agenda

98th Meeting of the Public Health Agency Board

Thursday 21 December 2017 at 1:30pm

Conference Rooms 3+4, 12/22 Linenhall Street, Belfast

standing items

1 1.30	Welcome and apologies		Chair
2 1.30	Declaration of Interests		Chair
3 1.30	Minutes of Previous Meeting held on 16 November 2017		Chair
4 1.30	Matters Arising		Chair
5 1.35	Chair's Business		Chair
6 1.40	Chief Executive's Business		Chief Executive
7 1.50	Finance Report	**PHA/01/12/17**	Mr Cummings

items for noting

8 2.00	Surveillance of Antimicrobial Use and Resistance in Northern Ireland, Annual Report, 2017	**PHA/02/12/17**	Dr Harper
9 2.30	Research and Development Division Annual Report 2016/17	**PHA/03/12/17**	Dr Harper
10 2.50	PPI Update	**PHA/04/12/17**	Mrs Hinds

closing items

11 3.10	Any Other Business		Chair
12 3.15	Details of next meeting: *Thursday 15 February 2018 at 1:30pm* *Fifth Floor Meeting Room, 12/22 Linenhall Street, Belfast*		

HSC Public Health Agency

minutes

97th Meeting of the Public Health Agency Board

Thursday 16 November 2017 at 2.00pm

Conference Rooms 3+4, 12-22 Linenhall Street, Belfast

Present

Mr Andrew Dougal	-	Chair
Mrs Valerie Watts	-	Interim Chief Executive
Mrs Mary Hinds	-	Director of Nursing and Allied Health Professionals
Councillor William Ashe	-	Non-Executive Director
Mr Brian Coulter	-	Non-Executive Director
Mr Leslie Drew	-	Non-Executive Director
Mr Thomas Mahaffy	-	Non-Executive Director
Alderman Paul Porter	-	Non-Executive Director

In Attendance

Mr Paul Cummings	-	Director of Finance, HSCB
Mrs Joanne McKissick	-	External Relations Manager, PCC
Mr Robert Graham	-	Secretariat

Apologies

Mr Edmond McClean	-	Interim Deputy Chief Executive / Director of Operations
Dr Carolyn Harper	-	Director of Public Health/Medical Director
Mrs Fionnuala McAndrew	-	Director of Social Care and Children, HSCB
Ms Deepa Mann-Kler	-	Non-Executive Director

88/17	**Item 1 – Welcome and Apologies**
88/17.1	The Chair welcomed everyone to the meeting. Apologies were noted from Mr Edmond McClean, Dr Carolyn Harper, Mrs Fionnuala McAndrew and Ms Deepa Mann-Kler
88/17.2	The Chair welcomed the members of the public who had come to attend today's meeting.
89/17	**Item 2 - Declaration of Interests**
89/17.1	The Chair asked if anyone had interests to declare relevant to any items on the agenda. No interests were declared.

90/17 **Item 3 – Minutes of previous meeting held on 19 October 2017**

90/17.1 The minutes of the previous meeting, held on 19 October 2017, were approved as an accurate record of that meeting, subject to minor amendments.

91/17 **Item 4 – Matters Arising**

91/17.1 There were no matters arising. It was noted that the Secretariat had issued information to members related to the matters arising from the September Board meeting.

92/17 **Item 5 – Chair's Business**

92/17.1 The Chair's Business had been issued to members in advance of the meeting.

92/17.2 The Chair informed members that he had attended the PHA launch of the PPI/Engage website and he expressed his appreciation to the team for all of their work in getting this website up and running.

93/17 **Item 6 – Interim Chief Executive's Business**

93/17.1 The Interim Chief Executive advised members that the Permanent Secretary had published a report outlining the progress made in the first year following the launch of the Delivering Together strategy by the Minister. She noted that the Permanent Secretary had thanked all HSC staff for their work to date.

93/17.2 The Interim Chief Executive said that the HSC Leadership Strategy has now been published.

93/17.3 The Interim Chief Executive gave members an overview of the emergency planning arrangements that had been put in place during the time of storm Ophelia. She said that while there had been no significant impact, there was learning for similar future events.

93/17.4 The Interim Chief Executive informed members that she had attended, and delivered the closing remarks, at a Future Search event in relation to suicide. She said that she had also attended, and chaired, the most recent meeting of the Belfast Strategic Partnership.

93/17.5 The Interim Chief Executive advised that she had attended a meeting of the Chief Executives of the four UK public health organisations in Scotland, and that a variety of areas had been discussed, including Brexit, global health, adverse childhood event and UK-wide research and evaluation opportunities.

94/17 **Item 7 – Finance Report (PHA/01/11/17)**

94/17.1 Mr Cummings began his finance update by giving members an overview of the overall HSC financial situation. He said that following the announcement that the Northern Ireland budget has been approved for 2017/18 with a 5% increase for health, members should note that the figures presented are based on the opening position for 2016/17 and almost half the increase was non-recurrent. He advised that the pay award for 2017/18 may be funded this year, but in order for it to be funded recurrently, this may create further difficulties for future years.

94/17.2 Mr Cummings said that the PHA Finance Report for the period up to 30 September showed that the PHA's surplus has increased to £1.7m. He said that £1.3m of the surplus is due to a timing issue and he hoped that this figure would start to reduce. He added that a mid-year budget review meeting was due to take place inside the next 2 weeks.

94/17.3 In relation to the management and administration budget, Mr Cummings said that the underspend is due to staff turnover and he did not expect this situation to change. He said that if this surplus remained it may be necessary to declare this to the Department of Health.

94/17.4 Mr Drew asked when PHA would find out if any additional funding would be provided. The Interim Chief Executive indicated that following a recent meeting of the Permanent Secretaries Group, the Permanent Secretary for Health advised that there may be slippage across other departments which may be allocated to health.

94/17.5 Mr Coulter asked about the staff turnover and the significant number of vacancies. Mr Cummings said that the recruitment process is slow. The Interim Chief Executive added that a common issue for PHA is that when a post is recruited internally, it leaves another post vacant.

94/17.6 The Board noted the Finance Report.

95/17 **Item 8 – Family Nurse Partnership Revaluation Report (PHA/02/11/17)**

95/17.1 Mrs Hinds welcomed Ms Una Turbitt, Ms Deirdre Webb, Mr Wesley Emmett, Mr Andrew Harrison and Mr Andrew Darnton to the meeting. She said that the Family Nurse Partnership (FNP) programme is a pioneering programme and should be a key element of Programme for Government. She invited Ms Turbitt to begin the presentation.

95/17.2 Ms Turbitt began by thanking the Board for the opportunity to come and present this work. She advised that FNP had been commissioned initially by PHA. The international programme originates in the United States but has been adapted to make a difference to the lives of the mothers and children which it supports in NI.

95/17.3 Ms Turbitt explained that the programme was first implemented in the Western Trust, but there is now a small team operating within each HSC Trust. She said that the programme has a strong evidence base but that the recent Building Blocks research report carried out on behalf of Department of Health in England had raised some questions. The PHA public health nursing team felt that it was important to review the programme to ensure that it delivers safe, effective and compassionate care to young parents, and that PHA is delighted to have had the opportunity to be involved in this Revaluation. She said that Mr Andrew Harrison would give members an overview of the process for the revaluation, how the programme can be taken forward.

95/17.4 Mr Harrison began his presentation by saying that FNP has created value, as savings are being realised within areas such as residential care. He said that there is a clear return on the investment PHA has made and that the relationship infrastructure between nurse, mother and child has been key to the success of the programme.

95/17.5 Mr Darnton presented the theory of change model. He said that FNP breaks the cycle of poor parenting as almost all of the mothers on the programme have had experience of poor parenting. He added that in 10-15% of cases it can be shown that substantial savings have been made across all parts of the social care system.

95/17.6 Mr Emmett said that FNP creates a massive difference for some of the most vulnerable people in society. He said that PHA has taken the courage to invest in an initiative that is very powerful and it would be good if the programme could be rolled out more widely.

95/17.7 The Chair confirmed the cost of the programme is £1.75m. Ms Webb said that to implement the programme across the whole of Northern Ireland would cost £4m. The Chair noted that a new programme could only be delivered if there was new money and that PHA needed to be able to decide which areas were of higher priority when making decisions around expenditure. Mr Emmett reiterated his view that this programme is a high value initiative.

95/17.8 Ms Turbitt said that there are economies of scale. She said it is PHA's role to work across other departments and collaborate together for the greater good. Ms Webb added that through her experience, she has seen a lot of children go through the care system, but that there are other children who are equally vulnerable, particularly in areas of high deprivation who need assistance. Mr Harrison said that in Scotland, the programme has been rolled out across the whole country following a successful pilot in some areas.

95/17.9 Alderman Porter sought clarity as to whether the views of participants had been sought when compiling the report. Mr Harrison said that the Belfast Trust had hosted a workshop which gave mothers an opportunity to tell their stories. Alderman Porter asked about the support for staff who are

dealing with the most vulnerable young mothers. Ms Webb said supervision is important for these staff and that they would have regular meetings with their managers.

95/17.10 Mr Coulter asked Ms Turbitt about other evaluations that had been done. Ms Turbitt said that a number of randomised controlled trials have been undertaken but acknowledged that improved understanding is needed about the impact of early intervention. She explained that for any child, if there are four or more "adverse childhood experiences", it is highly likely that their long term health and wellbeing will be affected, for example, they will be more likely to be involved with the youth justice system. Mr Coulter said that he would wish to look at some of the end user stories. He expressed concerns about some of the metrics used within the report and felt that evidence needed to be seen over a longer period of time.

95/17.11 Councillor Ashe said that he welcomed the presentation as he has been involved in projects dealing with teenage pregnancy in his local area. He noted that in Scotland 56% of the children living in poverty do not live in the top 10% most deprived areas. He added that in his opinion, this is an excellent project.

95/17.12 Mrs McKissick said that she had had the opportunity to attend one of the sessions and thought it was an inspirational experience. The Interim Chief Executive added that she was very impressed with the work but would like to have been able to read more of the stories. Mr Harrison said that he would be happy to address any other queries that members had.

95/17.13 The Chair thanked all of the people involved in the preparation of the report.

96/17 Item 9 – Northern Ireland Diabetic Eye Screening Programme Pre-Consultation Exercise (PHA/03/11/17)

96/17.1 The Chair welcomed Claire Armstrong from PHA and Raymond Curran from HSCB who were attending the meeting for this item on behalf of Dr Harper.

96/17.2 Mr Curran advised members that the Diabetic Eye Screening Programme (DESP) is going through a period of change and that the Programme Board had agreed that there should be a pre-consultation exercise to look at potential future models for the scheme. To date, he said that there has been extensive engagement and that following this a screening process will identify options which will go out to full public consultation.

96/17.3 Mr Drew said that the paper was very helpful. He asked whether the "High Street" option (Option 5) would require external procurement. Mr Curran confirmed that this would be the case.

96/17.4 The Chair asked about larger primary care centres. Mr Drew felt that

these wellbeing centres were not being utilised effectively for frontline services, but Mrs Hinds disagreed with this view. Mr Curran said that the options outlined in the paper are reflective of a more progressive approach.

96/17.5 Mr Coulter asked if the capital costs are one-off costs. Mr Curran said that these are largely IT costs. Mr Coulter asked how the figure of £2.2m for the "High Street" option was arrived at. Mr Curran said that these are indicative costs based on modelling some across different jurisdictions, and that. He added that there have not been any negotiations with primary care optometrists.

96/17.6 Mr Coulter asked if the recruitment issues have been addressed. Mr Curran advised that these had been resolved, but that there was a need to build resilience and capacity within the programme.

96/17.7 The Board noted the Northern Ireland Diabetic Eye Screening Programme pre-consultation exercise.

97/17 Item 10 – PHA Community Planning Update (PHA/04/11/17)

97/17.1 The Chair welcomed Miss Julie Mawhinney who was attending the meeting for this item on behalf of Mr McClean.

97/17.2 Miss Mawhinney said that the aim of this paper was to give members an update on what PHA has been inputting into the community planning process. She advised that to date, all of the local Councils' community plans had been agreed with the exception of Belfast City Council and Derry and Strabane Council. She added that PHA staff have played a key role and have initiated meetings with HSC and Council Chief Executives.

97/17.3 Miss Mawhinney explained that there are four key areas of focus (early years, age-friendly, physical activity and mental health) and that it is important that these are aligned with the objectives in Making Life Better and Programme for Government. In terms of challenges, she noted that the main challenge for PHA is resources, but there is also a challenge in terms of the number of different reporting and monitoring systems being used. She advised that PHA had raised its concern about this with the Department for Communities and the Permanent Secretaries Group.

91/17.4 Alderman Porter said that PHA needed to be careful to ensure that some areas are not given more funding than others. Miss Mawhinney advised that a lot of the work PHA is doing is building on existing work.

91/17.5 Mr Drew picked up on the issue of different monitoring systems. The Interim Chief Executive said that she has continually raised this issue at meetings as it will be difficult for HSCB and PHA to assist 11 different Councils if there are many different systems.

91/17.6	Mrs McKissick raised the issue of access to swimming pools and toilets. Mrs Hinds said that PHA is working with Councils to ensure that public toilets are kept open. She added that there needs to be joined up approach as incontinence is becoming a major issue.
91/17.7	The Board noted the update on community planning.
98/17	**Item 11 – Any Other Business**
98/17.1	The Chair advised that a schedule of meeting dates for 2018 will be issued to members next week.
99/17	**Item 12 – Date and Time of Next Meeting**
	Thursday 21 December 2017 at 1.30pm
	Conference Rooms 3+4, 12/22 Linenhall Street, Belfast.
	Signed by Chair:
	
	Date: 21 December 2017

Public Health Agency

Finance Report

2017-18

Month 7 - October 2017

PHA Financial Report - Executive Summary

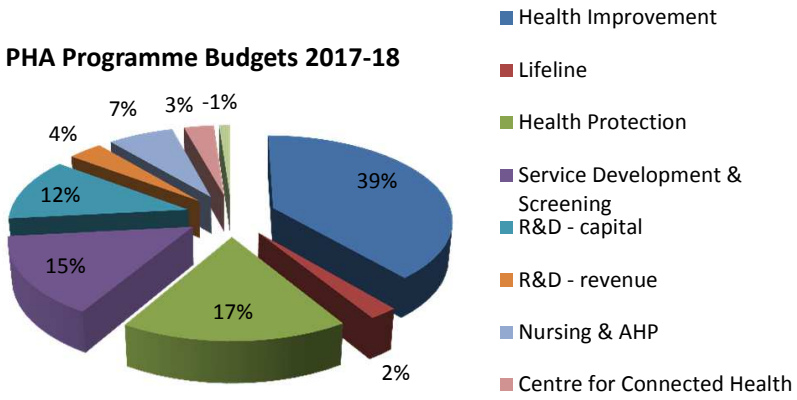
Year to Date Financial Position (page 2)

At the end of month 7 PHA is underspent against its profiled budget by approximately £0.6m. Whilst this is not unusual for this stage of the year due to the difficulty of accurately profiling expenditure, budget managers will continue to be encouraged to review their positions and take the necessary action to minimise underspends.

This underspend is primarily within salaries budgets across the Agency, offset by Commissioning spend ahead of profile in a number of areas.

Programme Budgets (pages 3&4)

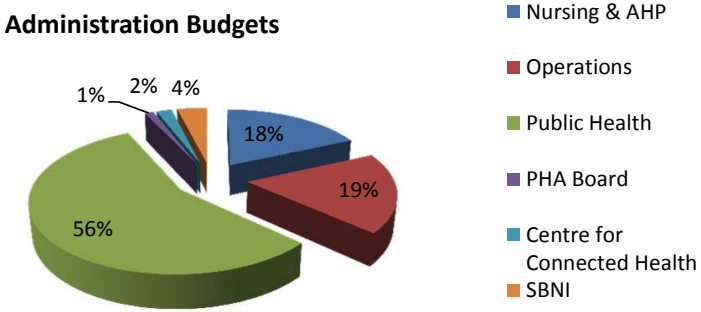
The chart below illustrates how the Programme budget is broken down across the main areas of expenditure.



Administration Budgets (page 5)

Approximately half of the Administration budget relates to the Directorate of Public Health, as shown in the chart below.

There are currently approximately 30 vacant posts within PHA, and this is creating slippage on the Administration budget. It is currently estimated that this could rise to over £1m by year end, and this will be kept under close review as the year progresses.



Full Year Forecast Position & Risks (page 2)

PHA is currently forecasting a breakeven position for the full year. Early projections indicate slippage will arise in-year from the Lifeline and Adminstration budgets in particular. Management will re-invest the Lifeline slippage in other suicide prevention and mental health initiatives where possible, however this remains an area of risk.

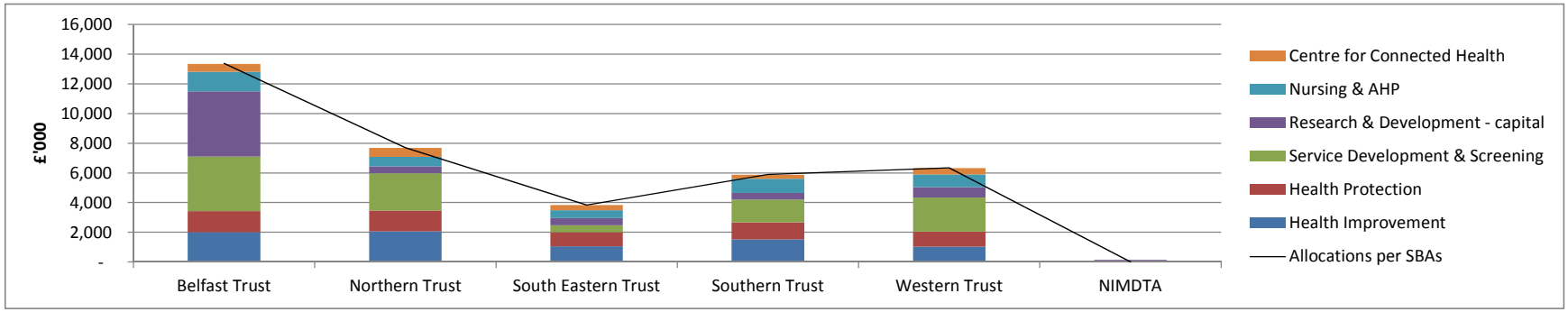
Public Health Agency
2017-18 Summary Position - October 2017

	Annual Budget				Year to Date			
	Programme		Mgt & Admin	Total	Programme		Mgt & Admin	Total
	Trust	PHA Direct			Trust	PHA Direct		
	£'000	£'000	£'000	£'000	£'000	£'000	£'000	£'000
Available Resources								
Departmental Revenue Allocation	30,620	45,278	19,090	**94,987**	17,862	19,030	10,992	**47,882**
Revenue Income from Other Sources	-	176	386	**562**	-	52	221	**273**
Total Available Resources	30,620	45,454	19,476	**95,549**	17,862	19,081	11,213	**48,156**
Expenditure								
Trusts	30,620	-	-	**30,620**	17,862	-	-	**17,862**
PHA Direct Programme *	-	45,454	-	**45,454**	-	19,307	-	**19,307**
PHA Administration	-	-	19,476	**19,476**	-	-	10,388	**10,388**
Total Proposed Budgets	30,620	45,454	19,476	**95,550**	17,862	19,307	10,388	**47,557**
Surplus/(Deficit) - Revenue	-	-	-	-	-	(226)	825	599
Cumulative variance (%)					***0.00%***	***-1.18%***	***7.35%***	***1.24%***

The year to date financial position for the PHA shows an underspend against profiled budget of approximately £0.6m, mainly due to an underspend on Administration budgets (see page 5) offset by some PHA Direct expenditure ahead of profile (see page 4). It is currently anticipated that the PHA will breakeven for the year.

** PHA Direct Programme includes amounts which may transfer to Trusts later in the year*

Programme Expenditure with Trusts

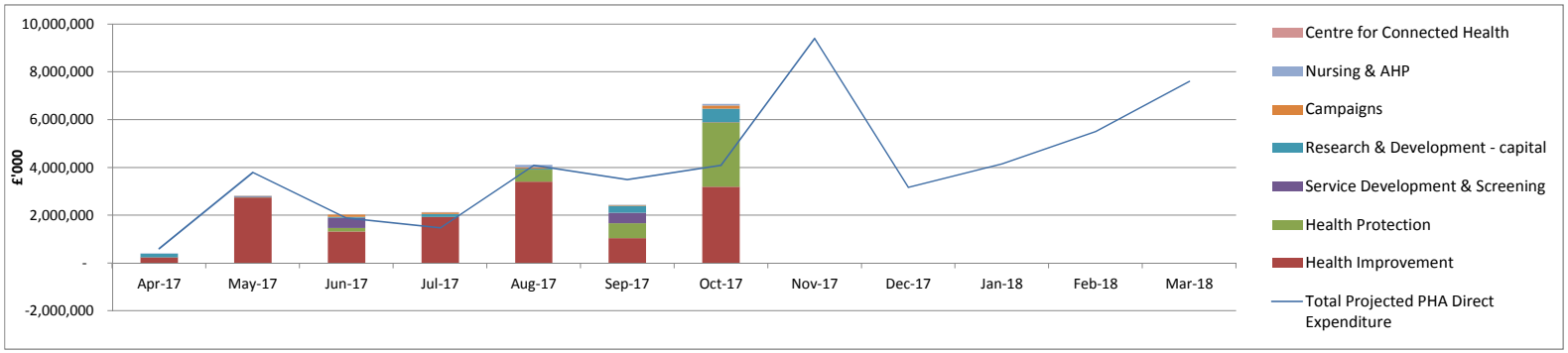


Current Trust RRLs	Belfast Trust £'000	Northern Trust £'000	South Eastern Trust £'000	Southern Trust £'000	Western Trust £'000	NIMDTA £'000	Total Planned Expenditure £'000	YTD Budget £'000	YTD Expenditure £'000	YTD Surplus / (Deficit) £'000
Health Improvement	2,009	2,068	1,059	1,512	1,041	-	**7,689**	4,485	4,485	-
Health Protection	1,408	1,403	947	1,150	1,009	-	**5,916**	3,451	3,451	-
Service Development & Screening	3,679	2,495	465	1,536	2,293	-	**10,467**	6,106	6,106	-
Nursing & AHP	1,304	631	516	954	857	-	**4,262**	2,486	2,486	-
Centre for Connected Health	528	616	348	282	425	-	**2,199**	1,283	1,283	-
Chief Executive	37	14	11	12	11		**86**	50	50	-
Total current RRLs	**8,965**	**7,227**	**3,346**	**5,446**	**5,636**	**-**	**30,620**	**17,862**	**17,862**	-
Cumulative variance (%)										***0.00%***

The above table shows the current Trust allocations split by budget area.

During the current month, an exercise to re-align budgets between Trust and PHA Direct budgets has been carried out, and profiles have been amended accordingly. This explains the year to date breakeven position. A breakeven position is also anticipated for the full year.

PHA Direct Programme Expenditure



	Apr-17 £'000	May-17 £'000	Jun-17 £'000	Jul-17 £'000	Aug-17 £'000	Sep-17 £'000	Oct-17 £'000	Nov-17 £'000	Dec-17 £'000	Jan-18 £'000	Feb-18 £'000	Mar-18 £'000	Total £'000	YTD Budget £'000	YTD Spend £'000	Variance £'000	
Projected Expenditure																	
Health Improvement	306	3,457	1,058	753	3,308	1,094	2,162	5,615	419	1,885	4,297	2,164	**26,518**	12,138	12,719	(581)	*-4.8%*
Lifeline	264	264	264	264	264	264	(622)	138	138	138	465	138	**1,980**	964	1,104	(140)	*-14.5%*
Health Protection	-	27	31	131	424	1,429	1,764	2,213	942	844	613	956	**9,373**	3,805	3,772	33	*0.9%*
Service Development & Screening	34	47	456	34	65	456	152	39	430	88	8	770	**2,579**	1,244	1,158	86	*6.9%*
Research & Development - revenue	-	-	-	-	-	-	-	1,067	1,067	1,067	-	-	**3,200**	-	-	-	*0.0%*
Campaigns	-	-	-	-	-	205	205	45	50	-	-	20	**525**	410	355	55	*-100.0%*
Nursing & AHP	1	1	12	35	1	22	40	472	307	315	305	290	**1,800**	111	199	(88)	*-79.3%*
Centre for Connected Health	-	-	-	-	20	20	418	20	20	20	20	20	**560**	459	-	459	*100.0%*
Other	-	-	-	-	-	-	(50)	(206)	(206)	(206)	(206)	(206)	**(1,082)**	(50)	-	(50)	*100.0%*
Total Projected PHA Direct Expenditure	**605**	**3,795**	**1,821**	**1,217**	**4,082**	**3,490**	**4,070**	**9,402**	**3,166**	**4,149**	**5,503**	**4,152**	**45,454**	**19,081**	**19,307**	(226)	
Cumulative variance (%)																***-1.18%***	
Actual Expenditure	**294**	**2,835**	**2,016**	**2,050**	**3,807**	**2,190**	**6,115**	**-**	**-**	**-**	**-**	**-**	**19,307**				
Variance	**311**	**961**	**(195)**	**(832)**	**275**	**1,300**	**(2,045)**						**(226)**				

The budgets and profiles are shown after adjusting for retractions and new allocations in the Allocation Letter from DoH. The Campaigns budget has been entirely retracted, and the negative budget in the Other line is required after various Programme budgets were increased to allow PHA to absorb anticipated slippage on Administration budgets.

