistance 		
4.	Pharmacies	Ensure Pharmacy engagement with the local and national AMR Strategy	<ul style="list-style-type: none"> ➤ Pharmacies should support the AMR strategy as appropriate 		
		Ensure consistent messages are given by all pharmacists in line with the local and national AMR strategy, particularly around supporting Back Up Prescribing	<ul style="list-style-type: none"> ➤ Pharmacies should support the AMR strategy as appropriate 		
5.	Directors of Public Health	Directors of Public Health should receive assurances from CCGs via Health Protection Fora that the AMR Strategy and Action Plan are progressing	<ul style="list-style-type: none"> ➤ Obtain assurances 		
		Implement AMR and Stewardship education at the primary and secondary school level (e.g. utilise	<ul style="list-style-type: none"> ➤ It is recommended that the free 'e-Bug' resource produced by PHE is 		

		e-Bugs resource)	utilised in all schools to encourage a generational change in the attitude to the use of antibiotics ➤ http://www.e-bug.eu/		
6.	NHS England	NHSE should support the implementation of the AMR Strategy and Action Plan where appropriate	➤ Provision of support where needed or requested		
		NHSE will obtain assurances that the AMR Strategy and Action Plan is progressing via Quality Surveillance Groups (QSGs)	➤ Obtain assurances		
7.	Public Health England North West Centre	Public Health England North West's Cheshire and Merseyside Centre will brief the Clinical Commissioning Groups (CCGs) on the AMR strategy and action plan at the CCG Committee(s)-in-common	➤ Briefing and support will be provided to CCGs as required		
		PHENW will provide expert advice and support where there are issues progressing the action plan	➤ Provision of support when requested		
		PHENW will provide oversight by attending Quality Surveillance Groups	➤ Attendance at Quality and Surveillance Groups		
		PHENW will provide oversight by attending Health Protection Fora	➤ Attendance at Health Protection Fora		
		PHENW to consider ways of scaling up Care Home Hygiene Award Scheme	➤ Local engagement, develop and provision of resources		

a) Annex

The aim of an annex is to add greater details, visuals and examples for better understanding of the main document (e.g. Performance – you may wish to display a visual as an annex to refer to from the text within this section)

Your content starts here.....

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2. Appendices

An appendix is different from an annex in that it can be considered without the main text; it is a document in its own right that still makes sense if it stands alone. It cannot be added to the main text but still has importance as regards the original document.

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