1. PROJECT INFORMATION

Project Title	Improving uptake of flu vaccinations among high risk groups

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2. PURPOSE OF THIS PROJECT

The purpose of this project is to respond to the low influenza (flu) vaccination rates in Tilbury locality due to various reasons including limited resources available in primary care. There are many evidence based examples of how to increase flu vaccination rates in the UK as well as many services that are currently being used to increase vaccination rates including CQUINs in secondary care and Advanced Flu Vaccination service in community pharmacies.

This project aims to increase the proportion of people vaccinated for flu who are at high risk of ill health or death if not vaccinated. Increasing the rate of vaccination for those in risk groups will reduce the burden of care in secondary care and reduce excess winter deaths from flu during the winter months.

3. NEEDS ASSESSMENT

Extract from Chief Medical Officer's Annual Flu Vaccination Letter 2017/18 (1):

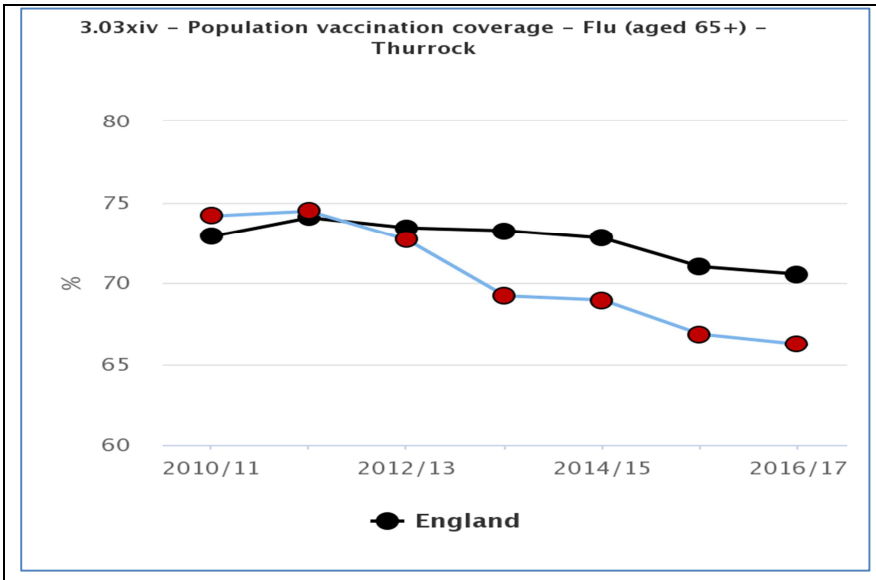
"Morbidity and mortality attributed to flu is a major cause of harm to individuals, especially vulnerable people, and a key factor in NHS winter pressures. The annual flu immunisation programme helps to reduce GP consultations, unplanned hospital admissions and pressure on A&E and is therefore a critical element of the system-wide approach for delivering robust and resilient health and care services during winter".

Flu vaccination rates in Thurrock:

Routine data published by Public Health England (PHE) show the flu vaccination uptake rates across Thurrock (the population of Tilbury is known to be roughly 22% of the total population of Thurrock) (2).

The coverage for older adults in Thurrock is significantly below the national average, with only 66.2% of them receiving the vaccination last year, compared to 70.5% nationally. The figure below shows that Thurrock as a whole has a significantly lower level of vaccination coverage than England, and that this has been the case since 2012/13.

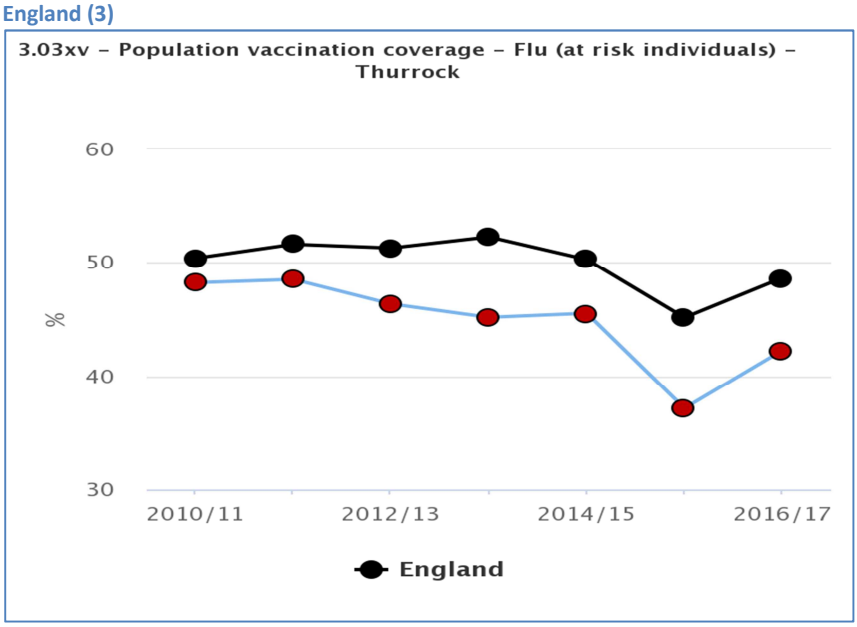
Figure 1: Flu vaccination coverage (65+) - Thurrock and England (3)



Source: PHE Fingertips

In 2016/17, only 42.2% of those at risk individuals aged 6 months to under 65 were vaccinated for flu, compared to the national average of 48.6%. The target coverage for 2017/18 is at least 55% and preferably 75%, showing that there is much work to do to improve coverage rates for this group in Thurrock as a whole.