Expenditure is £0.2m ahead of profile for the year to date, mainly due to expenditure in advance of profile within Health Improvement (including Lifeline), offset by slippage within the Centre for Connected Health. The negative Lifeline budget in October reflects the reallocation of some of this funding to other suicide prevention and mental health initiatives within Health Improvement.

Budget managers will continue to review variances closely throughout the remainder of the year to ensure PHA meets its breakeven obligations.

PHA Administration

2017-18 Directorate Budgets

	Nursing & AHP £'000	Operations £'000	Public Health £'000	PHA Board £'000	Centre for Connected Health £'000	SBNI £'000	Total £'000
Annual Budget							
Salaries	3,087	2,377	10,493	230	317	462	**16,967**
Goods & Services	471	1,208	464	33	74	298	**2,548**
Price Inflation				62			**62**
Savings target				(100)			**(100)**
Total Budget	**3,559**	**3,585**	**10,958**	**225**	**391**	**760**	**19,477**
Budget profiled to date							
Salaries	1,817	1,386	6,130	112	185	225	**9,856**
Goods & Services	247	706	279	12	32	83	**1,357**
Total	**2,063**	**2,091**	**6,409**	**124**	**218**	**308**	**11,213**
Actual expenditure to date							
Salaries	1,751	1,312	5,758	54	196	225	**9,296**
Goods & Services	259	496	255	(31)	31	83	**1,092**
Total	**2,010**	**1,807**	**6,013**	**22**	**227**	**308**	**10,388**
Surplus/(Deficit) to date							
Salaries	66	74	372	58	(11)	(0)	**560**
Goods & Services	(13)	210	24	43	1	0	**265**
Surplus/(Deficit)	**53**	**284**	**396**	**102**	**(10)**	**0**	**825**
Cumulative variance (%)	*2.58%*	*13.58%*	*6.17%*	*81.98%*	*-4.50%*	*0.00%*	***7.35%***

A savings target of £0.1m was applied to the PHA's Administration budget in 2017-18. This is currently held centrally within PHA Board, and will be managed across the Agency through scrutiny and other measures.

The year to date salaries position is showing a surplus which is being generated by approximately 30 vacancies currently within PHA. It is likely that this will continue to grow as the year progresses, and senior management will monitor this closely in the context of PHA's obligation to achieve a breakeven position for the financial year.

Public Health Agency
2017-18 Capital Position - October 2017

	Annual Budget				Year to Date			
	Programme		Mgt & Admin	Total	Programme		Mgt & Admin	Total
	Trust £'000	PHA Direct £'000	£'000	£'000	Trust £'000	Direct £'000	£'000	£'000
Available Resources								
Capital Grant Allocation & Income	6,663	3,791	-	**10,454**	3,887	335	-	**4,220**
Expenditure								
Capital Expenditure - Trusts	6,663	-	-	**6,663**	3,887	-	-	**3,887**
Capital Expenditure - PHA Direct	-	3,791	-	**3,791**	-	1,210	-	**1,210**
	6,663	3,791	-	**10,454**	3,887	1,210	-	**5,097**
Surplus/(Deficit) - Capital	-	-	-	-	-	(875)	-	**(875)**
Cumulative variance (%)					*0.00%*	*-261.57%*	*0.00%*	***-20.74%***

PHA has received a Capital budget of £10.5m in 2017-18, most of which relates to Research & Development projects in Trusts and other organisations. Expenditure for the year to date is approximately £0.9m ahead of profile, and a breakeven position is anticipated for the full year.

** PHA Direct Programme includes amounts which may transfer to Trusts later in the year*

PHA Prompt Payment

Prompt Payment Statistics

	October 2017 Value	October 2017 Volume	Cumulative position as at 31 October 2017 Value	Cumulative position as at 31 October 2017 Volume
Total bills paid (relating to Prompt Payment target)	£7,781,555	499	£27,989,188	3,110
Total bills paid on time (within 30 days or under other agreed terms)	£7,735,901	481	£27,676,216	2,904
Percentage of bills paid on time	**99.4%**	**96.4%**	**98.9%**	**93.4%**

Prompt Payment performance for the year to date shows that on value the PHA is achieving its 30 day target of 95%, although on volume performance is slightly below target at 93.4%. PHA is making good progress on ensuring invoices are processed promptly, and efforts to maintain this good performance will continue for the remainder of the year.

The 10 day prompt payment performance remained strong at 93.5% by value for the year to date, which significantly exceeds the 10 day DoH target for 2017-18 of 60%.

HSC Public Health Agency

board paper

Surveillance of Antimicrobial Use and Resistance in Northern Ireland, Annual Report 2017

date	21 December 2017	**item**	8	**reference**	PHA/02/12/17
presented by	Dr Carolyn Harper, Medical Director				
action required	For noting				

Summary

The Department of Health published a five year Strategy for Tackling Antimicrobial Resistance in 2012, with an objective "to establish and maintain systems to monitor antimicrobial usage and surveillance of resistance". This report is a product of systems established in response to this goal. It demonstrates increasing incidence and increasing resistance of many bloodstream infections, particularly *E. coli* and *K. pneumoniae*. Notably, there are higher proportions of *E. coli*, *K. pneumoniae* and Pseudomonas species resistant to piperacillin/tazobactam in NI compared to England.

Total antibiotic consumption in Northern Ireland has remained unchanged for three years at 32 defined daily doses (DDD) per 1,000 inhabitants, with little overall change in primary or secondary care. The use of carbapenems declined over time, which is an encouraging trend. Use of co-amoxiclav also fell markedly in 2016, and trimethoprim use fell slightly. In general, however, comparison with antimicrobial use in England highlights substantially higher use in Northern Ireland. For example, Piperacillin/tazobactam consumption remained unchanged in 2016 at 0.21 DDD per 1,000 inhabitants per day, which is more than twice the declining rate in England (0.1 DDD per 1,000 inhabitants per day). The information in this report will help direct improvement of the quality and safety of healthcare. In future, we aim to provide more detailed intelligence to help reduce inappropriate antibiotic prescribing and antimicrobial resistance.

The report was launched at PHA's World Antibiotic Awareness Week symposium on 13 November and is available on the PHA website.

Equality Impact Assessment

N/A

Recommendation

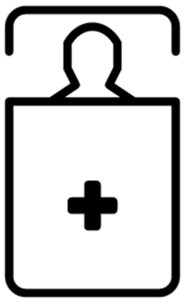
The Board is asked to **NOTE** the report.

HSC Public Health Agency

Surveillance of Antimicrobial Use and Resistance in Northern Ireland, Annual Report, 2017

Contents

Executive summary

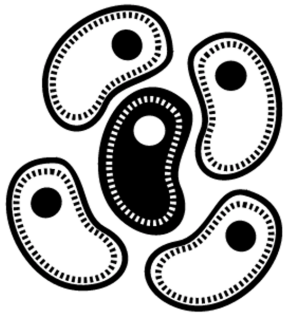


E. coli
Bloodstream Infection
980 in 2009
1487 in 2016

K. pneumoniae
Bloodstream Infection
143 in 2009
208 in 2016

E. coli resistance to
Piperacilin-tazobactam
8.8% in 2009
15.6% in 2016

K. pneumoniae resistance to
Piperacillin-tazobactam
8.6% in 2009
19% in 2016



Antibiotic Prescribing:
Primary care: 85%
Secondary care: 15%

2014 2015 2016

No change in total antibiotic use from 2014 to 2016 @ 32 DDD / 1000 inhabitants / day

Authors

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Declan Bradley, MB ChB, MA, MPH, PhD, MRCP(UK), FFPH

Acknowledgements

The information produced in this report is based on information derived from data submitted by Health and Social Care Trust microbiology and pharmacy staff, and we thank them for the time and effort involved in producing these data.

We also thank the members of the Epidemiology Subgroup of the Healthcare-associated Infection and Antimicrobial Stewardship Improvement Board for their advice on the development of the report, noting in particular the assistance of David Farren, Derek Fairley and Sara Hedderwick.

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Date generated: 09/11/2017

Background

Antibiotics have been one of the most important life-saving medical developments of the last century. When a course of antibiotics is prescribed, they will only work against certain types of bacteria and not others (so-called intrinsic resistance). In addition, some bacteria can develop tolerance to certain antibiotics or develop ways to break them down (so-called extrinsic resistance). In either case, if these go on to cause an infection it can be much more difficult to treat. This is called “antimicrobial resistance”. There is a risk of selecting for the survival of antimicrobial resistant organisms any time that antibiotics are used. Being prescribed a single course of antibiotics increases a person’s chance of acquiring resistant bacteria[1]. If the use of antibiotics remains unchecked, common infections will become more dangerous, and surgical procedures that require antibiotics will become more difficult to perform safely. Antimicrobial-resistant infections already cause illness and death for patients, and also disrupt care in hospitals. Reducing the use of antibiotics where they are not necessary now will help keep antibiotics working in the future. In recognition of this, the Department of Health (then the Department of Health, Social Services and Public Safety) published a five year Strategy for Tackling Antimicrobial Resistance (STAR 2012-2017) in 2012[2]. One of the key objectives of STAR was “to establish and maintain systems to monitor antimicrobial usage and surveillance of resistance”. This report is a product of the systems that have been established in response to this goal.

The tasks of preventing and reducing antimicrobial resistant infections, and reducing antimicrobial consumption are led at a policy level in Northern Ireland by the Department of Health-chaired Strategic Antimicrobial Resistance and Healthcare-associated Infection (SAMRHAI) group, which includes representatives responsible for animal and environmental as well as human health. For translating policy and strategy into action for human health, the Public Health Agency leads a multi-agency group, the Healthcare-associated Infection and Antimicrobial Stewardship Improvement Board, which has a number of themed subgroups that are responsible for regional efforts to reduce harm from antimicrobial use and resistance in different settings. This report is issued under the auspices of the Improvement Board. The report is divided into two major sections. The first describes trends in antibiotic resistance in Northern Ireland. We selected combinations of bacteria and antibiotics in line with those identified as key indicators as part of the UK Antimicrobial Resistance strategy[3]. In addition, we have made reference to additional bacteria-antibiotic combinations included in the English surveillance programme for antimicrobial utilisation and resistance (ESPAUR) report[4].

The second section describes the trends in antibiotic consumption in Northern Ireland. Antibiotic consumption is the key driver for the emergence of resistance. Antibiotics are prescribed across a range of settings including primary care (GP), secondary care (hospitals) and by dentists. In this inaugural report, we provide information for primary and secondary care. We aim to provide more detailed information about different healthcare settings and clinical specialities in future reports.

The aim of the report is to describe trends in antimicrobial resistance and antibiotic consumption in Northern Ireland. As surveillance data is information for action this report will inform and drive best practice in antimicrobial prescribing.

Method

Antibiotic resistance

Data sources

Testing for bacteria in human biological specimens and their susceptibility to antibiotics is conducted in laboratories in five Health and Social Care Trusts in Northern Ireland. Infections that meet certain criteria, usually the most severe that occur in the blood (bacteraemias), are reported voluntarily to the Public Health Agency's CoSurv Information System from each Trust's microbiology and/or virology laboratories. The resistance data included in this report includes selected bacteraemias that were reported to the PHA during 2009 - 2016 (presented by calendar year).

The data for carbapenemase producing organisms (CPO) has been collected as part of a voluntary reporting service. In cases where a microbiology laboratory suspects a CPO, the specimen is submitted to Public Health England's (PHE) Antimicrobial Resistance and Healthcare Associated Infections (AMRHAI) reference unit for investigation. The reference lab then notifies the PHA of positive results. Confirmed isolates include both colonisations and infections.

Definitions

Hospital microbiology laboratories report antimicrobial susceptibility test results "susceptible", "intermediate" or "resistant". For the purpose of this report, antibiotic susceptibility test results reported as "intermediate" or "resistant" were combined and presented as "non-susceptible". For analysis of resistance to more than one antibiotic, multidrug resistance (MDR) was defined as acquired non-susceptibility to at least one agent in three or more antimicrobial classes.

Antibiotic consumption

Data sources

Consumption data for primary and secondary care was obtained using the data submitted to the European Antimicrobial Consumption Surveillance Network (ESAC-Net). The primary care antimicrobial consumption data were extracted from the Electronic Prescribing Database by the Health and Social Care Board. The data includes all Health and Social Care (HSC; equivalent to National Health Service) general practitioner prescribing in practices and out-of-hours centres; all nurse, pharmacy and allied health professional HSC prescribing; and all HSC dental prescribing. The secondary care antimicrobial consumption data were extracted by each Trust's JAC Medicines Management System and aggregated for all five Trusts to give Northern Ireland totals. It was not possible to analyse at the level of hospital departments or systems, such as inpatient or outpatient. The data for both settings are available from 2014 - 2016 and are presented by calendar year.

Definitions

The classification of antibiotic used is based on the anatomical therapeutic chemical (ATC) classification system, using the WHO defined daily doses (DDD) for each drug and where grouped, this has been done according to Kucer's "The Use of Antibiotics" (6th edition)[5]. It is important to note that in England, hospitals usually dispense outpatient medications, whereas in Northern Ireland these are usually prescribed by general practitioners at the request of secondary care specialists. A significant proportion of outpatient prescribing is therefore counted under primary care in Northern Ireland and secondary care in England. There is currently no way of separating these prescriptions from the rest of primary care prescribing in Northern Ireland. In England, outpatient prescribing accounts for 6% of secondary care antimicrobial prescribing [4].

Denominator

Mid-year population estimates for 2014-2016 were obtained from the Northern Ireland Statistics and Research Agency (NISRA) and used to express DDD's per 1,000 inhabitants per day. Hospital activity and occupancy statistics were obtained from the Department of Health published data.

Results

Antibiotic resistance

E. coli bacteraemia

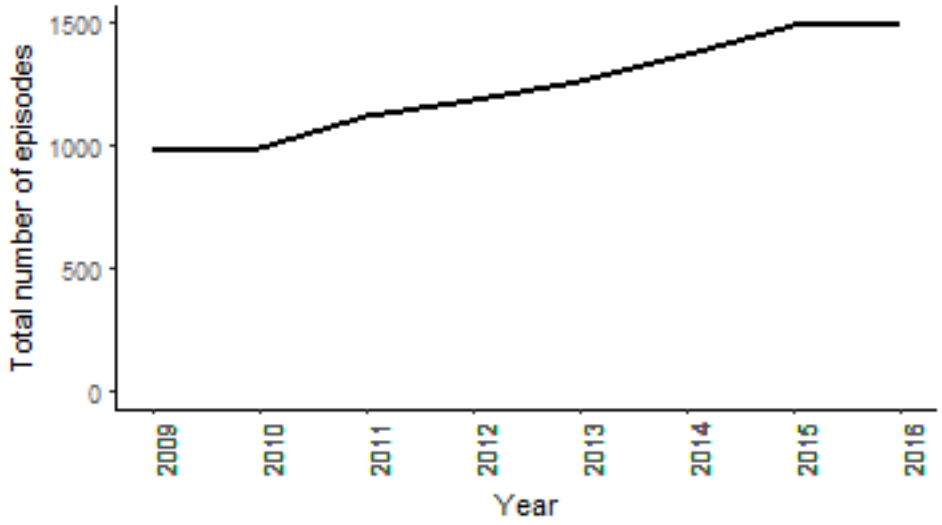

Figure 1: The total number of *E. coli* bacteraemias reported to the Public Health Agency, 2009 - 2016

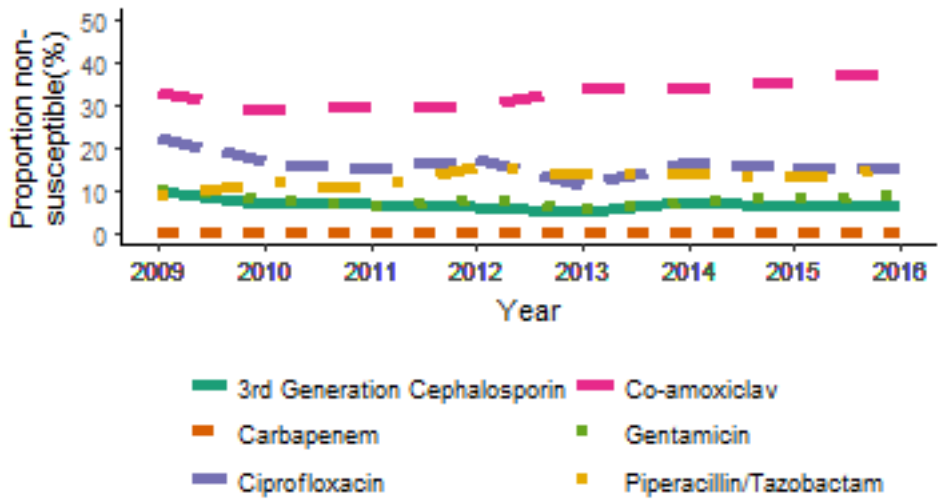

Figure 2: The proportion of *E. coli* bacteraemias resistant to selected antibiotics in NI, 2009 - 2016

The number of *E. coli* bacteraemias has increased between 2009 and 2016, from 980 cases to 1487 cases (Figure 1). The proportion of isolates tested against key antibiotics during 2016 is shown in Appendix 3.

Resistance to piperacillin/tazobactam and co-amoxiclav has increased over the time period (8.8% to 15.6% and 32.9% to 38.1% respectively). The proportion of isolates resistant to gentamicin has remained relatively stable during 2009 - 2016 (9.8% to 8.6%). Resistance among *E. coli* to carbapenems has remained negligible (no isolates detected in 2016). Resistance to third generation cephalosporins and ciprofloxacin has decreased (9.8% to 6.3% and 22.6% to 15.1% respectively (Figure 2).

Despite the reduction in the proportion of resisant isolates reported for the chosen antibioitics it should be noted that in absolute terms, the number of resistant isolates have increased. For example, while the proportion resistant to ciprofloxacin decreased during 2009 - 2016 (22.6% to 15.1%), the number of infections increased (182 to 190 episodes). The number of isolates resistant to three or more classes also increased (34 to 48 episodes)

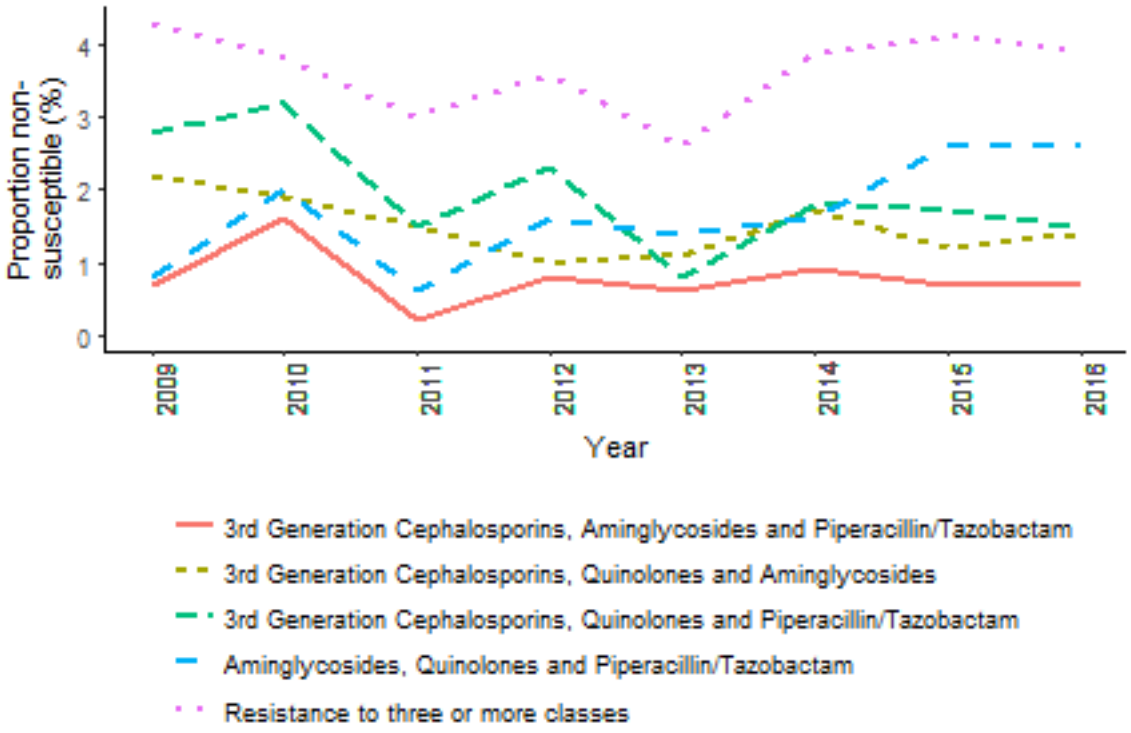

Figure 3: The proportion of *E. coli* bacteraemias reported to the Public Health Agency with multi-drug resistance, 2009 - 2016

The proportion of *E. coli* bacteraemias showing multi-resistance remained stable between

2009 and 2016 and varied in the range of 1-4%. Resistance to at least three or more classes has fluctuated around 4%. Within the named combination of antibiotic classes, the highest proportion of resistance was seen for combinations of aminoglycosides, quinolones and piperacillin/tazobactam and the lowest for third-generation cephalosporins, aminoglycosides and piperacillin/tazobactam (Figure 3).

K. pneumoniae bacteraemia

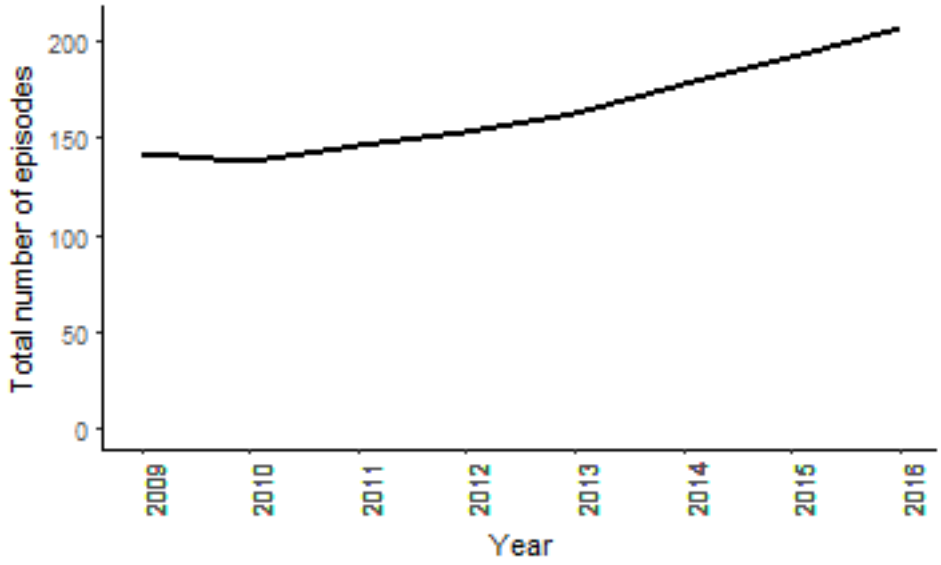

Figure 4: The total number of *K. pneumoniae* bacteraemias reported to the Public Health Agency, 2009 - 2016

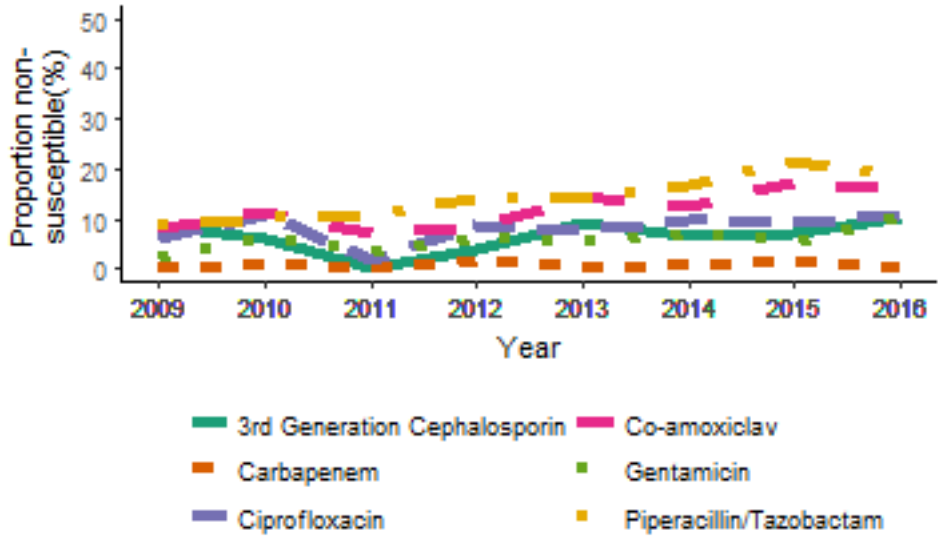

Figure 5: The proportion of *K. pneumoniae* bacteraemias resistant to selected antibiotics in NI, 2009 - 2016

In 2016, the two most common species among blood culture isolates of the genus *Klebsiella* were *K. pneumoniae* (208/269; 77%) and *K. oxytoca* (60/269; 22%). The following

describes trends and resistance for *K. pneumoniae*.

The number of *K. pneumoniae* bacteraemias has increased between 2009 and 2016, from 143 cases to 208 cases (Figure 4). The proportion of isolates tested against key antibiotics during 2016 is shown in Appendix 3.

There has been an increase in the proportion of *K. pneumoniae* bacteraemias resistant to selected antibiotics over the 5 year period: ciprofloxacin (6.3% to 10.7%); gentamicin (2.2% to 10.9%); co-amoxiclav (8.1% to 15.6%) and piperacillin/tazobactam (8.6% to 19%). There was a smaller increase in the proportion of isolates resistant to third generation cephalosporins (8.7% to 10.4%). Resistance to carbapenems remained relatively stable over the period 2009 - 2016 (0% in 2016; Figure 5).

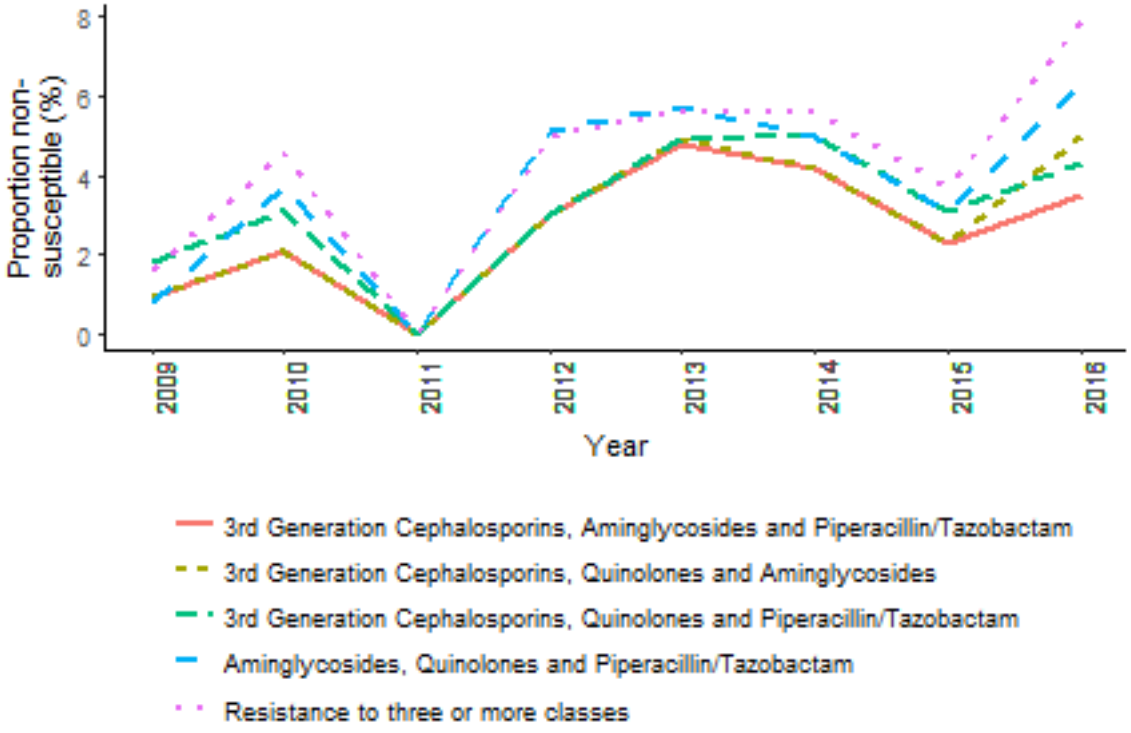

Figure 6: The proportion of *K.pneumoniae* bacteraemias reported to the Public Health Agency with multi-drug resistance, 2009 - 2016

The proportion of *K. pneumoniae* bacteraemias showing multi-resistance has increased slightly between 2009 and 2016 across all antibiotic combinations. Multi-resistance varied between 0 - 8%. The proportion of *K. pneumoniae* bacteraemias exhibiting resistance to three or more classes has increased over time. Within the named combinations of antibiotic classes, the highest proportions were seen for combinations of aminoglycosides,

quinolones and piperacillin/tazobactam and the lowest for third generation cephalosporins, aminoglycosides and piperacillin/tazobactam (Figure 6).

Unlike *E. coli* both the proportion and absolute numbers of *K. pneumoniae* bacteraemias have increased. For example, the proportion of *K. pneumoniae* resistant to ciprofloxacin increased by 4% during 2009 - 2016 (6.3% to 10.7%), the number of infections doubled (8 to 19 episodes). The number of isolates resistant to three or more classes also increased (2 to 14 episodes).

Pseudomonas species bacteraemia

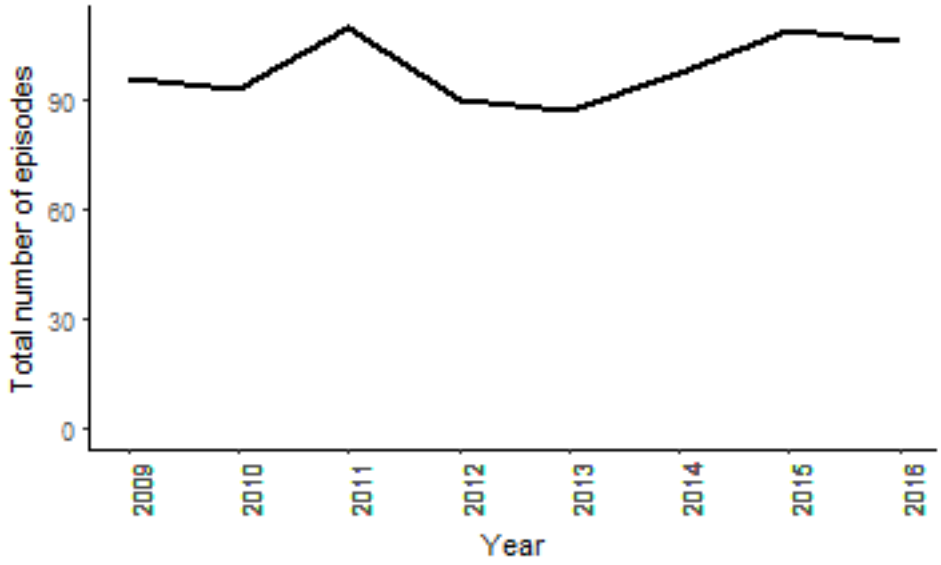

Figure 7: The total number of Pseudomonas species bacteraemias reported to the Public Health Agency, 2009 - 2016

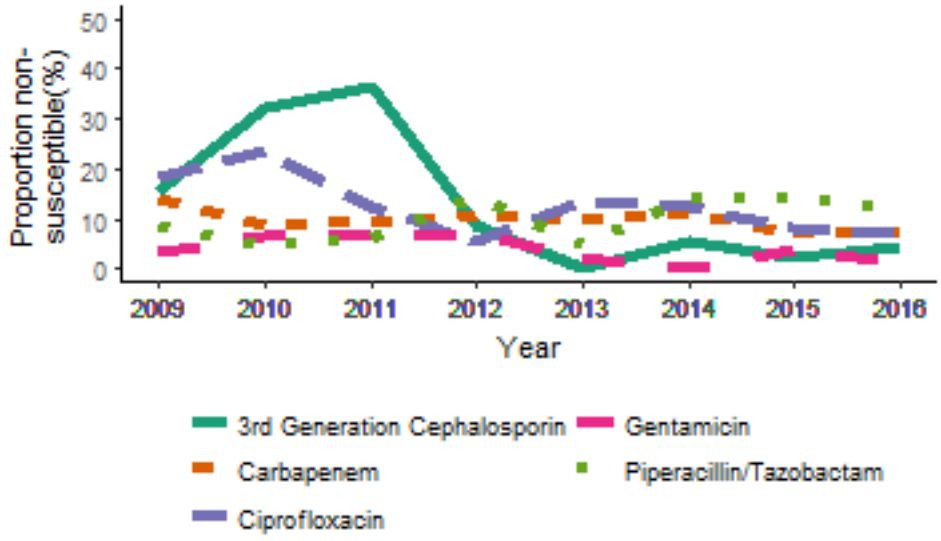

Figure 8: The proportion of Pseudomonas species bacteraemias resistant to selected antibiotics in NI, 2009 - 2016

The number of *Pseudomonas species* bacteraemias has remained relatively stable over the last 5 years, with a slight decrease from 2015 to 2016 (109 cases to 106 cases;

Figure 7). The proportion of isolates tested against key antibiotics during 2016 is shown in Appendix 3.

There has been a slight increase in the proportion of *Pseudomonas species* bacteraemias resistant to piperacillin/tazobactam over the 5 year period (8.5% to 12.1%). Resistance among selected antibiotics has decreased: ciprofloxacin (18.2% to 7.1%); third generation cephalosporins (15.7% to 4.3%); gentamicin (3.2% to 1%) and; carbapenems (14.3% to 7.1%; Figure 8).

S. aureus bacteraemia

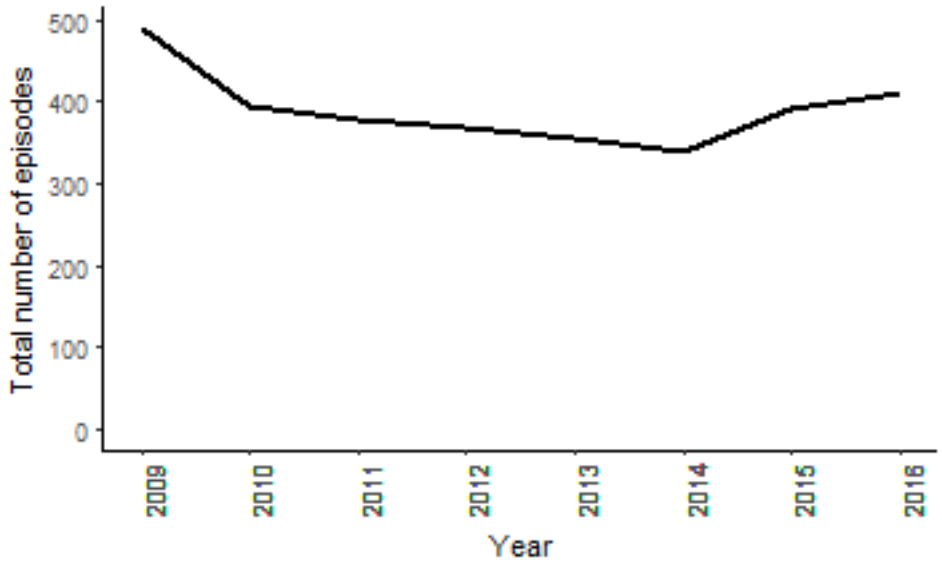

Figure 9: The total number of *S. aureus* bacteraemias reported to the Public Health Agency, 2009 - 2016

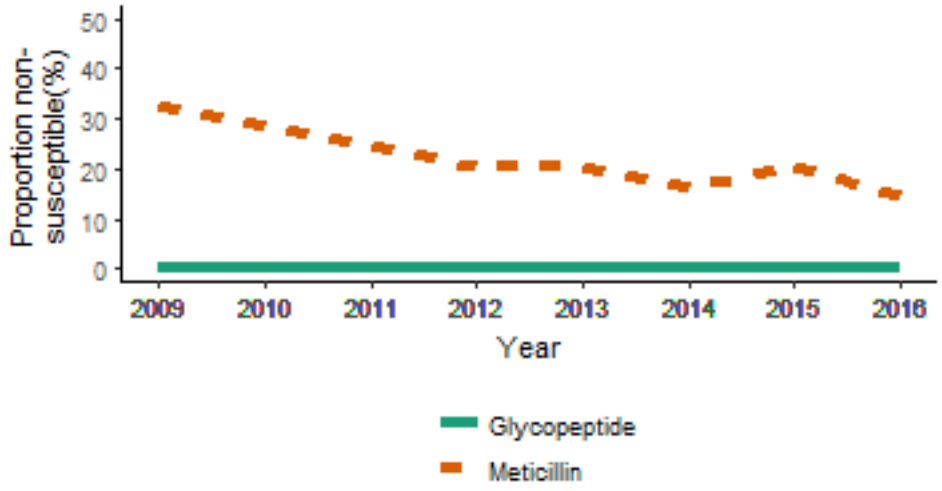

Figure 10: The proportion of *S. aureus* bacteraemias resistant to selected antibiotics in NI, 2009 - 2016

During the last five years, the number of *S. aureus* bacteraemias had been decreasing but has increased year on year from 2014 to 2016 (338, 393 and 411 cases respectively;

Figure 9). The proportion of isolates tested against key antibiotics during 2016 is shown in Appendix 2. The proportion of *S. aureus* that are resistant to meticillin (MRSA) has been decreasing over the last 5 years, with a low of 14.6% in 2016. The proportion of *S. aureus* that are resistant to glycopeptides has remained low (Figure 10).

Enterococcus species bacteraemia

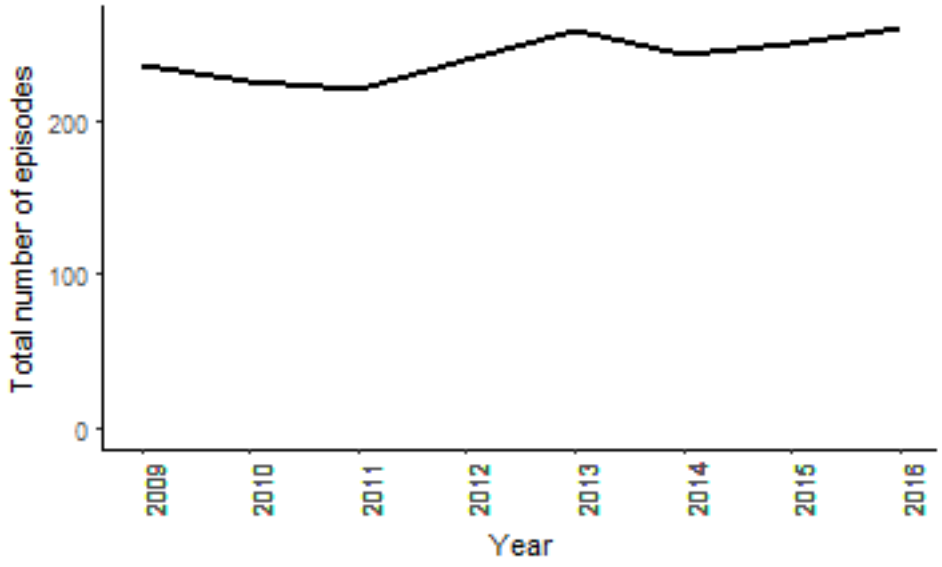

Figure 11: The total number of Enterococcus species bacteraemias reported to the Public Health Agency, 2009 - 2016

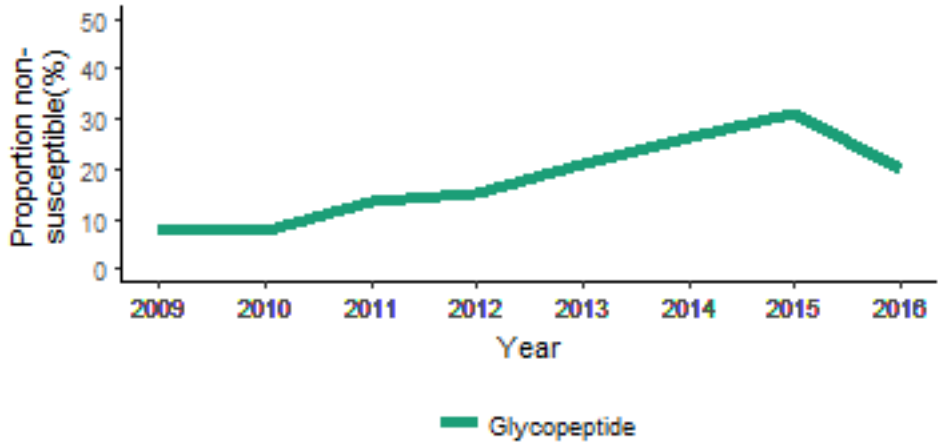

Figure 12: The proportion of Enterococcus species bacteraemias resistant to selected antibiotics in NI, 2009 - 2016

The number of *Enterococcus species* bacteraemias has fluctuated over the last 5 years, with a slight increase from 2015 to 2016 (250 cases to 261 cases; Figure 11). During

2016, 90.8% were tested against glycopeptides. Resistance to glycopeptides has been increasing over the last 5 years, but decreased from 2015 to 2016 where 19.8% were resistant (Figure 12).

S. pneumoniae bacteraemia

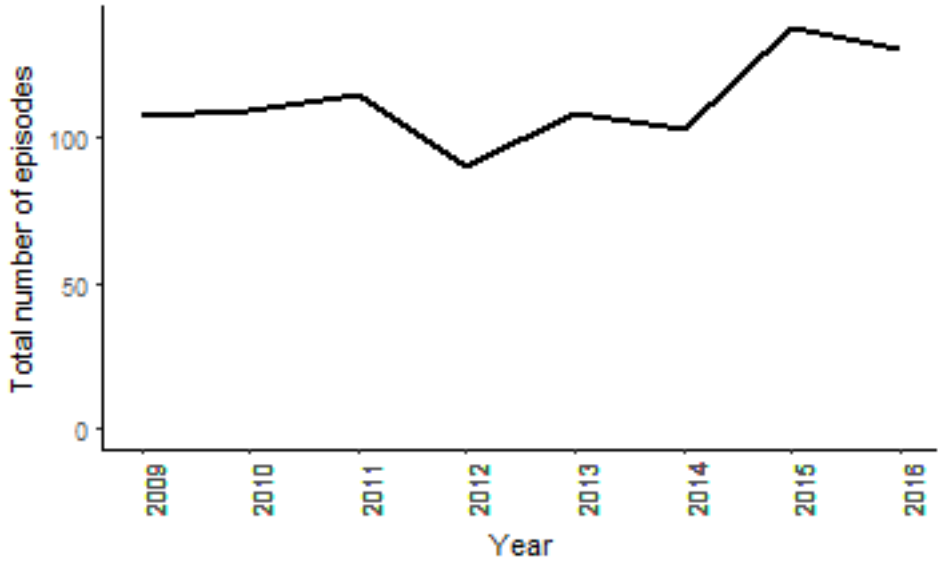

Figure 13: The total number of *S. pneumoniae* bacteraemias reported to the Public Health Agency, 2009 - 2016

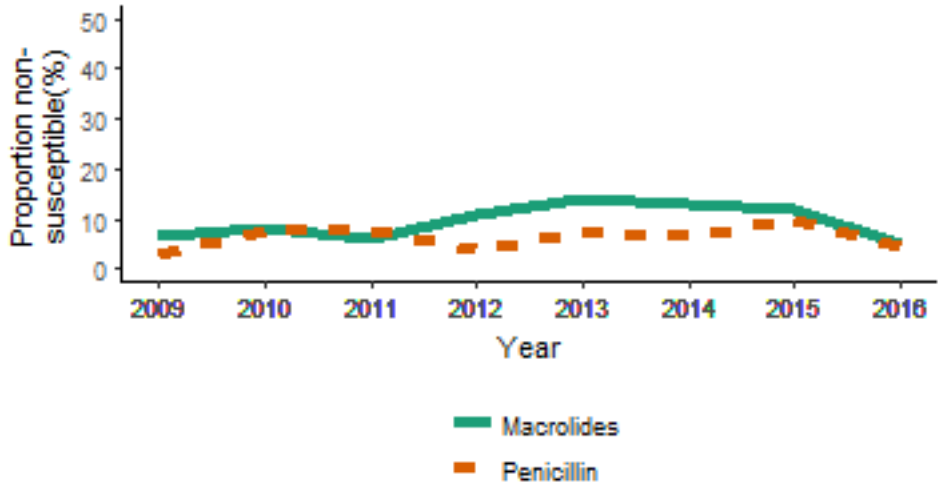

Figure 14: The proportion of *S. pneumoniae* bacteraemias resistant to selected antibiotics in NI, 2009 - 2016

There has been a general increase in the number of *S. pneumoniae* bacteraemias during the time period, with a slight decrease reported from 2015 to 2016 (138 cases to 130 cases;

Figure 13). The proportion of isolates tested against key antibiotics during 2016 is shown in Appendix 3. While the proportion of *S. pneumoniae* that are resistant to macrolides increased between 2009-2013, it has been decreasing since (6.7% to 5.1% during 2009 - 2016) while resistance to penicillin has increased slightly (2.9% to 4.5%; Figure 14).

Acinetobacter species bacteraemia

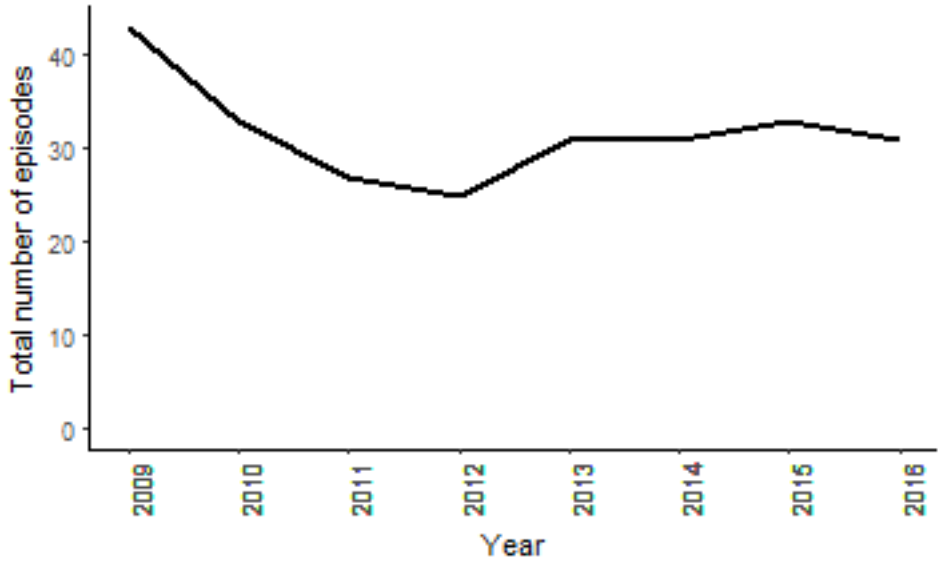

Figure 15: The total number of Acinetobacter species bacteraemias reported to the Public Health Agency, 2009 - 2016

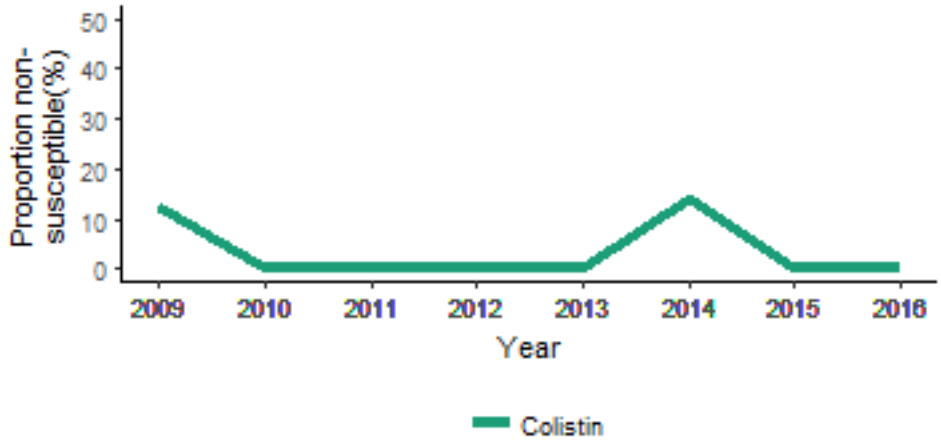

Figure 16: The proportion of Acinetobacter species bacteraemias resistant to selected antibiotics in NI, 2009 - 2016

The total number of *Acinetobacter species* bacteraemias has decreased during 2015 to 2016 from 33 cases to 31 cases (Figure 15). During 2016, 29 were tested against colistin.

Resistance to colistin among *Acinetobacter species* has remained at zero (Figure 16).

Voluntary Carbapenamse Producing Organisms surveillance

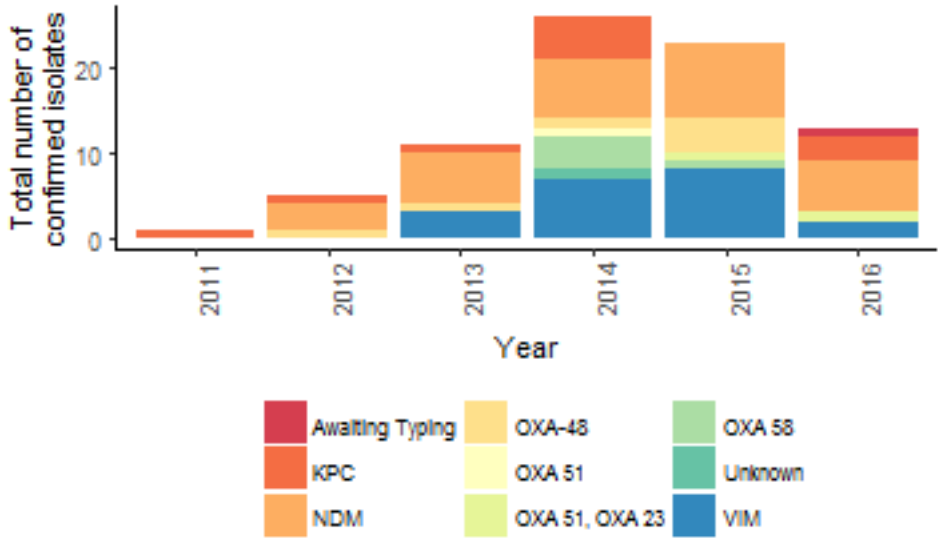

Figure 17: Carbapenamase activity among CPO confirmed isolates that have been sent to Public Health England's AMRHAI Reference unit, 2011 - 2016

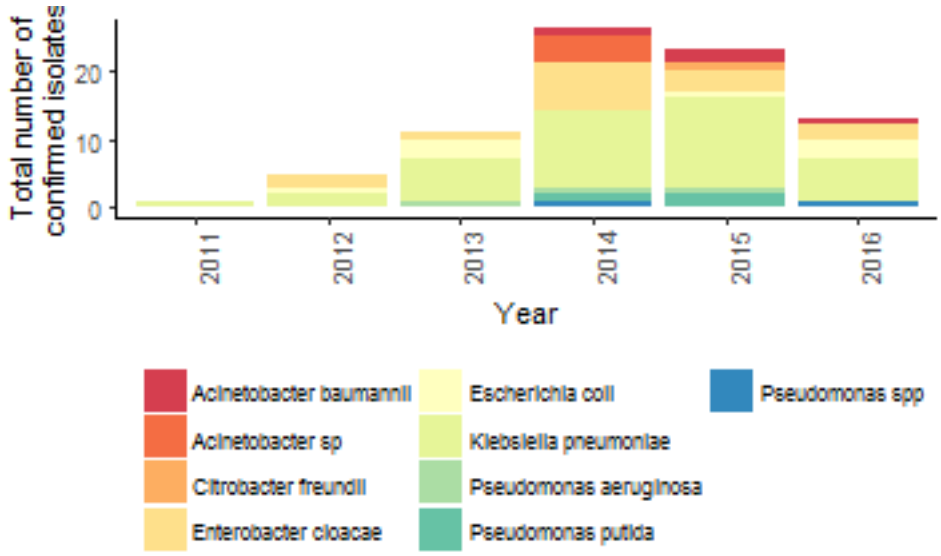

Figure 18: Organisms with confirmed carbapenamase production among isolates that have been sent to Public Health England's AMRHAI Reference unit, 2011 - 2016

The number of CPO reported to the PHA increased between 2011 and 2014 but has decreased year on year thereafter (13 episodes reported during 2016). This likely reflects

the voluntary nature of reporting (case ascertainment) as well as local developments in the ability to test for CPO. The most common reported resistance mechanism is New Delhi Metallo-Beta-lactamase (NDM) (31 episodes during 2011-2016; Figure 17). The most commonly reported CPO over the time period was *K. pneumoniae* (Figure 18).

Antibiotic resistance in *Neisseria gonorrhoeae*

Gonorrhoea has been identified as at risk of becoming an untreatable disease due to the emergence of antimicrobial resistance to successive standard treatments. This has necessitated changes to recommended antibiotic prescribing. In the UK, current recommended treatment guidelines include ceftriaxone with azithromycin, along with routine test of cure[6]. Third-generation cephalosporins are the last remaining effective antibiotics but reports of treatment failures and increasing minimum inhibitory concentrations (MIC) levels have raised concerns that they will no longer be a suitable treatment option[7]. Since 2015, NI has participated in the European Gonococcal Antimicrobial Surveillance Programme(Euro-GASP)[8] through the Royal Victoria Hospital, Belfast. This GUM clinic captured 62% of all gonorrhoea diagnoses made during 2016.

In 2016, gonorrhoea diagnoses accounted for 10% (592/5,719) of all new STI diagnoses made in NI GUM clinics. During the study period, 20 isolates were cultured and sent to Public Health England for inclusion in EuroGASP. Of these, *N. gonorrhoeae* was successfully retrieved from 13 isolates (65%).

During 2015 and 2016, 49 isolates were tested within the EuroGASP programme and showed similar resistance pattern to the UK overall with 12% resistant to azithromycin and 0% resistant to ceftriaxone.

The full report for this surveillance programme will be published on the PHA website.

Antibiotic consumption

Rates of antibiotic consumption by healthcare setting

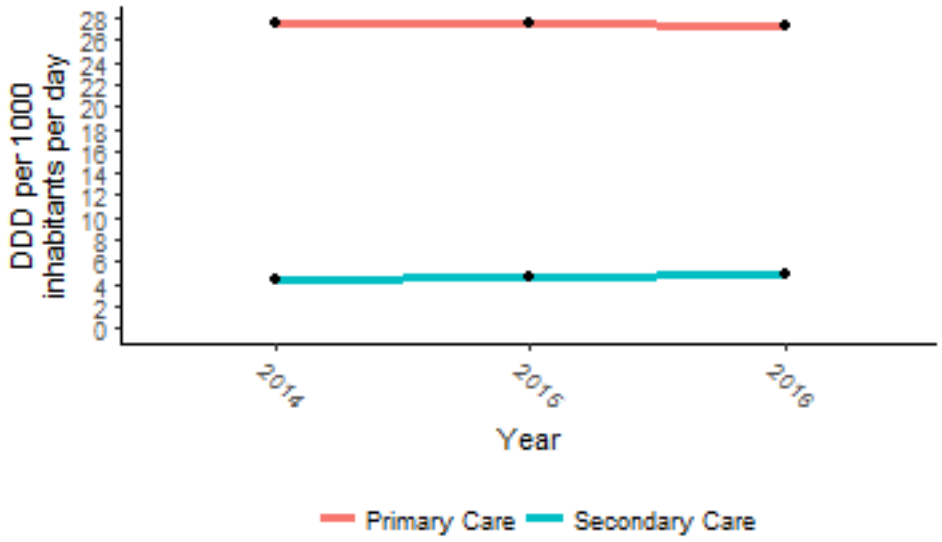

Figure 19: Total antibiotic consumption, expressed as DDD per 1000 inhabitants per day, NI, 2014-2016

In 2016, the total consumption of antibiotics in primary and secondary care was 32 per 1000 inhabitants per day (32.12 and 32.21 per 1000 inhabitants per day in 2014 and 2015 respectively).

The majority of antibiotic prescribing took place in primary care (85% during 2016; Figure 19). In primary care, rates have been stable since 2014 (during 2016 the overall rate of prescribing in primary care was 27.22 per 1000 inhabitants per day). There has also been no change in the overall rate of antibiotic prescribing in secondary care (4.79 per 1000 inhabitants per day during 2016; Figure 19).

Rates of antibiotic consumption in Secondary care

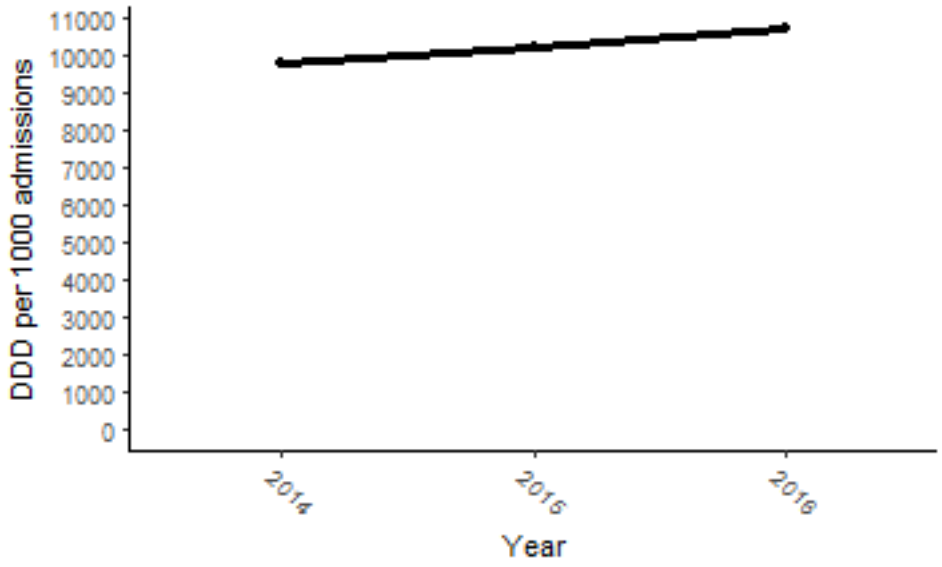

Figure 20: Total antibiotic consumption, expressed as DDD per 1000 admissions, NI, 2014-2016

There has been a year on year increase in the rate of antibiotic consumption expressed as DDD per 1000 admissions: 9772 in 2014 to 10728 DDD per 1000 admissions in 2016 (Figure 20).

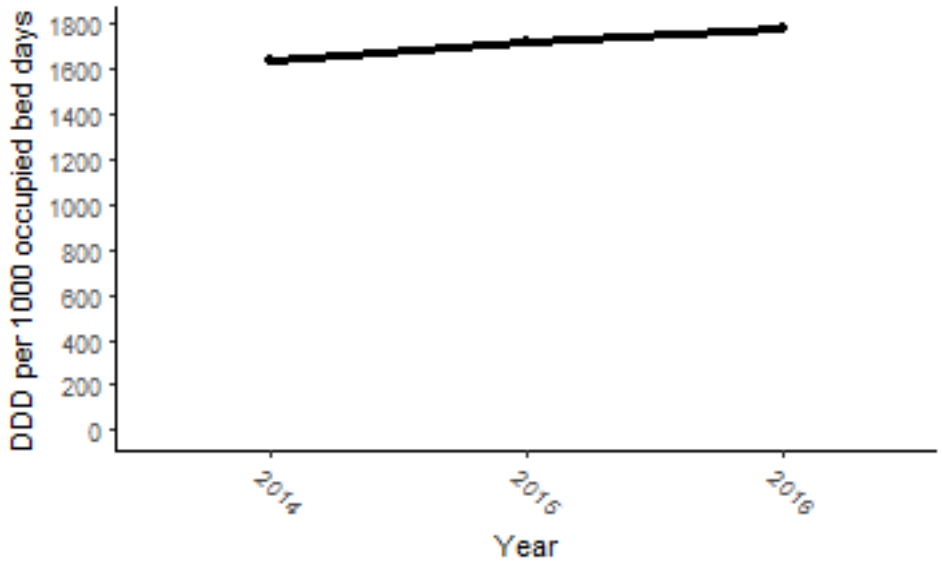

Figure 21: Total antibiotic consumption, expressed as DDD per 1000 occupied bed days, NI, 2014-2016

Like the admissions data, the rate of antibiotic consumption per 1000 occupied bed days has been increasing year on year: 1643 in 2014 to 1787 DDD per 1000 occupied beddays in 2016 (Figure 21).

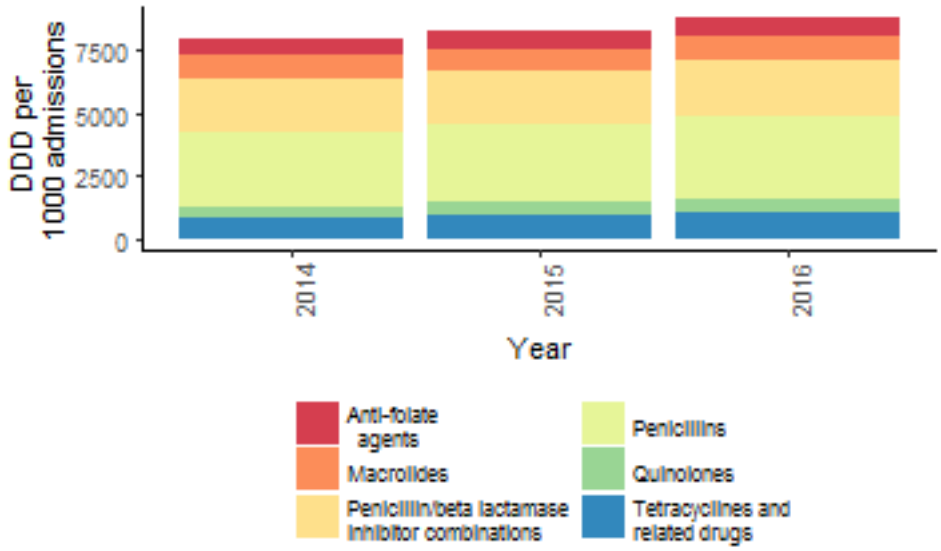

Figure 22: Total antibiotic consumption by key agents in secondary care, expressed as DDD per 1000 admissions, NI, 2014-2016

This figure shows the top 6 key agents prescribed in secondary care. During 2016, the highest rates for antibiotic consumption were penicillins (3331 DDD per 1000 admissions), Penicillin/beta lactamase inhibitor combinations (2247 DDD per 1000 admissions) and tetracyclines and related drugs (1058 DDD per 1000 admissions; Figure 22).

Antibiotic consumption by key agents

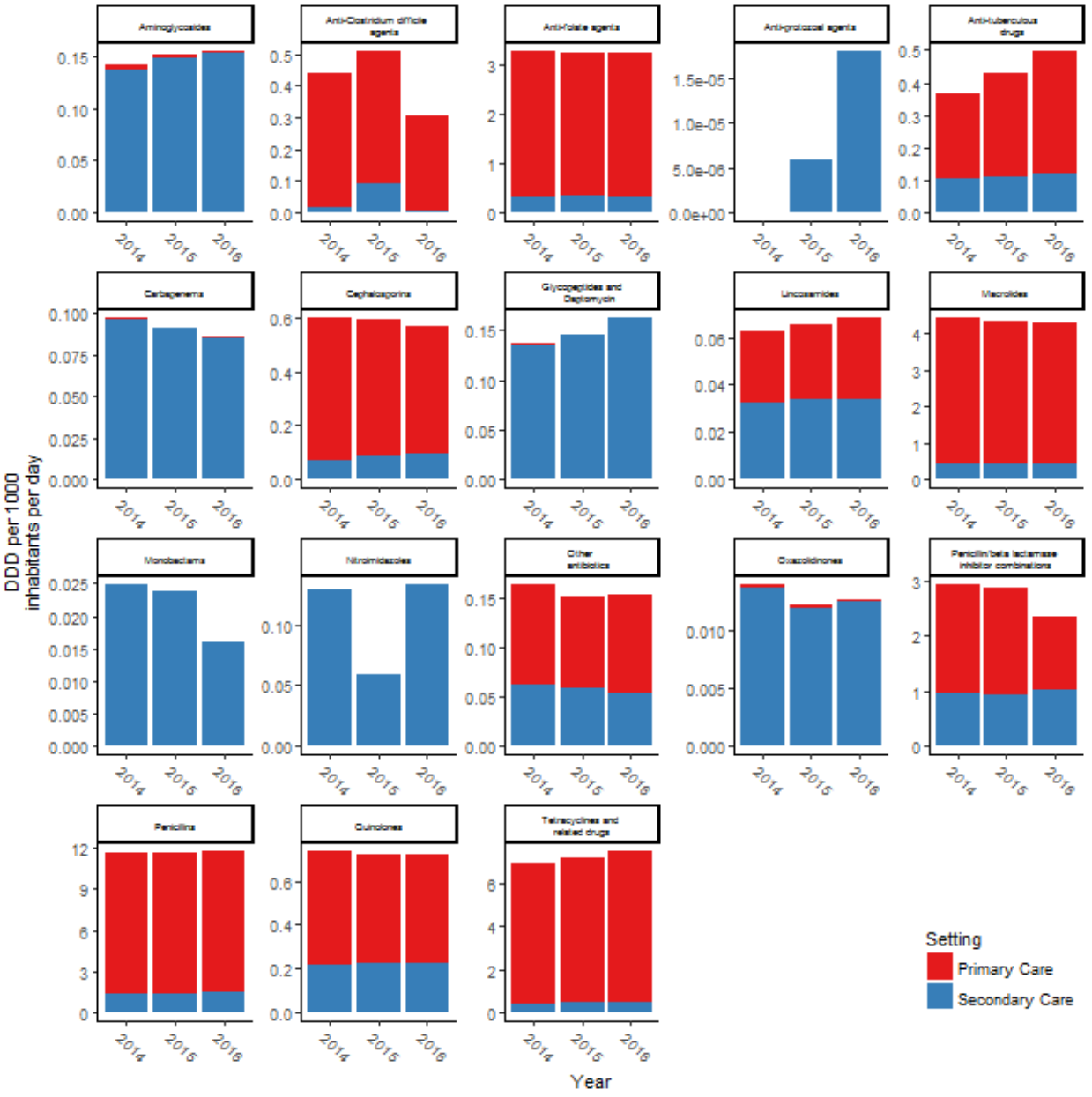

Figure 23: Total antibiotic consumption by key antibiotic groups[2], expressed as DDD per 1000 inhabitants per day, NI, 2014-2016

[2]Oral/rectal prepations for metronidazole(ATC P01AB01) and vancomycin (ATC A07AA09) are included in the anti-*Clostridium difficile* agents and do not appear in the nitroimidazoles or glycopeptides category respectively.

Note: differing scales on y-axis

During 2016, the most frequently used antibiotics in both primary and secondary care in NI were Penicillins (37.7% and 31.1% respectively), tetracyclines and related drugs (25.8% and 9.9% respectively) and macrolides (14.3% and 8.5% respectively). Overall, the rate of antibiotic prescribing has remained relatively stable across all groups (Figure 23).

Antibiotic consumption by class and individual antibiotics

Penicillins

Table 1: Total rate of Penicillins DDD per 1000 inhabitants per day, NI, 2014-2016.

Year	Class	DDD	Population	rate
2014	Penicillins	7839445	1840500	11.67
2015	Penicillins	7865333	1851600	11.64
2016	Penicillins	7986684	1862100	11.75

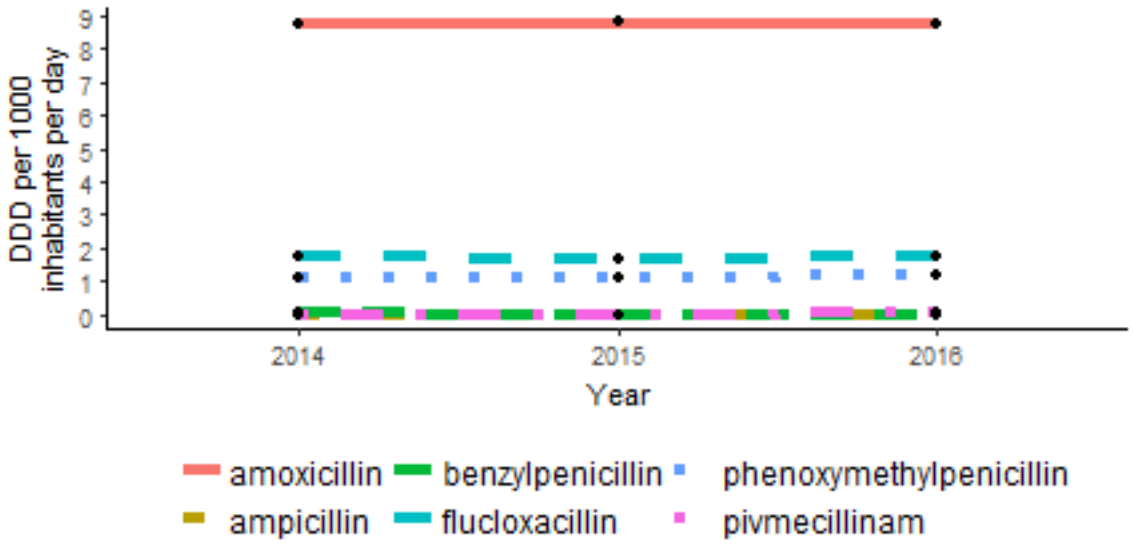

Figure 24: Consumption of most commonly used penicillins expressed per 1000 inhabitants per day, NI, 2014 - 2016

The figure represents the top six antimicrobial agents used in the Penicillins class. Penicillins accounted for 36.7% of antibiotic consumption in 2016. The rate of penicillin consumption has remained relatively stable with a rate of 11.75 per 1000 inhabitants per day during 2016. The highest rate was for amoxicillin (8.74 DDD per 1000 inhabitants per day in 2016; Figure 24).

Cephalosporins

Table 2: Total rate of Cephalosporins DDD per 1000 inhabitants per day, NI, 2014-2016.

Year	Class	DDD	Population	rate
2014	Cephalosporins	403786	1840500	0.60
2015	Cephalosporins	403585	1851600	0.60
2016	Cephalosporins	386092	1862100	0.57

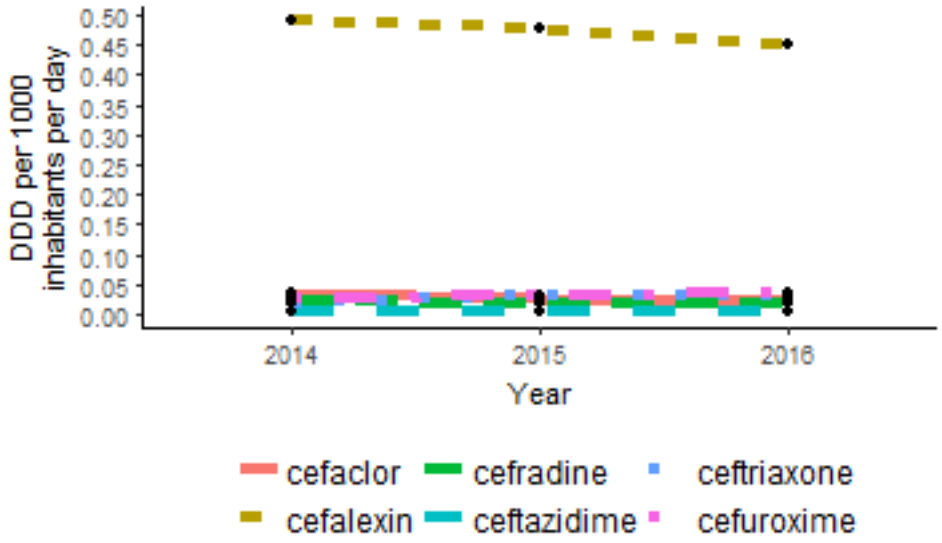

Figure 25: Consumption of most commonly used cephalosporins expressed per 1000 inhabitants per day, NI, 2014 - 2016

The figure represents the top six agents used in the Cephalosporins class. The rate of cephalosporin consumption has remained relatively stable with a rate of 0.57 DDD per 1000 inhabitants per day during 2016. The highest rate was for cefalexin, the rate of which has decreased over time (0.45 DDD per 1000 inhabitants per day during 2016; Figure 25).

Tetracyclines and related drugs

Table 3: Total rate of tetracyclines and related drugs consumption expressed as DDD per 1000 inhabitants per day, NI, 2014-2016.

Year	Class	DDD	Population	rate
2014	Tetracyclines and related drugs	4657539	1840500	6.93
2015	Tetracyclines and related drugs	4850875	1851600	7.18
2016	Tetracyclines and related drugs	5091340	1862100	7.49

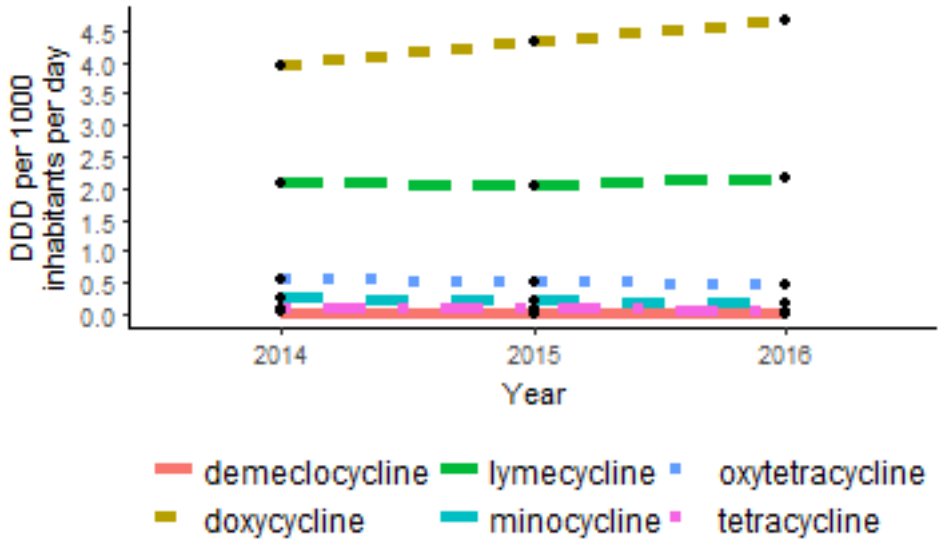

Figure 26: Consumption of most commonly used tetracyclines and related drugs[4] expressed per 1000 inhabitants per day, NI, 2014 - 2016

The figure represents the top six agents used in the tetracyclines and related drugs class. Tetracyclines and related drugs accounted for 23.4% of all antibiotic consumption in 2016. The rate of tetracyclines and related drugs consumption has increased during 2014 - 2016 with a rate of 7.49 DDD per 1000 inhabitants per day during 2016. The highest rate was for doxycycline, the rate of which has increased over time (3.95 to 4.64 DDD per 1000 inhabitants per day from 2014 to 2016; Figure 26).

[4]While demeclocycline and lymecycline are not primarily used for their antimicrobial effects they have been included as they can still be considered drivers of resistance.

Quinolones

Table 4: Total rate of Quinolones consumption expressed as DDD per 1000 inhabitants per day, NI, 2014-2016.

Year	Class	DDD	Population	rate
2014	Quinolones	493831	1840500	0.74
2015	Quinolones	488642	1851600	0.72
2016	Quinolones	490773	1862100	0.72

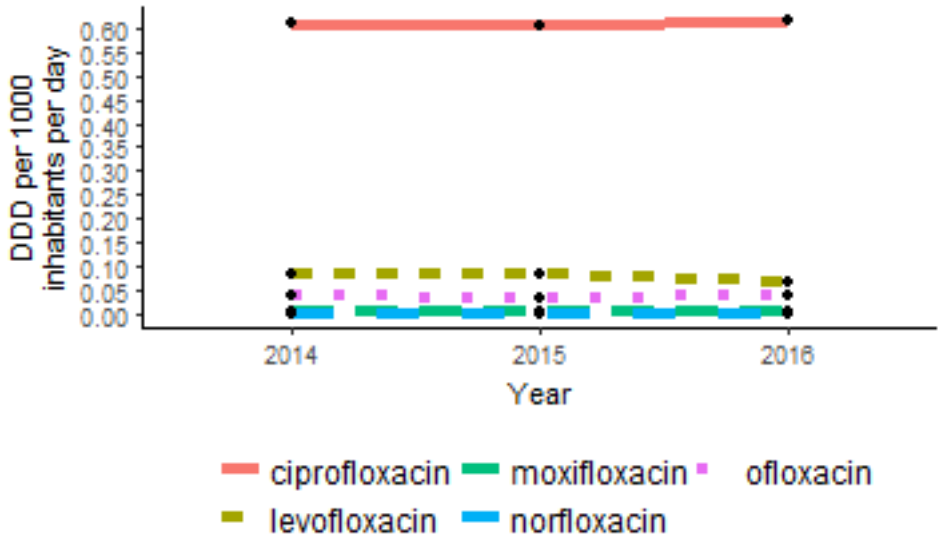

Figure 27: Consumption of most commonly used quinolones expressed per 1000 inhabitants per day, NI, 2014 - 2016

The rate of Quinolones consumption has remained stable during 2014 - 2016 with a rate of 0.72 DDD per 1000 inhabitants per day during 2016. The highest rate was for ciprofloxacin which has been stable over time (0.61 DDD per 1000 inhabitants per day in 2016; Figure 27).

Macrolides

Table 5: Total rate of Macrolides consumption expressed as DDD per 1000 inhabitants per day, NI, 2014-2016.

Year	Class	DDD	Population	rate
2014	Macrolides	2967557	1840500	4.42
2015	Macrolides	2920673	1851600	4.32
2016	Macrolides	2916764	1862100	4.29

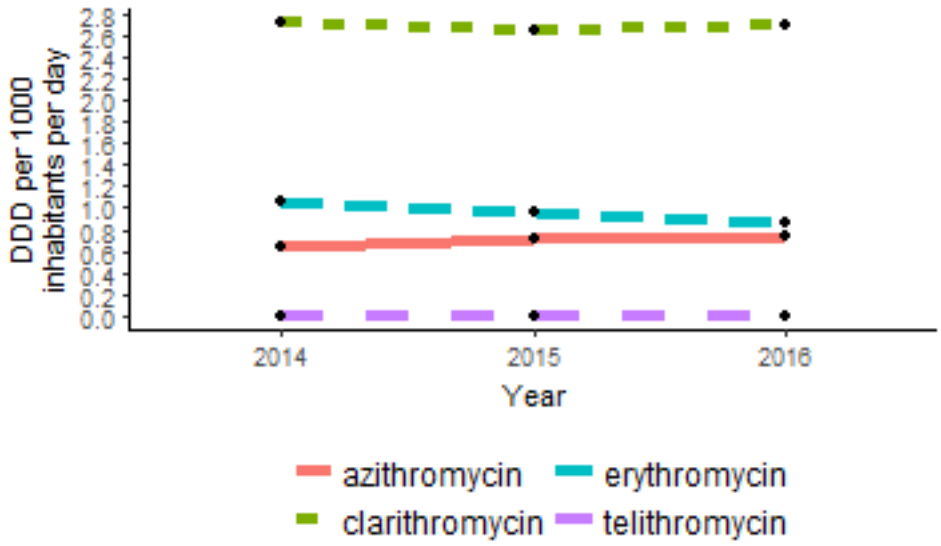

Figure 28: Consumption of most commonly used macrolides expressed per 1000 inhabitants per day, NI, 2014 - 2016

Macrolides accounted for 13.4% of all antibiotic consumption in 2016. The rate of Macrolides consumption has remained stable during 2014 - 2016 with a rate of 4.29 DDD per 1000 inhabitants per day in 2016. The highest rate was for clarithromycin which has been stable over time (2.7 DDD per 1000 inhabitants per day in 2016; Figure 28).

Carbapenems

Table 6: Total rate of Carbapenems consumption expressed as DDD per 1000 inhabitants per day, NI, 2014-2016.

Year	Class	DDD	Population	rate
2014	Carbapenems	65191	1840500	0.10
2015	Carbapenems	61799	1851600	0.09
2016	Carbapenems	58255	1862100	0.09

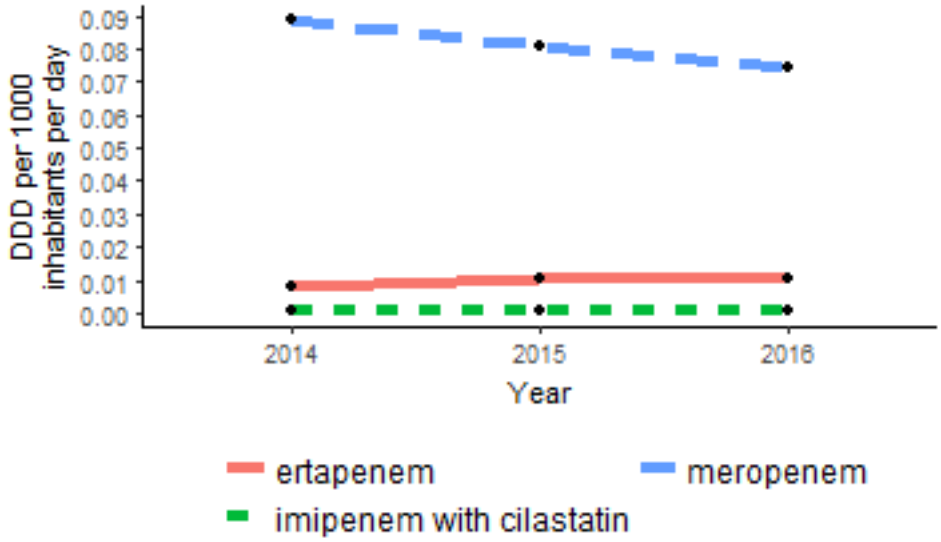

Figure 29: Consumption of most commonly used carbapenems expressed per 1000 inhabitants per day, NI, 2014 - 2016

The rate of Carbapenems consumption has remained stable during 2014 - 2016 with a rate of 0.09 DDD per 1000 inhabitants per day in 2016. The highest rate was for meropenem which has decreased slightly over time (0.09 in 2014 to 0.07 DDD per 1000 inhabitants per day in 2016; Figure 29).

Penicillin/beta lactamase inhibitor combinations

Table 7: Total rate of Penicillin/beta lactamase inhibitor combinations consumption expressed as DDD per 1000 inhabitants per day, NI, 2014-2016.

Year	Class	DDD	Population	rate
2014	Penicillin/beta lactamase inhibitor combinations	1961833	1840500	2.92
2015	Penicillin/beta lactamase inhibitor combinations	1932974	1851600	2.86
2016	Penicillin/beta lactamase inhibitor combinations	1594932	1862100	2.35

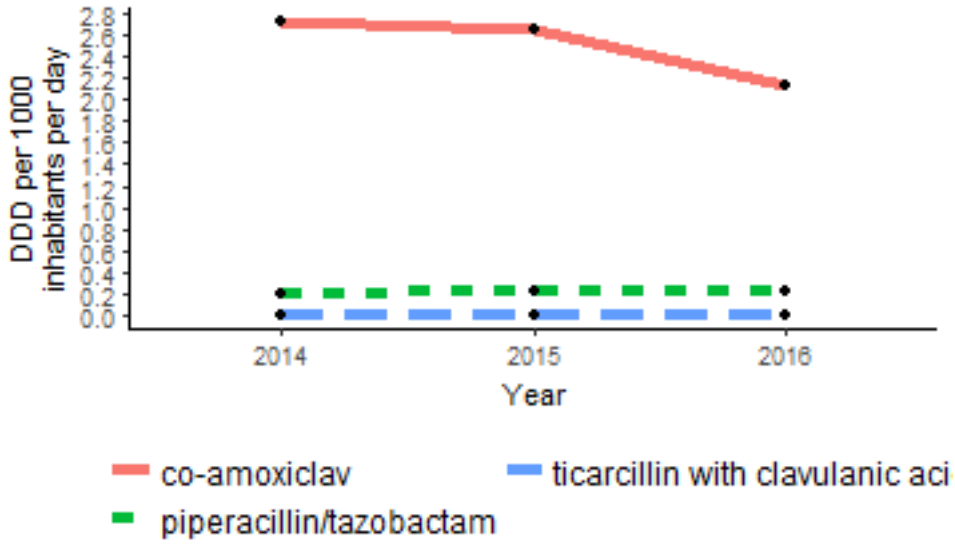

Figure 30: Consumption of most commonly used Penicillin/beta lactamase inhibitor combinations expressed per 1000 inhabitants per day, NI, 2014 - 2016

The rate of Penicillin/beta lactamase inhibitor combinations consumption has decreased during 2014 - 2016 with a rate of 2.35 DDD per 1000 inhabitants per day in 2016. The highest rate was for co-amoxiclav which has decreased over time (2.72 to 2.13 DDD per 1000 inhabitants per day from 2014 to 2016). The use of piperacillin/tazobactam has been stable over time (0.21 DDD per 1000 inhabitants per day in 2016; Figure 30).

Glycopeptides and daptomycin

Table 8: Total rate of glycopeptides and daptomycin consumption expressed as DDD per 1000 inhabitants per day, NI, 2014-2016.

Year	Class	DDD	Population	rate
2014	Glycopeptides and Daptomycin	91354	1840500	0.14
2015	Glycopeptides and Daptomycin	98695	1851600	0.15
2016	Glycopeptides and Daptomycin	110211	1862100	0.16

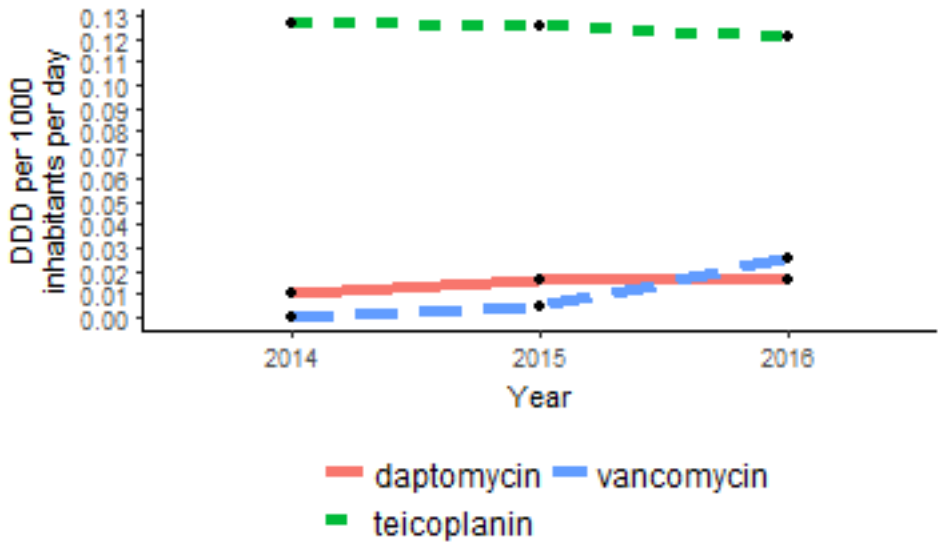

Figure 31: Consumption of most commonly used glycopeptides and daptomycin expressed per 1000 inhabitants per day, NI, 2014 - 2016

The rate of glycopeptide and daptomycin consumption has remained stable during 2014 - 2016 with a rate of 0.16 DDD per 1000 inhabitants per day in 2016. The highest rate was for teicoplanin which has been stable over time (0.12 DDD per 1000 inhabitants per day in 2016; Figure 31).

Anti-folate agents

Table 9: Total rate of Anti-folate agents consumption expressed as DDD per 1000 inhabitants per day, NI, 2014-2016.

Year	Class	DDD	Population	rate
2014	Anti-folate agents	2198383	1840500	3.27
2015	Anti-folate agents	2202642	1851600	3.26
2016	Anti-folate agents	2203877	1862100	3.24

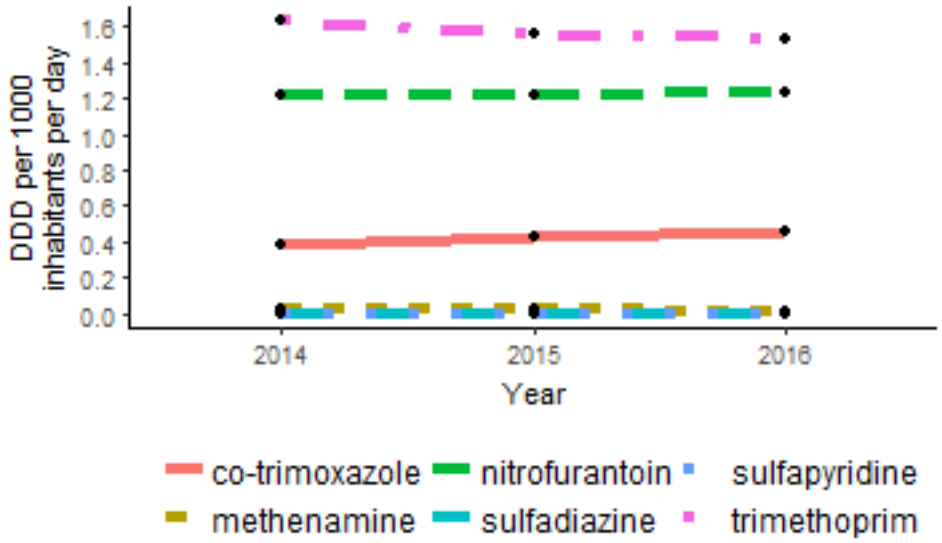

Figure 32: Consumption of most commonly used anti-folate agents expressed per 1000 inhabitants per day, NI, 2014 - 2016

Anti-folate agents accounted for 10.1% of all antibiotic consumption in 2016. The rate of Anti-folate agents consumption has remained stable during 2014 - 2016 with a rate of 3.24 DDD per 1000 inhabitants per day in 2016. The highest rate was for trimethoprim which has decreased slightly over time (1.62 to 1.53 DDD per 1000 inhabitants per day from 2014 to 2016; Figure 32).

Antibiotic consumption of key agents by healthcare setting

Trimethoprim

Table 10: Total rate of trimethoprim consumption expressed as DDD per 1000 inhabitants per day, NI, 2014-2016.

Year	Antibiotic	DDD	Population	rate
2014	trimethoprim	1090980	1840500	1.62
2015	trimethoprim	1053447	1851600	1.56
2016	trimethoprim	1038717	1862100	1.53

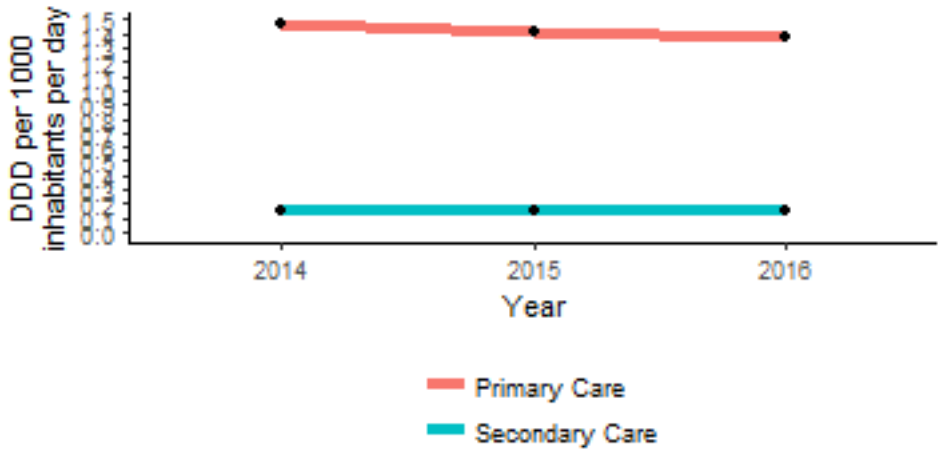

Figure 33: Consumption of trimethoprim by prescriber location expressed per 1000 inhabitants per day, NI, 2014 - 2016

Overall, the rate of trimethoprim consumption has decreased slightly during 2014 - 2016 with a rate of 1.53 DDD per 1000 inhabitants per day during 2016. This trend is influenced by stable rates of trimethopim consumption in primary care during 2014 - 2016 (1.47 to 1.37 DDD per 1000 inhabitants per day) with no change in secondary care during 2014-2016 (0.15 to 0.15 DDD per 1000 inhabitants per day; Figure 33).

Nitrofurantoin

Table 11: Total rate of nitrofurantoin consumption expressed as DDD per 1000 inhabitants per day, NI, 2014-2016.

Year	Antibiotic	DDD	Population	rate
2014	nitrofurantoin	812684	1840500	1.21
2015	nitrofurantoin	817469	1851600	1.21
2016	nitrofurantoin	840255	1862100	1.24

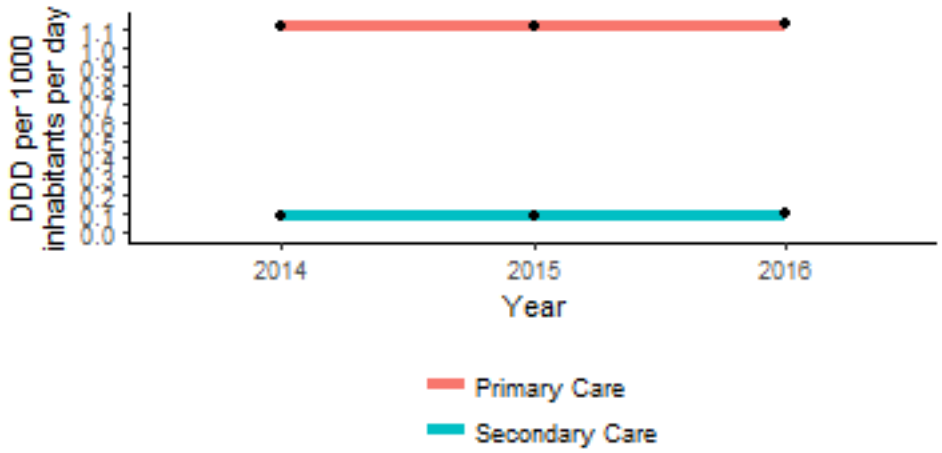

Figure 34: Consumption of nitrofurantoin by prescriber location expressed per 1000 inhabitants per day, NI, 2014 - 2016

Overall, the rate of nitrofurantoin consumption has remained stable during 2014 - 2016 with a rate of 1.24 DDD per 1000 inhabitants per day in 2016. Rates in both primary and secondary care have not changed during 2014 - 2016 (1.13 to 1.14 DDD per 1000 inhabitants per day in primary care and 0.08 to 0.1 DDD per 1000 inhabitants per day in secondary care; Figure 34).

Aminoglycosides

Table 12: Total rate of Aminoglycosides consumption expressed as DDD per 1000 inhabitants per day, NI, 2014-2016.

Year	Class	DDD	Population	rate
2014	Aminoglycosides	95301	1840500	0.14
2015	Aminoglycosides	102535	1851600	0.15
2016	Aminoglycosides	105419	1862100	0.16

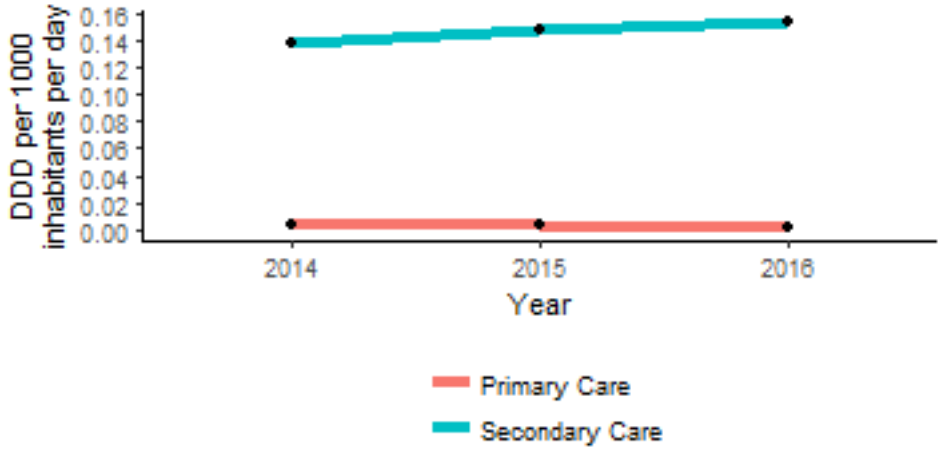

Figure 35: Consumption of aminoglycosides by prescriber location expressed per 1000 inhabitants per day, NI, 2014 - 2016

Overall, the rate of Aminoglycosides consumption has remained stable during 2014 - 2016 with a rate of 0.16 DDD per 1000 inhabitants per day in 2016. This trend is influenced by stable rates in primary care during 2014 - 2016 (0 DDD per 1000 inhabitants per day during 2016) and a slight increase in secondary care (0.14 to 0.15 DDD per 1000 inhabitants per day; Figure 35).

Glycopeptides and daptomycin

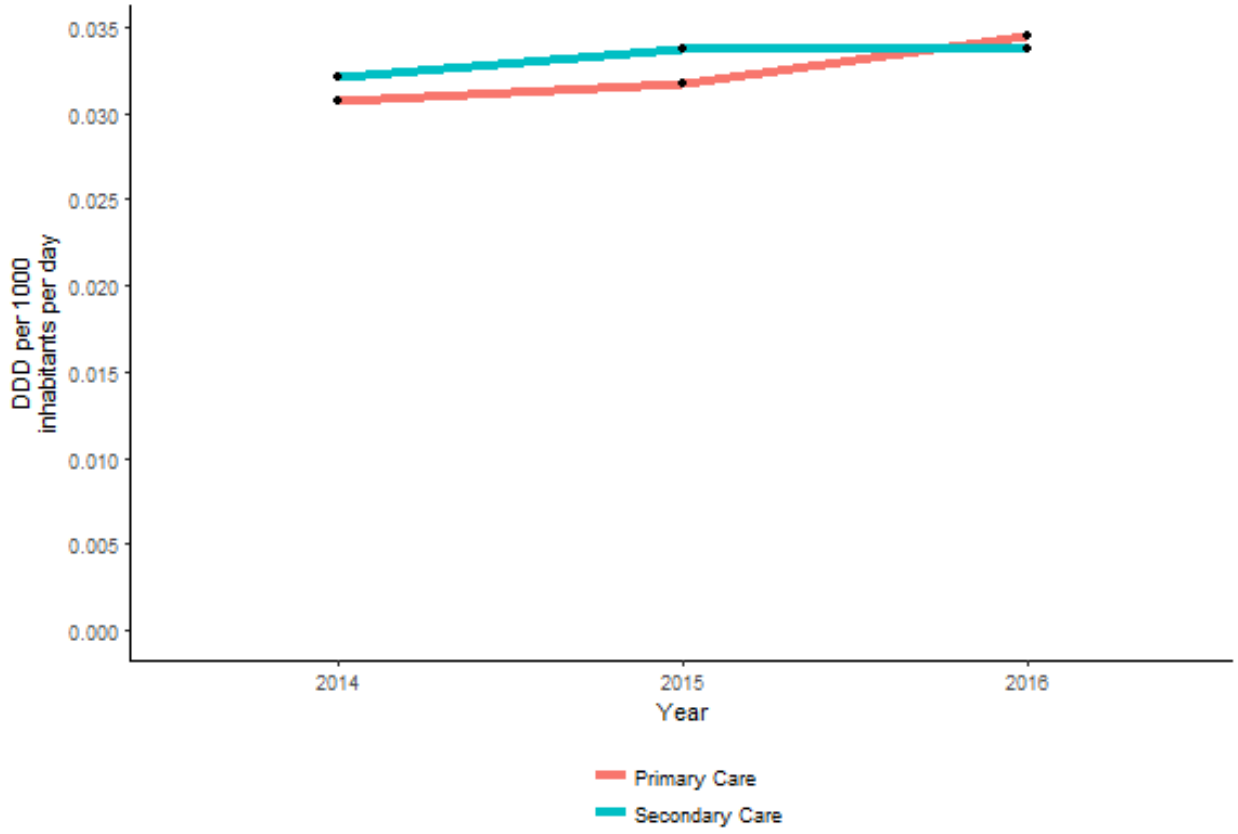

Figure 36: Consumption of glycopeptide and daptomycin by prescriber location expressed per 1000 inhabitants per day, NI, 2014 - 2016

The consumption rates of glycopeptides and daptomycin have been stable in primary care during 2014 - 2016 (0 DDD per 1000 inhabitants per day during 2016) and in secondary care (0.16 DDD per 1000 inhabitants per day; Figure 36).

Colistin

Table 13: Total rate of colistin consumption expressed as DDD per 1000 inhabitants per day, NI, 2014-2016.

Year	Antibiotic	DDD	Population	rate
2014	colistin	87099	1840500	0.13
2015	colistin	81284	1851600	0.12
2016	colistin	86434	1862100	0.13

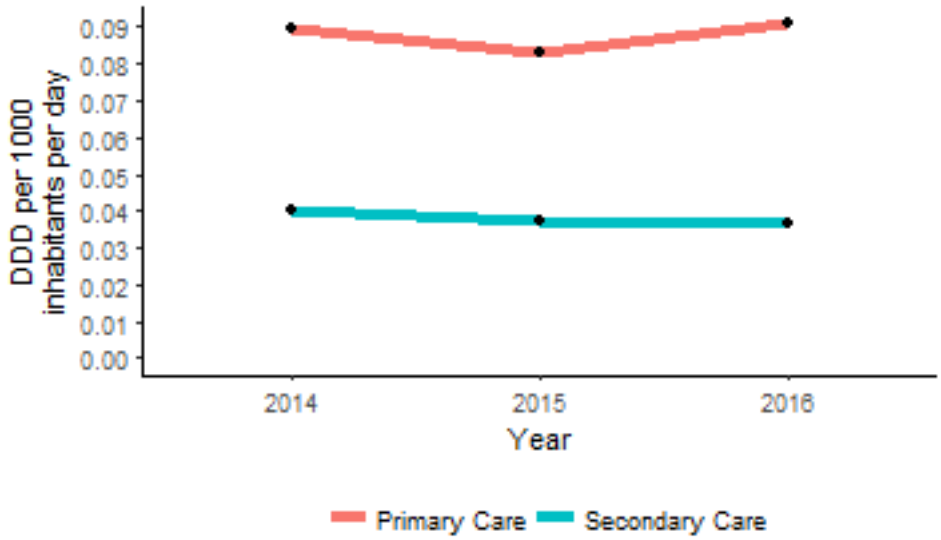

Figure 37: Consumption of colistin by prescriber location expressed per 1000 inhabitants per day, NI, 2014 - 2016

Overall, the rate of colistin consumption has remained stable during 2014 - 2016 with a rate of 0.13 DDD per 1000 inhabitants per day in 2016. This trend is influenced by stable rates in primary care during 2014 - 2016 (0.09 in 2014 to 0.09 DDD per 1000 inhabitants per day during 2016) and in secondary care (0.04DDD per 1000 inhabitants per day during 2016; Figure 37).

Antibiotic guardians

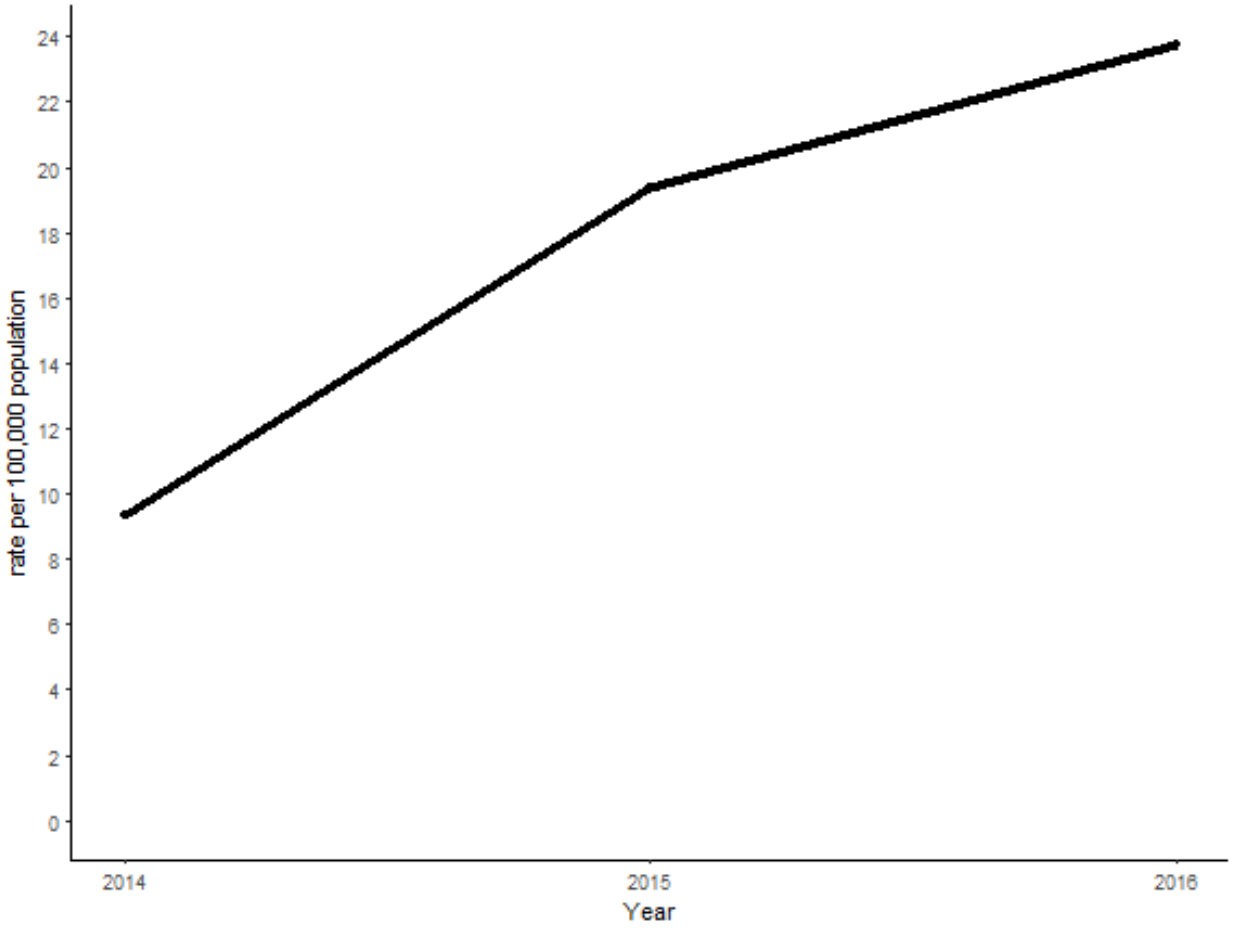

Figure 38: Cumulative rate of antibiotic guardians per 100,000 population, NI, 2014 - 2016

There has been a year on year increase in the cumulative rate of antibiotic guardians in Northern Ireland. During 2016, there were 440 individuals registered (24 individuals per 100,000 population; Figure 38).

Discussion

This is the first report of antimicrobial resistance and antimicrobial consumption in Northern Ireland. We have aimed to make the content generally comparable with the ESPAUR report for England[4]. In future reports, we aim to be able to access, analyse and report more detailed information about antimicrobial use and resistance in specific healthcare settings.

Antimicrobial resistance

The focus for the antimicrobial resistance section was the organism-antibiotic combinations that were identified as part of the UK AMR strategy[3]. In NI, surveillance for these organisms is not mandatory and is based on the voluntary reporting by the microbiology laboratories to the PHA. Therefore, underreporting of the organisms is a possibility.

The information presented in this report demonstrates increasing incidence and increasing resistance of many bloodstream infections, particularly *E. coli* and *K. pneumoniae*. A steady increase in infections caused by glycopeptide-resistant enterococci was only broken by a decline in 2016.

E. coli and *K. pneumoniae* bloodstream infections have been targeted as part of the UK governments ambition to reduce healthcare-associated gram-negative bloodstream infections by 50% by 2020. In order to reduce the number of these infections, local teams will need timely information about the characteristics of the patients who are affected, the risk factors that contributed to the infection and which healthcare settings were responsible. We are working towards implementing a harmonised, enhanced healthcare-associated infection surveillance programme that will capture information on existing mandatory surveillance organisms (*Staphylococcus aureus*, *Clostridium difficile* and Pseudomonas species from augmented care settings) and extend this to include enhanced information about *E. coli*, *K. pneumoniae*, Pseudomonas species from all settings and carbapenamase-producing organisms (CPOs). These new data will be an important source of business intelligence for Health and Social Care Trusts as they aim to improve the quality and safety of the care that they provide. The success of this new programme will require Trusts to take steps to implement new data collection arrangements quickly for the benefit of their patients.

Antimicrobial resistance in most of the selected organisms has remained relatively stable since 2009. The resistance trends for the gram negative bacteraemias are similar to

that observed in England and, for the most part, the proportions resistant are lower in NI. There are higher proportions of *E. coli*, *K. pneumoniae* and Pseudomonas species resistant to piperacillin/tazobactam in NI compared to England (15.6%, 19% and 12% in NI during 2016 compared to 11.8%, 17.8% and 10.3% in England). For *K. pneumoniae*, the proportion resistant to gentamicin was also higher in NI than in England during 2016 (10.9% compared to 8.9% respectively). While the proportion of isolates that are resistant to key antibiotics has not changed very much over time, the absolute number of resistant infections has increased because of the overall rising number of infections.

As antimicrobial resistance is a transmissible global problem, PHA will collaborate with Public Health England and the Scottish, Welsh and Irish public health organisations, to contribute to the European Antimicrobial Resistance Surveillance Network (EARS-Net) and the World Health Organisation's Global Antimicrobial Resistance Surveillance System (GLASS). This will ensure standardised information on antimicrobial resistance is available to inform comparisons and drive improvement.

Antibiotic consumption

Total antibiotic consumption in Northern Ireland has remained unchanged for three years at 32 DDD per 1,000 inhabitants, with little overall change in primary or secondary care. Despite this, the rate of antimicrobial consumption in secondary care per admission or per occupied bed day has steadily increased over time, perhaps suggesting that the case-mix of hospital inpatients has become more severe over time. This stasis is in contrast with the situation in England, where antibiotic consumption has fallen, and is now measured at 21 DDD per 1,000 inhabitants per day. By this measure, Northern Ireland's total antibiotic consumption is 52% higher than that of England.

Penicillins, tetracyclines and macrolides were the most commonly prescribed antibiotics in both settings, and there has been little change in these in either setting. There were some welcome reductions in the use of specific antibiotics. The use of carbapenems, and meropenem in particular, declined over time in Northern Ireland, which is an encouraging trend. Use of co-amoxiclav also fell markedly in 2016, and trimethoprim use fell slightly. In general, however, comparison with antimicrobial use in England highlights substantially higher use in Northern Ireland. Piperacillin/tazobactam consumption remained unchanged in 2016 at 0.21 DDD per 1,000 inhabitants per day, which is more than twice the declining rate in England (0.1 DDD per 1,000 inhabitants per day). The rate of cephalosporin use was steady at 0.57 DDD per 1,000 inhabitants per day, which is nearly twice the declining English rate of 0.33 DDD per 1,000 inhabitants per day. The use of tetracyclines, particularly doxycycline, increased in Northern Ireland to 7.49 DDD per 1,000 inhabitants per day, which was much higher than the English rate of 4.7 DDD per 1,000 inhabitants per day. The use of quinolones and macrolides has remained unchanged over the last 3 years in Northern Ireland, during which time use has decreased in England.

Colistin is an antibiotic of last resort that is used for multidrug-resistant infections and also as an inhaled therapy for people with cystic fibrosis. Colistin consumption in Northern Ireland has been steady for the last three years, but rates are higher than in England (0.13 DDD per 1,000 inhabitants per day in 2016 in NI and 0.073 DDD per 1,000 inhabitants per day in 2016 in England).

The amount of antimicrobial use in Northern Ireland is markedly higher than England. Understanding the reasons for the difference is a complex task. Most antibiotics were prescribed in the primary care setting. In order to understand and address the factors that lead to antibiotic consumption, we need information about the characteristics of the people who are prescribed them. There is currently no publicly available information about the

factors that influence antibiotic prescribing in Northern Ireland. It is a priority for PHA to work with the Health and Social Care Board and other primary care stakeholders to fill this information gap. In the secondary care setting, investigating the reasons for differences is vastly more difficult because antimicrobial consumption is measured at ward level, not at patient level, and therefore there is no routine source of information that links antibiotic use to individual patient details. Health and Social Care Northern Ireland has committed to developing a new electronic health care record ("Encompass"), which will ultimately include electronic prescribing, which will provide a rich source of information about the factors influencing antimicrobial consumption. However, over-use of antibiotics is already causing harm to patients, and we cannot afford to wait years before addressing the challenges of inappropriate antimicrobial prescribing. Reducing antimicrobial consumption safely is the complex challenge that faces all of us. One way of engaging clinicians (as well as other professionals and the public) in this challenge, is to encourage them to sign up to an Antibiotic Guardian pledge. There were fewer new Antibiotic Guardians in 2016 than in previous years, and we have put in place new measures to promote this campaign, particularly to professionals.

Actions to reduce antimicrobial use and resistance

Public communication

The O'Neill report recommended a major global information campaign to raise awareness about the future harms likely to occur if antibiotic use was not reduced. PHA has developed a communications plan to communicate with people in Northern Ireland about the potential harms related to inappropriate antibiotic use. This will involve running engagement events, social media and news releases at key points. Highlights include:

- Significant press and social media activity planned around World Antibiotic Awareness Week (13-18 November 2017)
- A public engagement event about antimicrobial resistance on European Antibiotic Awareness Day in the W5 science education centre in Belfast (18 November 2017)
- PHA is working with Council for the Curriculum, Examinations and Assessment to map the learning outcomes from the PHE-produced e-Bug materials against the NI primary and secondary curricula and to promote the materials to schools
- PHA is working with the Northern Ireland STEM Ambassador Hub and Centre of Excellence in Public Health, QUB, to deliver classes about antimicrobial resistance to pupils in 2017 and 2018 using the e-Bug materials

Changing prescribing behaviour

Safely reducing antimicrobial use is a complex challenge that will require an understanding of the capacity, opportunity and motivation of prescribers to decide when not to prescribe antibiotics. PHA is working closely with behavioural scientists in the Innovation Lab (based in the Department of Finance) to learn more about prescribing behaviour and how to safely bring about circumstances that change it. Recent initiatives to reduce antimicrobial consumption include:

- Endorsement of the TARGET toolkit for GPs by the Improvement Board and promotion of this to GPs through the Royal College of General Practitioners. Workshops for GPs will be delivered in 2018.
- A survey of GPs about the factors that influence their antibiotic prescribing decisions was conducted by the Innovation lab in September and October 2017, with preliminary results due to be presented on 13 November 2017.

- A systematic review of behavioural science interventions for antimicrobial stewardship is underway between the Innovation Lab and PHA.
- A guest editorial was published in the Ulster Medical Journal in September 2017 aimed at promoting awareness of antibiotic stewardship, the Antibiotic Guardian pledge and events occurring around World Antibiotic Awareness Week[9].
- A letter using behaviour change techniques was written from the Chief Medical Officer, Dr Michael McBride, to GPs in the 20% highest antibiotic prescribing practices in October 2017, based on one that was shown to be effective in a randomised controlled trial[10].
- A pilot of point-of-care CRP testing for respiratory infections in primary care is underway in five general practices, with one in each LCG area. Evaluation of the pilot will be used to inform decisions about wider adoption.

Appendix 1: AMR surveillance categories

Table 14: Antibiotic names (trade and generic) and assigned surveillance group for the antimicrobial resistance data

Antibiotic surveillance group	Individual antibiotic name
3rd Generation Cephalosporin	cefotaxime
3rd Generation Cephalosporin	claforan
3rd Generation Cephalosporin	ceftazidime
3rd Generation Cephalosporin	fortum
3rd Generation Cephalosporin	cefpodoxime
3rd Generation Cephalosporin	ceftizoxime
3rd Generation Cephalosporin	ceftriaxone
Carbapenem	meronem
Carbapenem	meropenem
Carbapenem	imipenem
Carbapenem	ertapenem
Ciprofloxacin	ciprofloxacin
Ciprofloxacin	low level ciprofloxacin
Ciprofloxacin	ciproxin
Co-amoxiclav	co-amoxiclav
Co-amoxiclav	amoxicillin/clavulanate
Co-amoxiclav	augmentin
Colistin	colistin
Colistin	colomycin
Gentamicin	gentamicin
Gentamicin	lugacin
Gentamicin	cidomycin
Gentamicin	genticin
Gentamicin	garamycin
Gentamicin	high_level gentamicin
Glycopeptide	vancocin
Glycopeptide	vancomycin
Glycopeptide	teicoplanin
Macrolides	clarithromycin

Antibiotic surveillance group	Individual antibiotic name
Macrolides	erythromycin
Macrolides	azithromycin
Macrolides	erythrocin
Macrolides	erythromid
Methicillin	cefoxitin
Methicillin	flucloxacillin
Methicillin	floxapen
Methicillin	oxacillin
Methicillin	meticillin
Methicillin	celbenin
Methicillin	cloxacillin
Methicillin	orbenin
Penicillin	apsin
Penicillin	benzylpenicillin
Penicillin	phenoxymethylpenicillin
Penicillin	penicillin
Penicillin	penidural
Piperacillin/Tazobactam	tazocin
Piperacillin/Tazobactam	piperacillin/tazobactam

Appendix 2: AMC data categories

Table 15: Antibiotic names, ATC codes and assigned surveillance group for the antimicrobial consumption data

Antibiotic surveillance group	Individual antibiotic name	ATC codes
Aminoglycosides	amikacin	J01GB06
Aminoglycosides	gentamicin	J01GB03
Aminoglycosides	neomycin	A07AA01
Aminoglycosides	neomycin	J01GB05
Aminoglycosides	tobramycin	J01GB01
Anti-Clostridium difficile agents	fidaxomicin	A07AA12
Anti-Clostridium difficile agents	metronidazole	P01AB01
Anti-Clostridium difficile agents	vancomycin	A07AA09
Anti-folate agents	co-trimoxazole	J01EE01
Anti-folate agents	dapsone	J04BA02
Anti-folate agents	methenamine	J01XX05
Anti-folate agents	nitrofurantoin	J01XE01
Anti-folate agents	sulfadiazine	J01EC02
Anti-folate agents	sulfapyridine	J01EB04
Anti-folate agents	sulphamethoxypyridazine	J01ED05
Anti-folate agents	trimethoprim	J01EA01
Anti-protozoal agents	paromomycin	A07AA06
Anti-tuberculous drugs	capreomycin	J04AB30
Anti-tuberculous drugs	cycloserine	J04AB01
Anti-tuberculous drugs	ethambutol	J04AK02
Anti-tuberculous drugs	isoniazid	J04AC01
Anti-tuberculous drugs	prothionamide	J04AD01
Anti-tuberculous drugs	pyrazinamide	J04AK01
Anti-tuberculous drugs	rifabutin	J04AB04
Anti-tuberculous drugs	rifampicin	J04AB02
Anti-tuberculous drugs	rifampicin + isoniazid	J04AM02
Anti-tuberculous drugs	rifampicin+isoniazid+pyrazinamide	J04AM05
Anti-tuberculous drugs	rifaximin	A07AA11
Anti-tuberculous drugs	streptomycin	J01GA01

Antibiotic surveillance group	Individual antibiotic name	ATC codes
Carbapenems	ertapenem	J01DH03
Carbapenems	imipenem with cilastatin	J01DH51
Carbapenems	meropenem	J01DH02
Cephalosporins	cefaclor	J01DC04
Cephalosporins	cefadroxil	J01DB05
Cephalosporins	cefalexin	J01DB01
Cephalosporins	cefazolin	J01DB04
Cephalosporins	cefixime	J01DD08
Cephalosporins	cefotaxime	J01DD01
Cephalosporins	cefoxitin	J01DC01
Cephalosporins	cefpodoxime	J01DD13
Cephalosporins	cefradine	J01DB09
Cephalosporins	ceftaroline	J01DI02
Cephalosporins	ceftazidime	J01DD02
Cephalosporins	ceftriaxone	J01DD04
Cephalosporins	cefuroxime	J01DC02
Glycopeptides and Daptomycin	daptomycin	J01XX09
Glycopeptides and Daptomycin	teicoplanin	J01XA02
Glycopeptides and Daptomycin	vancomycin	J01XA01
Lincosamides	clindamycin	J01FF01
Macrolides	azithromycin	J01FA10
Macrolides	clarithromycin	J01FA09
Macrolides	erythromycin	J01FA01
Macrolides	telithromycin	J01FA15
Monobactams	aztreonam	J01DF01
Nitroimidazoles	metronidazole	J01XD01
Nitroimidazoles	tinidazole	J01XD02
Nitroimidazoles	tinidazole	P01AB02
Other antibiotics	chloramphenicol	J01BA01
Other antibiotics	colistin	J01XB01
Other antibiotics	colistin	A07AA10
Other antibiotics	fosfomycin	J01XX01
Other antibiotics	fucidic_acid	J01XC01
Other antibiotics	quinupristin	J01FG02

Antibiotic surveillance group	Individual antibiotic name	ATC codes
Oxazolidinones	linezolid	J01XX08
Oxazolidinones	linezolid	J01XX10
Oxazolidinones	tedizolid	J01XX11
Penicillins	amoxicillin	J01CA04
Penicillins	ampicillin	J01CA01
Penicillins	benzathine-benzylpenicillin	J01CE08
Penicillins	benzylpenicillin	J01CE01
Penicillins	co-fluampicil	J01CA51
Penicillins	co-fluampicil	J01CR50
Penicillins	flucloxacillin	J01CF05
Penicillins	phenoxymethylpenicillin	J01CE02
Penicillins	pivmecillinam	J01CA08
Penicillins	procaine	J01CE09
Penicillins	temocillin	J01CA17
Penicillins with beta lactamase inhibitors	co-amoxiclav	J01CR02
Penicillins with beta lactamase inhibitors	piperacillin/tazobactam	J01CR05
Penicillins with beta lactamase inhibitors	ticarcillin with clavulanic_acid	J01CR03
Quinolones	ciprofloxacin	J01MA02
Quinolones	levofloxacin	J01MA12
Quinolones	moxifloxacin	J01MA14
Quinolones	norfloxacin	J01MA06
Quinolones	ofloxacin	J01MA01
Tetracyclines and related drugs	demeclocycline	J01AA01
Tetracyclines and related drugs	doxycycline	J01AA02
Tetracyclines and related drugs	lymecycline	J01AA04
Tetracyclines and related drugs	minocycline	J01AA08
Tetracyclines and related drugs	oxytetracycline	J01AA06
Tetracyclines and related drugs	tetracycline	J01AA07
Tetracyclines and related drugs	tigecycline	J01AA12

Appendix 3: Testing data

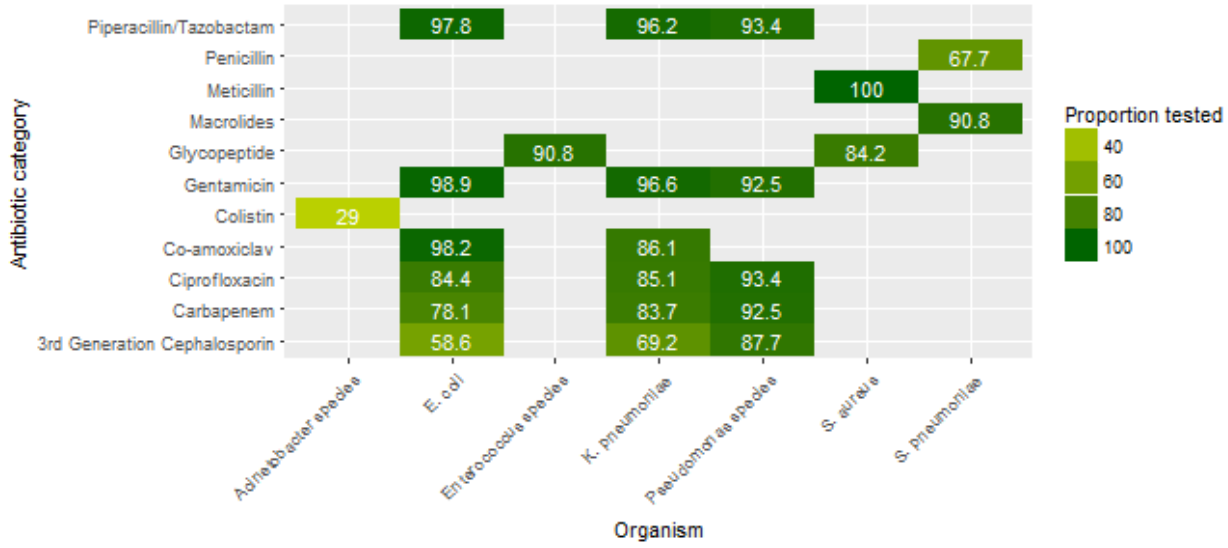

Figure 39: The proportion of key bacteraemias where selected antibiotic susceptibility results were reported to the PHA

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HSC Public Health Agency

board paper

Research and Development Division Annual Report 2016/17

date	21 December 2017	**item**	9	**reference**	PHA/03/12/17
presented by	Dr Carolyn Harper, Medical Director				
action required	For noting				

Summary

This R&D Annual Report for the financial year 2016-17 includes an updated version of the Implementation Plan (to November 2017), and a 2016-17 budget outturn, as well as a short statement of the current in-year position.

Equality Impact Assessment

N/A

Recommendation

The Board is asked to **NOTE** the report.

HSC R&D Division Annual Report

2016-17 Financial Year

Following the launch of the third HSC R&D Strategy in February 2016, HSC R&D Division is responsible for delivery on the Implementation Plan (Annex 1). The Strategy has five key objectives, and actions to deliver on these are set out in the plan, which is updated at regular quarterly business planning meetings and shared on a six-monthly basis with the HSC R&D Strategic Advisory Group, and annually with the PHA Board. Two meetings of the Strategic Advisory Group took place during 2016-17, on 19 July 2016 & 14 December 2016.

Budget

The HSC R&D Fund was allocated in 2016-17 from capital funds for the first time, and remains unchanged in value, standing at a baseline value of £10.3m.

An independent review of the impact of HSC R&D funding, showed a greater than 4-fold return on investment, over a 13-year period. Based on this finding, an additional allocation of approximately £3.2m towards the Northern Ireland annual, population-based contribution to the UK-wide funding pot managed by the National Institute of Health Research (NIHR) in England was agreed in 2012. This contribution commenced in 2013-14 for a four year period, and continued to be allocated from revenue funds until 2016-17. The annual funding available UK-wide is approximately £100m, and the contribution enables NI researchers to lead applications, bringing the total funding amount to a NI institution. To date, the return on investment was shown to be almost 3-fold, and a business case was submitted during 2016-17 making a strong case for the renewal of this funding for a further five year period (Action 2.2.2 in the Implementation Plan). As well as significant research income, reputational benefits for NI researchers and job creation, this funding potentiates significant benefits for Northern Ireland service users who have the opportunity to participate in high quality research studies that may not otherwise have taken place in Northern Ireland sites.

The HSC R&D Fund remains lower per capita than other parts of the UK by a factor of approximately three-fold, therefore HSC R&D Division also seeks to augment the fund through partnership initiatives (see actions under Objective 2 in the Implementation Plan). Furthermore, HSC R&D Division actively encourages and facilitates researchers to make applications to major funders such as the National Institute of Health Research in the UK, competitive EU funding streams such as Horizon 2020 and the US National Institutes of Health under the US-Ireland Partnership Programme. A number of these result in direct income which flows through the PHA and which is linked to specific award schemes, such as the MRC contribution to the US-Ireland Partnership programme.

The 2016-17 year-end budget outturn, including income, is summarised in Annex 2. Please note that the expenditure is listed under a series of 'strands', which cover the various themes of HSC R&D Division's day-to-day work. A key to these is provided in Annex 2 for convenience. However, reference has also been made to how the work relates to the objectives/actions within the R&D Strategy Implementation Plan. The remainder of this report is set out under these headings to group together similar investments. A list of projects with start dates during 2016-17 is provided at Annex 3.

Research Portfolio

The sections below summarise status of each work 'strand' at year end 2016-17:

Career Development (CDV)

HSC R&D Division recognises the need to invest in training for future health and social care researchers, both in general and also where there are specific skills gaps. A number of Doctoral, Post-Doctoral, Senior Researcher and Clinician Scientist Fellowship programmes are managed by the National Institute of Health Research in England, which are highly competitive and awarded only to high calibre candidates. Researchers from Northern Ireland can apply to these schemes, and if successful, their award is funded from the HSC R&D Fund. A number of these awards are ongoing at present, covering a range of areas, including physical activity interventions at a population level and post-stroke, palliative care in end-stage renal disease, acute respiratory distress syndrome and the epidemiology of cancer progression. This work contributes to Actions 1.1 & 1.3.2 in the Implementation Plan.

Commissioned Research (COM)

Two main commissioned research programmes are underway, in Mental Health and Dementia Care. Both programmes were funded following priority-setting initiatives involving service users and HSC professionals.

Five studies were funded under the Mental Health programme, the second of which was launched during 2016-17. The study focused on transitions and Outcomes for care leavers with mental health and/or intellectual disabilities. Three further studies are still in the late stages of completion.

The Dementia Care commissioned call was a £2m fund created through a partnership between HSC R&D Division and The Atlantic Philanthropies. The seven funded studies are well underway and due to complete during 2017-18.

Further opportunities to commission relevant research are being explored.

The Opportunity-Led Commissioned funding scheme is a further opportunity for HSC R&D Division to leverage funding into Northern Ireland. This scheme allows researchers to request additional funding from HSC R&D Division, to match funding obtained from another source (up to 50% of the total value of a study may be requested). A number of opportunity-led awards commenced in 2016-17 as detailed in Annex 3. This work contributes to Action 4.2 in the Implementation Plan

Dissemination (DIS)

Dissemination of the results of research remains a key priority for HSC R&D Division. Within this strand the HSC R&D Division and the Health Research Board offer a series of short training courses and 2-year part-time Fellowships under the Cochrane Programme. The Cochrane Library is also free to access for all citizens on the Island of Ireland, thanks to contributions from HSC R&D Division and the Health Research Board. Support is also provided for research Workshops & Conferences, with up to £2500 being provided for each event. HSC R&D Division also continues to support innovation through the HSC Innovations service, which provides a management service for innovations arising through the work of health and social care employees, so that the value returned to HSC is maximised (action 2.6.1). The annual ResearchFish data collection process is also included under this work strand. See actions 4.4 and 5.1 in the Implementation Plan.

Education and Training (EAT)

HSC R&D Division has a long term commitment to education and training of health and social care researchers. Under the EAT work strand, there are two main active programmes – an annual Doctoral Fellowships scheme, which awards approximately four new Fellowships per year to HSC and/or voluntary sector employees working in relevant health and social care, and the GP Research

Training Scheme, which awards two trainees per year with protected time to undertake a research project. New awards during 2016-17 are detailed in Annex 3. This work contributes to action 1.3 in the Implementation Plan.

A long-running Memorandum of Understanding between Northern Ireland, Ireland and the United States is the Ireland- Northern Ireland- National Cancer Institute (NCI) Cancer Consortium. Under this MoU, Northern Ireland researchers are able to access three places per year on each of two NCI summer courses, the Cancer Prevention and Molecular Cancer Prevention Courses, which run in the National Cancer Institute in Baltimore. Attendees during 2016-17 are detailed in Annex 3. Also see action 2.5.3 in the Implementation Plan.

The R&D Strategic Advisory Group was asked to consider future investment in two training programmes which are due to start in 2017-18 and 2018-19. The first of these programmes is a partnership with Queen's University Centre for Cancer Research and Cell Biology, Princess Margaret University in Canada and the National Cancer Institute in the USA. This programme will allow Clinical Academic Fellows from Northern Ireland to spend time in Canada, to receive training in new skills that will enhance the Northern Ireland cancer research environment. The first awardees will travel to Canada and the US in 2017-18. The second programme is a major investment by the Wellcome Trust of £10m, in a Clinical Doctoral Fellowship Programme across 8 universities in Ireland, including Queen's University. Eight Doctoral Fellowships will be awarded annually, with six of these being funded by Wellcome Trust, and one each by HSC R&D Division and the Health Research Board. Funding for this will commence in 2018-19. These will contribute to Action 1.3.2 in the Implementation Plan.

Responsive mode funding (RES)

Knowledge exchange is an important mechanism to allow the diffusion of research findings into practice, policy and, where appropriate, enterprise. A few knowledge exchange awards remain active under this work strand, with the 2016-17 expenditure detailed in Annex 3. HSC R&D Division, as part of their implementation of the R&D strategy, is currently reviewing the support provided for Knowledge Exchange, with a view to increasing competence and capability in this important area. (See action 5.1.3 in the Implementation Plan).

Special Initiatives and Strategic Links (SPI and STL)

These two work strands currently consume the most significant proportion of the HSC R&D Fund, and the key initiatives will be detailed below:

Infrastructure Support in HSC Trusts and Universities

Over the last decade, HSC R&D Division has put in place a significant research infrastructure of skilled HSC professionals trained in the delivery of high quality clinical trials and other research studies. The infrastructure allows Northern Ireland to be an active participant in studies taking place across the UK and also to be competitive when making applications for research funding. Following the last review of public administration, research offices were created in the five new HSC Trusts located in Belfast, Northern, Southern, South Eastern and Western areas. A Director (0.2WTE) and agreed staffing levels were put in place in these Offices and remain in place to manage all aspects of Trust research governance. The largest single elements of R&D infrastructure are the Northern Ireland Clinical Research Network and Northern Ireland Cancer Centre and Network. These networks mirror similar structures elsewhere in the UK and are composed of research-skilled professionals who are in place to deliver on a portfolio of commercial and non-commercial studies as

and when required. A rapidly expanding Clinical Trials Unit, which is accredited in the UK by the UK Clinical Research Collaboration, has been particularly successful in supporting applications to large funders such as the National Institute of Health Research. The Northern Ireland Biobank commenced phase 2 funding during 2016-17, and continues to accumulate prospective collections of tumour tissue and provide access to tissues from the HSC archives.

An overall review of the research infrastructure funded from the HSC R&D Fund commenced in 2017-18, as outlined in the Implementation Plan under action 1.3.4.

A new infrastructure initiative commenced in 2016-17, the Cell-based Therapy Centre in Belfast Trust. This Centre, overall budget £2.5m was jointly funded by DoH (Capital; £1.07m), with the Medical Research Council and Queen's University. During 2016-17, this funding supported a major refurbishment within the existing Victoria Pharmaceuticals building, to create adequate facilities for the management of cell-based therapies. Investigators have already secured funding for two major grants to support this type of study in Belfast, and this again offers a further opportunity for service users to have access to novel therapies on research studies that would not otherwise have had sites in Northern Ireland.

The Northern Ireland Public Health Research Network and Public Health Centre of Excellence

Support for the NI Centre of Excellence in Public Health Research is in place since 2008-09, and was initially awarded through a UK-wide competitive process managed by the UK Clinical Research Collaboration (a Consortium of the main UK health research funders). A number of additional awards from the HSC R&D Fund have been made in association with the Centre grant, including the ongoing Northern Ireland Cohort of Lifestyle and Ageing (NICOLA). In close association with the Centre, the Northern Ireland Public Health Research Network brings together a broad range of public health professionals, academics and third sector members, with the aim of growing the public health research portfolio in Northern Ireland. Already since 2012, the network has facilitated and/or participated in a number of successful research funding applications. This work contributes to actions 1.4.3 and 1.4.4 of the Implementation Plan.

The US-Ireland Partnership Programme

Active since 2006, the US-Ireland Partnership Programme offers the opportunity for tripartite proposals to be put forward from research teams, with partners from Northern Ireland, Ireland and United States, to compete through the R01 award scheme in the US National Institutes of Health. This extremely prestigious funding scheme carries significant kudos and is likely to be a factor in future success for the researchers. An agreement is in place between HSC R&D Division and the Medical Research Council, which will contribute a total of £150k to any awards that it considers within its own remit. This programme continues to attract an encouraging and growing number of applications. 5 awards were active during 2016-17 and new award(s) are detailed in Annex 3. Also see action 2.5.1 of the Implementation Plan.

The Centre for Stratified Medicine

This five-year funding award was made in partnership with InvestNI and Ulster University, with HSC R&D Division contributing £1m to a total funding envelope of £11.5m. The Centre was established in Autumn 2013 following an award of £11.5M (from European Union Regional Development Fund (ERDF) EU Sustainable Competitiveness Programme for N. Ireland, InvestNI, the Northern Ireland Public Health Agency (HSC R&D) & Ulster University). The Northern Ireland Centre for Stratified Medicine aims to identify how genes or patterns in levels and state of molecules within our bodies,

or subtle differences in medical images, could be used to create robust clinical decision making tests for a range of degenerative diseases.

The All-Ireland Institute for Hospice and Palliative Care

Following a highly successful first phase, the Institute and associated palliative care research network approached HSC R&D Division and HRB to co-fund two posts to support research and knowledge exchange activities. Funding for these is due to commence in 2017-18. This contributes to action 3.5.1 of the Implementation Plan.

Support for UK Schemes (SUS)

This workstrand covers a small number of contributions to UK-wide consortia, as well as payment for services from the Health Research Authority in the UK-wide work on research governance. This work is led for Northern Ireland by the Assistant Director of R&D on behalf of DoH and the HSC. The AD attends meetings and leads policy decision-making in partnership with the other three UK nation leads. A number of the Trust R&D Managers are involved in the operational work to translate the policy decisions into practice, and local meetings are regularly convened with all five Trusts and the Universities to discuss, (see actions 3.1 and 3.2).

Two further workstrands, Recognised Research Groups (RRG) and Core Funded Units (CFU), are no longer active, with only one award remaining in the final stages of completion under the RRG strand.

General

A number of cross-cutting or underpinning activities are ongoing that do not appear in the sections above. R&D Division maintains a dedicated website and issues regular bulletins to the research community (action 1.1.3). Work is ongoing to develop a template for Trusts to report on research activity (action 1.2.2). Links have been established to support the development of research within the social work and social care professions (actions 1.4.1. and 1.4.2). HSC R&D Division continues to develop relationships with key commercial sector partners such as InvestNI, Personal and Public Involvement in research has been an important part of the work of HSC R&D Division for almost 10 years, and a vibrant group, 'Public Involvement Enhancing Research' (PIER), is co-chaired by a PPI representative and Dr Gail Johnston, Programme Manager in HSC R&D Division. This contributes to actions under 4.1 of the Implementation Plan. A number of collaborative initiatives with the Health Research Board are underway and this trend is set to continue during future years. This contributes to action 3.5. Work is also ongoing to scope and develop a research training programme for novice and experienced researchers (see action 1.1.1).

2017-18 Position

As this report is focused chiefly on the 2016-17 financial year, an update on the current financial position has not been included. However, HSC R&D Division expects to achieve break even at year-end 2017-18, and despite the prevailing political issues that have prevented firm budget allocations, an indicative budget was provided that would cover all committed awards. A full report will be delivered in respect of 2017-18. Please note that the Implementation Plan update provided is current as of November 2017.

HSC R&D Implementation Strategy - Quarterly Update (September 2017)

Objectives should be coloured red (significant delay) amber (slightly behind schedule) or green (on track) to signify progress lll

OBJECTIVE 1.

To support research, researchers and the use of evidence from research to improve the quality of both health and social care and for better policy making

Actions	Timescale	Responsible Officer/Institution	Update Colour	Progress Update
1.1 Engage with HSC organisations to raise awareness of the value of research skills for productive professional employees, and encourage capacity building through education and training to foster a research-active workforce for the HSC				
1.1.1 Develop a research training programme to enhance staff capability and skills, and commission annual training schedule to enable staff to develop the required competencies	By April 2017	Naomh Gallagher		Project has been picked up by new Programme Manager following retirement of previous post-holder. Options for training requirements for various needs are being explored, including online training provided by Health Research Authority (England) and shared training with the Universities for alternatives to Good Clinical Practice training.
1.1.2 Establish a structured framework to support HSC professionals towards the development of post-doctoral and senior research careers	By December 2018	Naomh Gallagher		Exploring the possibility of contacting alumni from Doctoral Fellowships and others, and arranging events or workshops to establish a community of past awardees. Also looking at how NI National Institue of Health Research (NIHR) Fellowship award holders could be integrated into NIHR lists and events
1.1.3 Raise awareness through regular R&D updates in various formats for the HSC community to highlight research successes	Weekly e-mail. Quarterly web features, other media	All		Regular updates to website and email newsletter are main vehicles, but other avenues live eg PHA internal mailing list Currently some infographics/leaflets in preparation
1.2 Encourage HSC organisations to support staff to undertake research relevant to their clinical responsibilities				
1.2.1 Establish a bi-annual meeting with each Trust with R&D Director and responsible Executive Director to review research activity & capacity development	By September 2016	Ian Young		
1.2.2 Agree and establish a formal process for HSC Trusts at executive level to report on research activity through appropriate metrics	By September 2016	Ian Young		Discussed at R&D Director's meetings. IY has agreed to create a template report for discussion
1.3 Provide funding support at all levels for HSC relevant research, with appropriate involvement of HSC professionals				

1.3.1 Continue to provide funding to support early-stage research projects within HSC	Annual	Janice Bailie		R&D Director's (Discretionary) Fund - £50,000 per Trust each year, allows start-up funding to be provided for small scale projects or may be used for support posts at discretion of R&D Directors - reports are provided on annual basis to provide detail of awards made
1.3.2 Invest in appropriate education and training & career development awards programmes	Annual	Naomh Gallagher/Gail Johnston		Investment has continued in HSC R&D Doctoral Fellowship awards as well as some specialist clinical Fellowship schemes (Wellcome-Irish Clinical Academic Training scheme and Centre for Cancer Research & Cell Biology Clinical Fellowship scheme, also supporting NIHR awards (doctoral, post-doctoral, career development, senior fellowship and clinicail scientist awards and specialist GP Academic Research Training scheme for early-stage research training in primary care
1.3.3 Continue with existing researcher-led award schemes and establish new schemes where appropriate	Ongoing cycle	All		Owing to budget limitations, most of the investment in researcher-led awards is currently through the Opportunity-led scheme. Researchers who have secured or are making funding applications to other funders can approach HSC R&D Division to partner fund up to 50% of the overall value of the award. Recent examples funded include .....
1.3.4 Continue to provide funding for necessary underpinning R&D infrastructure	Ongoing	All		Investment in infrastructure (ie skilled research professionals), has consumed the largest proportion of HSC R&D Fund over the last 10 years. The individual elements of the infrastructure can be fully- or partially-funded by HSC R&D Division, and information on each can be viewed at the following link: Currently the funded infrastructure is under review, and new initiatives have been delayed in 2017-18 due to issues with budget allocation
1.3.5 Identify sources of funding for protected time for HSC professionals to prepare research funding applications and participate in studies	By April 2018	All		Funding built into some programmes, but limited on account of budgetary constraints - additional funding has been built into the new funding bid for 2018/19 - 2020/21
1.4 Engage specifically with social work, social care and public health to develop mechanisms to support and foster research in these areas				
1.4.1 Ensure appropriate representation for social care and public health on HSC R&D Division strategic and operational groups	By December 2015	Janice Bailie/All		Social Care and Public Health representatives added to membership of R&D Strategic Advisory Group. Appropriate representation on operational groups eg Child Development Research Workstream; NI Public Health Research Network groups

1.4.2 Identify support needs for social work & social care researchers and work with relevant colleagues to address these through specific funding schemes or other measures	By Sept 2016	All		Child Care Research Forum funded, encouraged to join NI Public Health Research Network; able to access advice from R&D team, Assistant Director to attend strategic meetings
1.4.3 Ensure strategic alignment of the activities of the NI Centre of Excellence for Public Health with HSC R&D Division priorities, through active partnership	Ongoing	All		Professor Frank Kee, Centre of Excellence Director now member of R&D Strategic Advisory Group; R&D Division team part of Centre of Excellence Executive Management Committee and Board; members of R&D Division team attend and input to events and away days
1.4.4 Support the development of public health research in Northern Ireland through the Northern Ireland Public Health Research Network (NIPHRN) action plan, specific funding schemes or other measures	From October 2015	Nicola Armstrong		Ongoing activity in support of NI Public Health Research Network to produce aplications to funders such National Institute of Health Research and others; workshop programme in place for funding opportunities and creation of collaborations in breastfeeding research

OBJECTIVE 2.

To compete successfully for R&D funding, and optimise local funding, to deliver returns on investment for health and wellbeing, academia and commerce

Actions	Timescale	Responsible Officer/Institution	Update Colour	Progress Update
2.1 Aim to increase the HSC R&D Fund to align with the average per capita level of other UK health research funds				
2.1.1 Work with key stakeholders to increase the value of the HSC R&D Fund budget	By April 2018	All		Budget bid 2018-2021 submitted for increased funding (£14-£16m); ongoing efforts to agree partnership funding
2.2 Bid for funds to continue investment in the NIHR Evaluation, Trials and Studies UK funding streams, providing access to additional research funds for Northern Ireland				
2.2.1 Provide support for researchers to prepare bids through Enabling Research Awards Scheme and other mechanisms	Ongoing	Julie McCarroll		Scheme has not been re-opened due to lack of certainty around NETS investment; aim to re-open in Q4 2017-18
2.2.2 Submit business case to DoH for continuation of investment in NETSCC programmes	By Sept 2016	Janice Bailie/Julie McCarroll		Business case was submitted and considered, still awaiting formal written confirmation of funding
2.3 Seek co-funding from other Government Departments eg Department for the Econony (DfE), to support health-relevant research initiatives				
2.3.1 Explore potential funding streams eg NIHR i4i and work with relevant stakeholders towards co-investment	By April 2018	Janice Bailie		Ongoing; discussed with Wales and in context of Life Sciences Northern Ireland; no progress as yet
2.4 Increase the focus on relevant EU funding streams and facilitate HSC researchers to access EU opportunities				
2.4.1 Work within relevant networks to review the communication of relevant EU funding opportunities across the HSC, universities and other potential partners	Ongoing	Janice Bailie/Julie McCarroll		Liaising with H2020 Northern Ireland Contact Points and contributing to networking and dissemination activities. Workshop arranged for mid-November to promote 2018 calls
2.4.2 Support and participate in at least 2 events annually to promote EU funding opportunities	Ongoing	Janice Bailie/Julie McCarroll		Health Information Day planned for 14 November 2017; MIDAS workshop being supported and information disseminated.
2.4.3 Monitor and report on EU funding awards bringing funds into HSC to OFMDFM via DoH	Ongoing	Janice Bailie/Julie McCarroll		Reports provided to DoH NI upon request.
2.5 Adopt a partnership approach, identifying and investing in research funding initiatives and consortia that can bring health, social and financial benefits to Northern Ireland				
2.5.1 Review existing partnership investment eg US-Ireland Partnership awards; Ireland-Northern Ireland NCI partnership programme	Ongoing	All		Review ongoing, investment continued

2.5.2 Explore opportunities for new partnership investments	Ongoing	All		Currently planning new investments in funding consortia to creat opportunities for NI researchers to compete/participate - Joint Programme in Neurodegenerative Disease - research call to go live early 2018; UK Health Data Research - investment in new UK-wide initiative to maximise the use of health data in research; UK-Prevention Research Partnership - consortium of funders to follow on from the National Prevention Research Initiative
2.5.3 Review membership of and investments through funders fora eg National Cancer Research Institute, Experimental Medicine Funders Group, Antimicrobial Resistance Funders Forum, National Prevention Research Initiative	Ongoing	All		Discontinued investment in National Awareness and Early Detection Initiative (final stage); continued with National Cancer Research Institute; Expermintal Medicine Funders Group - further funding committed; Anti-Microbial Resistance Funders Forum - no funding as yet; National Prevention Research Initiative re-launched as UK-Prevention Research Partnership with new investment planned', all decisions in consultation with Strategic Advisory Group
2.5.4 Develop co-funding arrangements with charitable funders to develop and fund research programmes in key areas	At least one new co-funding programme per year	All		One Opportunity-led proposal likely to lead to a project co-funded with Alzheimer's Society UK. One Opportunity-led project to allow the opening of a Movember study in Northern Ireland funded.
2.6 Develop effective relationships with industry and representative organisations to ensure productive research partnerships				
2.6.1 Review outputs from HSC Innovations service and ensure activity is fit for purpose	Quarterly meetings and annual reports to Strategic Advisory Group	Janice Bailie/Julie McCarroll		Quarterly update meetings with Assistant Director on-going; short progress report requested for end of October; presentation confirmed for January 2018 Strategic Advisory Group meeting.
2.6.2 Work with key stakeholders to develop industry forum, establish meeting programme and at least one annual event co-supported with industry and representative groups eg ABPI, Biobusiness	Quarterly / Annually			Plans underway for Clinical Innovation Collaborative's annual conference to be incorporated into the European Association of Precision Medicine Conference which is being hosted in NI in November 2017.
2.6.3 Develop metrics and agree annual targets for industry-sponsored or -collaborative clinical trials activity in Northern Ireland HSC	By October 2016			Professor Ian Young discussing in context of replacement for Research Governance Controls Assurance Standard; impacted by UK wide metrics discussions initiated September 2017
2.6.4 Work with key stakeholders to scope and establish a Northern Ireland Health Innovation & Life Sciences Hub, with appropriate governance arrangements	By October 2016	Janice Bailie/Ian Young		Now termed Life Sciences NI. Discussions at an advanced stage with Departments of Health and Economy; InvestNI and PHA; dependent on political situation

2.6.5 Participate in strategic and operational management groups for Precision Medicine Catapult to help maximise the performance of the Northern Ireland Centre of Excellence	From September 2015	JB		National investment replaced by local investment; HSC R&D Division plans shared funding model with QUB/Invest NI

OBJECTIVE 3.

To support all those who contribute to health and social care research, development and innovation by enhancing our research infrastructure, benefitting from local, national and international partnerships

Actions	Timescale	Responsible Officer/Institution	Update Colour	Progress Update
3.1 Commission an independent review of HSC infrastructure currently supported through the HSC R&D Fund to ensure it continues to be fit for purpose				
3.1.1 Identify independent review Panel, organise review process and report	By April 2017	Gail Johnston/ All		Format of review process changed to include initial survey launched in March 2017; results summary published; stage 2 process agreed and underway
3.1.2 Undertake relevant re-structuring of HSC R&D infrastructure in response to review recommendations	By April 2018	All		Interim arrangements for delivery of research approvals in development
3.1.3 Monitor delivery of infrastructure on targets and objectives	Ongoing from April 2018	All		Awaiting completion of review
3.2 Work with the other UK Health Departments to ensure research governance systems that facilitate UK-wide working within an effective governance environment				
3.2.1 Monitor HSC R&D permissions metrics – work towards time for approval to be at least equivalent to that in England	By Sept 2016	Ian Young/Janice Bailie		Local metrics made publicly available on HSC R&D Divison website; UK-wide metrics discussions initiated September 2017; timing outwith R&D Division control
3.3 Support identified areas of research strength by pursuing the creation of funding streams for new elements of research infrastructure such as Biomedical Research Unit(s) (BRUs)				
3.3.1 Consider opportunities for partnership investment in the development of Biomedical Research Unit(s) and other new elements of research infrastructure which are judged to be internationally competitive through peer review	Ongoing	All		BRU discussions on hold dependent on political situation
3.4 Support implementation of key national initiatives, including the 100,000 Genomes Project and the Precision Medicine Catapult (PMC)				
3.4.1 Participate in strategic and operational management groups for 100,000 Genomes Project, working with relevant partners towards the mainstreaming of genomic medicine	From Oct 2015	IY/JMcC		100K Genomes Project underway; PHA part of governance oversight group; IY participates in CSA role
3.5 Build on existing partnerships and form new relationships with key partners on the island of Ireland to maximise the benefits of cross-border working				

3.5.1 Develop at least one new collaborative funding initiative in Ireland with the Health Research Board or other key stakeholders in RoI (eg Science Foundation Ireland)	By Sept 2016	All		INTERREG; AIIHPC and new Centre for Evidence Synthesis; Wellcome-ICAT Programme

OBJECTIVE 4.

To increase the emphasis on research relevant to the priorities of the local population

Actions	Timescale	Responsible Officer/Institution	Update Colour	Progress Update
4.1 Ensure service users and the public are appropriately and effectively involved throughout all HSC research processes				
4.1.1 Ensure Personal and Public Involvement in all funding schemes and monitor through reporting processes	Ongoing	Gail Johnston		PIER involvement in monitoring PPI in annual and final reports to be implemented
4.1.2 Provide annual training programme for R&D PPI representatives, researchers and service users		Gail Johnston		Annual PIER training programme continues.BRP workshop held x 2 per year for researchers and service users
4.1.3 Share learning from PPI activity with UK and others	Ongoing	Gail Johnston		GJ sits on 4 nations inter-governmental working group
4.1.4 Lead and participate in initiatives to encourage participation in research such as the 'It's OK to Ask' campaign, and 'Join Dementia Research'	Ongoing	Gail Johnston		Discussions being held with comms re adapting NIHR leaflets for this year's I am research campaign. Support for JDR campaign limited due to capacity issues
4.2 Commission relevant research informed by robust priority-setting exercises				
4.2.1 Review and refine research priority-setting process, identify and carry out up to one process every two years in line with strategic needs	By Sept 2016	All		Discussions on-going with social work colleagues and TinyLife; NCRI JLA Priority setting exercise on Living with and Beyond Cancer; part of HTA PRAMG Group
4.2.2 Allocate or secure partnership funding for up to one commissioned research call every two years	By Sept 2017	Janice Bailie/Ian Young		Group convened to discuss possible call around prescription drug abuse
4.3 Facilitate and maximise the use of health and other data routinely collected by the public sector for the benefit of Northern Ireland service users and the public				
4.3.1 Participate in the Honest Broker Governance Board and Working Groups	Ongoing	Nicola Armstrong		Active participation in both groups
4.3.2 Ensure appropriate governance and management of the NI Administrative Data Research Centre through appropriate representation at strategic management level	Ongoing	Ian Young/Nicola Armstrong		Part of strategic and working groups
4.4 Monitor and report the outputs and impacts of research supported by the HSC R&D Fund, ensuring it aligns with relevant policy drivers and draws in additional funding for research led by Northern Ireland researchers				
4.4.1 Conduct data collection, analysis and reports through ResearchFish and participation in quinquennial UK Health Research analyses	Ongoing	Naomh Gallagher/Nicola Armstrong		Planning for next ResearchFish data collection in 2018; working with UK-wide stakeholders towards next UK Health Research Analysis
4.4.2 Report to DoH on the return on NETSCC investment	Bi-annually	Julie McCarroll/Janice Bailie		Awaiting outcome of discussions re future funding

OBJECTIVE 5.

To disseminate research findings in such a way as to promote understanding and knowledge, support and best practice, stimulate further research and celebrate achievement

Actions	Timescale	Responsible Officer/Institution	Update Colour (RAG)	Progress Update
5.1 Support effective dissemination of research findings and use mechanisms of knowledge exchange to drive the adoption of evidence-informed practice and policy				
5.1.1 Provide funding for workshops and conferences	Annually	All		Open scheme depending on budget availability
5.1.2 Provide funding for Cochrane Fellowships	Annually	Gail Johnston		Now encompassed in new Centre for Capacity Building in Evidence Synthesis
5.1.3 Provide funding for Knowledge Exchange awards	Bi-ennially	Clive Wolsley		Reviewing scheme
5.1.4 Require all funded proposals to include a dissemination strategy	Ongoing	All		Letters of offer now include requirement for dissemination strategy in Project Management Plan; also looking at introducing Pathway to Impact Plan
5.2 Develop a communication strategy and media profile for HSC R&D Division to ensure relevant messages about HSC-funded research are effectively disseminated				
5.2.1 Develop and publish communication strategy in partnership with relevant stakeholders	By June 2016	Gail Johnston		Strategy still in draft, influenced by outcome of infrastructure review
5.2.2 Introduce consistent branding of HSC R&D activity and recognition of outputs, to promote public awareness of the value of undertaking and participating in HSC research	By Sept 2016	All		Continue to signpost researchers to the acknowledgement guidance on HSC R&D Division website; influenced by outcome of infrastructure review
5.2.3 Develop relationships with relevant media partners and schedule media reports on HSC R&D-funded research	By April 2017	All		No capacity to deliver this work at present; New comms support to take forward
5.2.4 Regular R&D updates in various formats for HSC community to raise awareness and highlight positive stories	Ongoing	All		Some excellent work on case studies has been done but limited capacity; new comms support to take forward

Annex 2 Budget

Key to Workstrands:

RRG	Recognised Research Groups
EAT	Education and Training
CDV	Career Development
COM	Commissioned Research
RES	Responsive Mode Research
DIS	Dissemination and Uptake
CFU	Core Funded Units
SPI	Special Initiatives
STL	Strategic Links
SUS	Support for UK Schemes

HSC R&D Division Year end position 2016-17

CAPITAL POSITION

DoH Allocation	12,230,291
Income (Capital Receipts)	979,572
TOTAL CAPITAL BUDGET	13,209,863
TOTAL HSC R&D CAPITAL SPEND	13,208,131
Difference	-1,732

Breakdown of HSC R&D Capital Spend

Total CRL	6,608,893
Stem Cell Therapy	1,065,000
Other Bodies (inc universities)	5,534,240
TOTAL Spend on Outturn	**13,208,133**

REVENUE POSITION

DoH Allocation NIHR NETSCC	3,158,500
TOTAL HSC R&D REVENUE SPEND	3,158,500
Difference	-

OVERALL POSITION

Revenue & Capital allocation	16,368,363
Total HSC R&D Spend	16,366,633
Difference	1,730

£2 Difference from underspend due to rounding

HSC Research Development Division Final Accounts 2016-17

	CRL	General Ledger Month 1-11	General Ledger Month 12	Creditors	Accruals	Debtors	Outturn 2016-17
	£	£	£	£	£	£	£
Income							979,572
Recurrent Allocation							15,388,791
Total Income							**16,368,363**
Recognised Research Groups	-	-1,827	-3,108	0	0	-6,540	-11,475
Education & Training	131,579	571,316	283,848	-	-	-	986,743
Career Development	-	316,226	234,453				550,679
Commissioned Research	142,825	837,202	200,650	-	-	-29,868	1,150,809
Responsive Mode Research	-	268,859	82,581				351,440
Dissemination & Uptake	166,474	252,673	26,347	6,003	57,091	-	508,587
Core Funded units							
Special Initiatives	1,942,104	1,013,383	482,178	-	-	-	3,437,666
Strategic Links	4,225,911	2,446,556	2,549,045	113,527	-	-11,684	9,335,038
Support for UK Schemes	-	57,143					57,143
Total Operations	**6,608,893**	**5,761,531**	**3,855,993**	**119,530**	**57,091**	**-48,092**	**16,366,631**
							Rounding
Underspend							1,732.30

F:\@adm\Finance\ss 2016-17\End of Year Accounts\[Outturn 2016-17.xls]general ledger

Income	
Dementia Income (AP)	343,367
NICTN Nurses (CRUK)	113,131
DH England	48,074
HSC Ireland Income (MRC)	450,000
EITP (AP)	25,000
Total Income	**979,572**
Additional allocation	
NETSCC Contribution (DHSSPS)	3,158,500
Total additional allocation	**3,158,500**
Allocation	**12,230,291**
Total allocation	15,388,791
GL Adjustments IRO 2016-17	-
Allocation plus income	**16,368,363**

File Reference	Research Title	Project Start Date	Project End Date	Total Value of Project (£)	Host Institution
COM/5163/15	Opportunity-Led Research Proposal: Nurse Fellow of the European Society of Cardiology (Heart Failure Association)	01/04/2016	31/08/2016	17,438	BHSCT
COM/5237/15	Pulmonary epithelial barrier and immunological junctions at birth and in early life – key determinants of development of asthma?	01/04/2016	31/03/2021	221,180	QUB
COM/5242/16	Opportunity-Led Research Proposal: TRAC-24	22/06/2016	30/06/2019	139,339	BHSCT
COM/5284/16	EITP Workstream 2: An Evaluation of the Early Intervention Support Service in Northern Ireland.	01/08/2016	31/10/2017	99,866	QUB
COM/5285/16	EITP Workstream 3: Using the voluntary sector to support children and families with complex needs - what are the potential benefits and risks?	01/08/2016	31/01/2018	59,647	QUB
COM/5291/16	Opportunity-Led Research Proposal: TrueNTH Sexual Health	01/10/2016	30/09/2019	30,000	UU
DIS/5294/16	Interventions to support female BRCA carriers who undergo risk-reducing surgery	01/11/2016	31/10/2018	44,673	BHSCT
DIS/5295/16	Educational Interventions to improve attainment for Children in Care	01/11/2016	31/10/2018	39,455	QUB
DIS/5296/16	Post-operative exercise interventions on the physical and mental health of people with colorectal cancer receiving adjuvant therapy	01/10/2016	31/10/2018	25,354	CANCER FOCUS
DIS/5297/16	Psychological interventions for depression in adults bereaved through life-limiting conditions	01/01/2017	31/12/2018	51,702	QUB
EAT/5105/14	2015 Doctoral Fellowship: Evaluation of mechanisms in and methods of inhibiting ventilator induced lung injury	01/09/2016	31/08/2019	162,716	QUB
EAT/5216/15	2016 Doctoral Fellowship: Development and testing of a supportive intervention to meet the needs of older male carers looking after a spouse/partner with a long term condition: a feasibility study	01/10/2016	30/09/2019	173,369	UU
EAT/5219/15	Gender Dysphoria: prevalence, experiences and pathways for people with autism or autistic traits	01/12/2016	01/12/2019	210,058	UU
EAT/5254/16	2016 GPARTS Dr Carl Brennan	01/08/2016	03/08/2016	85,886	QUB
EAT/5255/16	2016 GPARTS Dr Rachel Martin - A Study to assess preparedness of GP Trainees to deliver health promotion advice for physical activity	03/08/2016	01/08/2018	79,195	QUB
RES/5195/15	Using information to prepare cancer caregivers to cope: translating evidence to practice	01/08/2016	31/01/2018	97,899	QUB
RES/5198/15	iMPAKT: Implementing and Measuring Person-centredness using an App for Knowledge Transfer	01/09/2016	28/02/2018	71,973	UU
RES/5199/15	Making Insulin Treatment Safer in Northern Irish Hospitals	01/12/2016	30/11/2017	106,939	QUB
SPI/5299/15	Stem Cell Therapy Facility	16/05/2016	31/03/2017	1,065,000	QUB
STL/4748/13	US-Ireland R&D Partnership - COMP-Ang1: Cascular Normalization and Neuroprotection fir Diabetic Retinopathy	20/06/2016	19/06/2020	653,540	QUB
STL/5049/14	Enabling Research Award: Fathers in Families: An Evaluability Assessment	04/04/2016	30/11/2016	26,329	QUB
STL/5062/14	US-Ireland R&D Partnership: Translational Analyses of Ingestive Behavior After Gastric Bypass	01/07/2016	01/07/2020	561,728	UU
STL/5087/14	Enabling Research Award: Remote Arthritis Disease Activity monitoR (RADAR 1) - a feasibility study of home - based dried blood spot use to monitor an inflammatory marker in Rheumatoid Arthritis patients.	01/05/2016	30/11/2017	40,000	UU
STL/5091/14	Enabling Research Award: Evaluation of the Effectiveness of Music Therapy in Improving the Quality of Life of Palliative Care Patients: a randomised controlled pilot study	01/04/2016	30/09/2017	37,596	QUB
STL/5179/15	Enabling Research Award: Establishing a clinical phenotype for cachexia in chronic kidney disease.	01/09/2016	31/08/2018	39,970	QUB
STL/5187/15	Enabling Research Award: The impact of a tailored dietary intervention coupled with oral rehabilitation on the nutritional status of older patients	01/06/2016	30/06/2017	38,530	QUB
STL/5188/15	Enabling Research Award: The Jack Trial: An intervention refinement to the parental component	04/07/2016	04/11/2016	31,015	QUB
STL/5252/16	Enabling Research Award: Rapid tests for fungal infection 2	01/04/2016	31/07/2016	9,374	QUB
STL/5258/16	Enabling Research Award: Developing E-health Services (DES): The feasibility and acceptability of group based video-conferencing for adults with depression	01/10/2016	31/03/2018	38,435	QUB

HSC Public Health Agency

board paper

PPI Update

date	21 December 2017	**item**	10	**reference**	PHA/04/12/17

presented by Mrs Mary Hinds, Director of Nursing, Midwifery and AHPs

action required For noting

Summary

The PPI up-date report has been developed for the period July to December 2017. This bi-annual report provides an up-date on recent work to progress the actions outlined in the PPI Action Plan 2016-19 to the PHA Board.

It is proposed that a PPI up-date is presented to the Board focusing on the key areas of work during this period. This will primarily focus on the resources which the PPI team has developed which includes the development and launch of the Engage website, e-learning for service users and carers and the development of a series of PPI Guides.

Equality Impact Assessment

Not applicable.

Recommendation

The Board is asked to **NOTE** the PPI update.

HSC Public Health Agency

DRAFT

Personal and Public Involvement (PPI)

PHA Board Update December 2017

Personal and Public Involvement (PPI) Involving you, improving care

Personal and Public Involvement – What is it?

PPI is the active and effective involvement of services users, carers and the public in health and social care services. Involvement can range from one to one clinical or social care interactions with service users and carers, in regard to their own health, through to larger engagements to assess needs, partnership working to co-design services and influence commissioning priorities and policy development. Under the HSC (Reform) Act (NI) 2009, PPI is a legislative requirement.

The rationale for PPI – Why do it?

People have a right to be involved in and consulted with on decisions that affect their health and social care. Meaningful Involvement helps to:

- effectively identify need;
- increase efficiency through tailoring services and agreeing priorities;
- improve quality, safety and patient experience;
- reduce complaints and SAIs;
- encourage self-responsibility for health and social well-being.

The PHA's role

In the 2012 PPI Policy Circular, the DHSSPS confirmed and assigned to the PHA, primary responsibility for the leadership of the implementation of this key policy area across the HSC system. It requires the PHA to provide the Department of Health with assurances that HSC bodies and in particular Trusts, meet their PPI Statutory and policy responsibilities. Additional responsibilities confirmed/assigned also included:

- ensuring consistency and co-ordination in approach to PPI;
- the identification and sharing of best PPI practice across HSC;
- communication and awareness raising about PPI;
- capacity building and training;
- development of the Engage website;
- monitoring of and reporting on PPI.

Progressing PPI

The PPI Team continue to drive the integration of PPI into HSC culture and practice using the PPI standards as the basis for our work. We undertake this work through the:

- Regional HSC PPI Forum which PHA co-chair with a service user/carer;
- PHA internal PPI Leads Group.

In the last six month period, work has been focused on:

Leadership for Transformation

In line with Delivering Together, a number of transformation work streams have been established to progress key areas of work within HSC. We have been working closely with a number of the work streams to support effective and meaningful involvement. This includes:

- **Primary Care Multi-Disciplinary Team:** supporting the work stream to develop an Involvement Plan and to establish an advisory group.
- **Elective care**: providing professional involvement advice and guidance to the work stream in regards to their work on the configuration of elective care.
- Providing professional advice on effective involvement for the reconfiguration of **Breast screening services** across Northern Ireland.
- Advising and supporting the reform of **Stroke Services** through the development and implementation of service user and carer involvement and co-production.
- Being actively involved in the **Co-production Working Group** to develop a draft guide.

PPI Small Grant Funding

Non-recurrent funding has been made available during 2017/18 to roll out a PPI small grant programme. This has been made available to HSC Trusts and other HSC organisations. A number of PHA PPI projects have been awarded funding to progress involvement in their areas of work.

PPI on-line resources

The Engage website has been completed and was launched at an event on Monday 13th November by Dr Michael McBride, Chief Medical Officer. Engage has been developed as a central resource for Involvement in Health and Social Care and was co-produced and co-designed with staff, service users and carers. The website supports HSC staff, service users and carers to build their knowledge and skills on involvement. It is a repository of information, good practice, tools, guides and evidence of the benefits of involvement. A new e-learning programme for service users and carers has also been developed through a partnership based approach and is also available on Engage.

Engage Steering Group members with Dr Michael McBride.

Performance and Monitoring with HSC Trusts

The PHA has completed the 2016/17 monitoring for HSC Trusts. This was co-designed and undertaken in partnership with service user and carer representatives from the Regional PPI Forum. The reports have been submitted to the Department of Health and PPI will be included in the HSC Trust Accountability meetings.

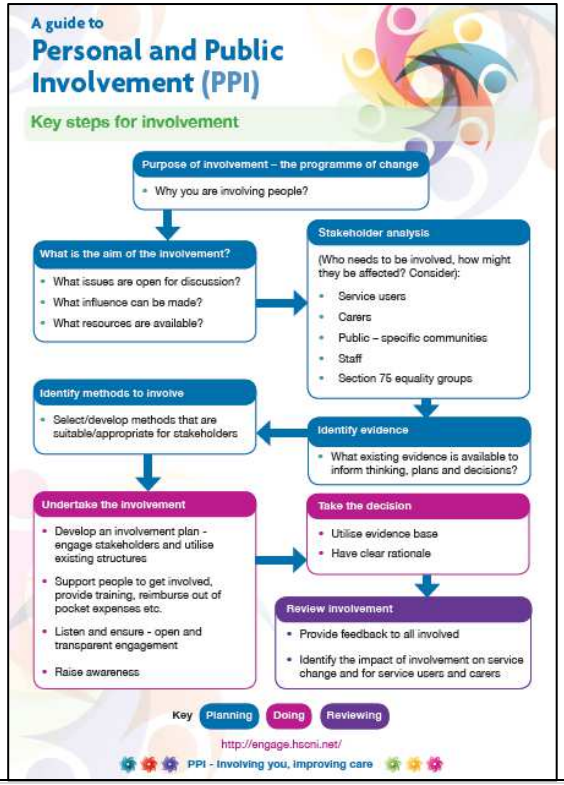
UK wide Standards for Involvement in Research

We have entered into a UK wide partnership/project to develop a set of standards for involvement in research. Work has been ongoing for the last year with National Institute of Health Research (NIHR) and PPI leads from England, Scotland, Wales and the PHA on this initiative. The Northern Ireland PPI standards have been used as the Pathfinder and we have worked in collaboration with professional involvement colleagues, service users, carers, researchers and other stakeholders to develop the Involvement Standards for research. NIHR has hailed this as a major achievement and it was showcased at the International INVOLVE Conference in London at the end of November. It has attracted interest internationally as far away as Australia.

The following table outlines in more detail what we have achieved in during July – December 2017. The areas of work are aligned against the PPI Standards.

Standard	What have we achieved?
1. Leadership	**<u>Advice and guidance</u>** A key role of the PHA PPI Team is to provide professional leadership advice, guidance and support within the PHA and across the HSC system on PPI. During this period, we have been actively engaged in the following programmes of work: • Embedding effective and meaningful involvement into the Transformation Work streams and other key HSC work areas in relation to: - Primary Care Multi-Disciplinary Team - Reform of Stroke services - Reconfiguration of Breast screening services - Elective Care - EHCR and E-Health - Quality Improvement - PPI Community of Practice - Co-production Guide Development • Advising and supporting the development and implementation of an involvement plan for WHSCT Learning Disability services. • Supporting the effective establishment of Unscheduled Care Service User and Carer Reference Group. **<u>Regional HSC PPI Forum</u>** The PHA in its strategic leadership role, continues to co-chair and facilitate the work of the Regional HSC PPI Forum: • In September, the PHA hosted the annual strategic meeting of the Forum which brought together the Directors/Assistant Directors responsible for PPI. The meeting provided the opportunity to discuss a range of current issues for PPI. • In November, the PHA hosted a workshop to establish 2017-19 Forum PPI Action Plan. 

Standard	What have we achieved?
	PPI Leadership Programme Funding has been secured to establish a PPI Leadership Programme in 2018. The programme will be the first leadership programme that will be built on the collective leadership philosophy and aims to be co-produced and co-delivered with relevant partners including service users and carers.
2. Governance	**Strategies and plans** • The PHA Corporate Plan has committed to PPI as a key approach to how the PHA does its business and this is reflected in our Annual Business Plan. • The PHA PPI Action Plan 2017-19 has been finalised and provides the roadmap for PPI work. This includes both external and internal areas of responsibility. • The Consultation Scheme template has been submitted to DoH for roll out across HSC organisations.

Standard	What have we achieved?
3. Opportunities and support for involvement	**<u>Opportunities for involvement</u>** • The PPI Team are seeking to support a Disability placement position within the Team. It is proposed that the individual will work specifically to increase involvement opportunities in PHA. This will include the establishment of setting up of a PHA PPI service user and carer forum/panel. Work will also be progressed on establishing an e-forum which will be aligned to the Regional PPI Forum. • A corporate induction template for service users and carers has been drafted which is based on existing and best practice. **<u>Small grant programme</u>** • PHA secured non-recurrent funding for 2017/18. This was made available to HSC Trusts and other HSC organisations. A number of internal PHA projects have been awarded funding to progress PPI in their programmes of work. **<u>PPI Guides</u>** • A series of PPI Guides have been developed with staff, service users and carers. This is the first set in a series of Guides which are planned to provide the necessary practical support and guidance for PPI, which is frequently requested. The guides will be designed to provide practical information on planning, doing and reviewing aspects of involvement work. The first guides focus on how to get started, how to develop an involvement plan and developing a role description. 

Standard	What have we achieved?
4. Knowledge and Skills	**Awareness raising training** • A PPI training action plan has been developed to meet the needs of PHA staff. A series of PPI practical training sessions have been scheduled to support staff to implement Involvement and the first session is scheduled for January 2018. • The e-learning programme for service users and carers has been completed and is now available via the Engage website. Service users and carers were actively involved as partners in identifying what was needed in developing the program.   **Sharing knowledge** • Members of the PPI team have successfully applied and are now members of the Q community. This Health Foundation programme is a network of support for improvement initiatives. • Members of the PPI Team attended the INVOLVE conference 2017 – *Celebrate the progress of public involvement in research and consider the opportunities ahead*. This enabled participation in an international workshop to consider the impact of involvement and how this may be measured. This work will be used to support the evaluation and refinement of the PPI monitoring programme.

Standard	What have we achieved?
	Engage web resource – http://engage.hscni.net The Engage website was developed in partnership with staff, service users and carers and is designed to provide a wide range of information, guides and links to supports PPI. As part of the development, a series of User Acceptance Tests were undertaken in relation to the structure and content of the website. The website supports HSC staff to build their knowledge and skills on involvement. It also provides information, good practice, tools, guides and access to evidence to support both staff and service users and carers on their involvement journey. The Engage website was launched at an event on 13th November which was attended by circa 80 people including Department of Health, HSC staff, service users and carers. Brian O'Hagan, a service user and carer representative on the Regional Forum led on the development of the resource with the PHA and spoke at the event to share his vision for the resource. Dr Michael McBride, Chief Medical Officer officially launched the website and outlined "that Engage will develop into one of the most important resources that Health and Social Care uses". Non-recurrent funding has been secured to develop the case study and current opportunities section to showcase PPI in practice. Whilst Engage has been established, the challenge remains to identify recurrent funding to continue further develop this resource to its full potential.

Standard	What have we achieved?
5. Measuring Outcomes	**<u>Monitoring arrangements</u>** **External** • The PHA is required to provide the Department of Health with assurances that HSC bodies and in particular Trusts, meet their PPI Statutory and policy responsibilities. • In line with previous years, the PHA has undertaken the monitoring in partnership with service users and carers from the Regional PPI Forum for the 2016/17 period. This involves the analysis of the Trust self- assessment report and an improvement visit with the PPI Lead, Director and the Non-Executive Director responsible for PPI. Recommendations are then developed to identify areas where action is required. The monitoring has now been undertaken for three years and it is evident that PPI systems and processes are being embedded into culture and practice within Trusts. However, there still remain areas for improvement to ensure that no major service change takes place without meaningful involvement. • The PHA has completed this work and officially submitted to the Department of Health in September. This work will be utilised as part of the Department accountability process with the HSC Trusts. • The PHA in partnership with the Regional PPI Forum will now evaluate and review the monitoring process which has been undertaken annually for a three year period. The monitoring will be up-dated in line with a planned Outcomes Accountability Based Framework for the 2017/18 period. **Internal** • The PHA is required to monitor the progress of PPI implementation on an annual basis. For the past two years PPI compliance has been measured through all directorates and divisions, through PPI divisional leads who have provided evidence of how PPI is being undertaken. Feedback on the process and further engagement with senior staff and

Standard	What have we achieved?
	Divisional PPI Leads and service users and carers has resulted in an updating and redesign of the internal monitoring mechanism. The organisation will still review what is happening internally in regards to the corporate level and this will be complemented by a focused assessment of involvement of compliance in regards to the organisations business objectives. • An independent PPI monitoring team has been established to undertake the external elements of the review. The team will consist of HSC PPI leads, service users and carers drawn from the Regional HSC PPI Forum. They will, review the PHA self-assessment report, identify questions which they will use as the basis of an improvement visit, compile and present a PPI monitoring report to the PHA. • Each service area has just completed and submitted their monitoring return. An initial analysis of the monitoring returns provides evidence that significant amount of involvement activity is taking place against key strategic objectives. • The monitoring report will be completed and presented to the Board in March/April 2018.