Figure 2: Flu vaccination coverage (at risk individuals excluding healthy pregnant women and carers) - Thurrock and England (3)



Source: PHE Fingertips

Flu vaccination rates in Tilbury for at risk groups:

Flu vaccination rates for Tilbury GP practices do not meet the national targets in general. Evidence suggests that areas of high deprivation are more likely to have lower immunisation rates than areas of low deprivation. The table below describes vaccinations rates by clinical risk groups in Tilbury. It can be seen there is large variation at practice level. Of the 8 groups listed, the only one which reaches the national target is for children aged 2-7 (42.5% in Tilbury vs 40% nationally).

This might have been boosted by vaccinations in schools. [The full practice-level analysis of vaccination rates for all risk categories is in appendix 1]

Table 1: Tilbury GP practice vaccination rates by risk category, 2016/17

	Proportion of risk category vaccinated							
Practice Name	**6m-2yr olds (at risk)**	**Carers**	**Pregnant women (all)**	**Children (aged 2-7)**	**<65 At-Risk (Chronic Liver Disease)**	**<65 At-Risk (Asplenia or dysfunction of the spleen)**	**<65 At-Risk (Chronic Kidney Disease)**	**<65 At-Risk (Immunosuppression)**
Rigg Milner	0.0	28.6	19.4	59.2	30.8	69.2	45.1	41.7
Chadwell MC	0.0	23.1	24.4	41.6	14.3	17.9	44.4	25.9
Suntharalingham	0.0	0.0	21.4	46.0	30.0	37.5	31.0	29.4
Shehadeh	33.0	38.9	20.6	47.3	22.0	43.8	35.5	31.3
Ramachandran	0.0	0.0	35.0	44.8	28.6	50.0	29.2	57.1
East Tilbury	0.0	67.5	44.2	57.4	37.5	30.8	50.7	65.2
Dilip Sabnis	0.0	30.0	26.7	40.8	30.8	10.0	35.1	31.3
Sai Medical	0.0	19.4	35.6	20.7	41.2	23.5	37.8	38.7
Tilbury Avg (%)	**33.0**	**26.0**	**28.0**	**42.5**	**29.0**	**35.0**	**39.0**	**40.0**
National Target (%)	**55.0**	**75.0**	**55.0**	**40.0**	**55.0**	**55.0**	**55.0**	**55.0**

Source: Immform

Flu vaccination in Tilbury via QOF:

There are 4 Quality and Outcomes Framework (QOF) indicators used to measure the uptake of flu vaccination uptake; for Chronic Heart Disease (CHD007), Trans Ischaemic Accidents (STIA009), Diabetes Mellitus (DM018) and Chronic Obstructive Pulmonary Disease (COPD007).

The table below highlights the opportunities attached to increasing flu vaccination uptake in these populations (4):

Table 2: Increasing numbers vaccinated for flu via a stretched QOF

QOF code	Lost Revenue (£)	Cost of Stretched QOF (£)	Total actual cost (£)	Additional no of patients treated
CHD007	515	221	736	40
STIA009	209	83	292	30
DM018	342	140	482	88
COPD007	121	194	315	6
Totals	1187	638	**£1825**	**164**

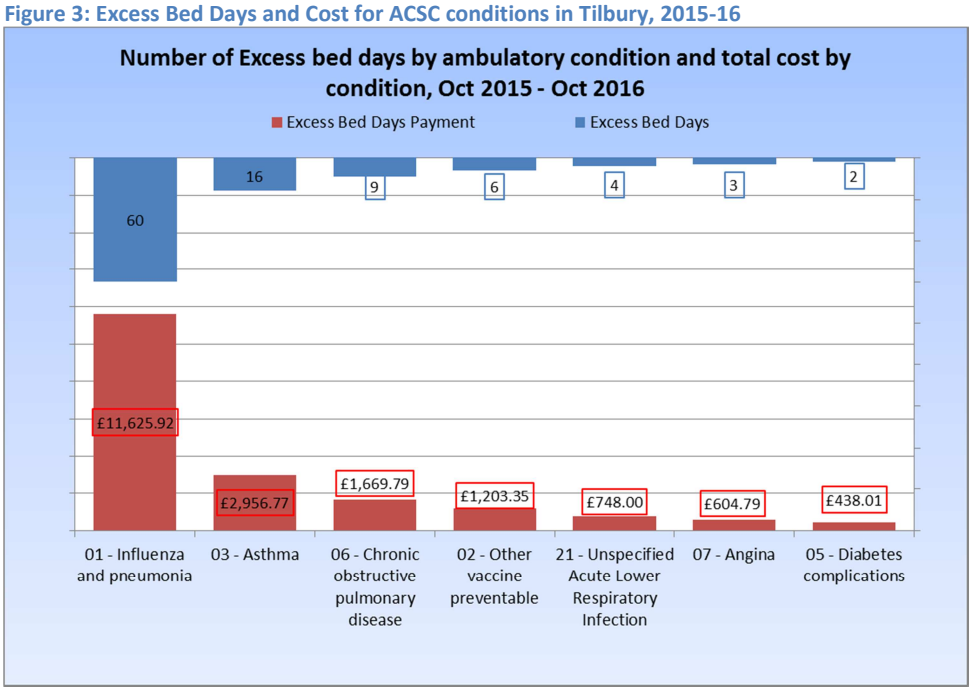
Source: QOF modeller, public health team

However it should be noted that the costs associated with implementing this are covered within the separate *Stretched QOF* business case and are therefore not repeated here – the table above is presented in this document to further emphasise the low flu vaccination coverage in Tilbury.

Influenza-related hospital admissions in Tilbury:

In the period October 2015-October 2016, there were 118 spells for influenza and pneumonia from Tilbury patients categorised as Ambulatory Care Sensitive Conditions (ACSC) – which generally speaking, are conditions for which effective management could have prevented acute exacerbations/hospital admissions. Influenza and pneumonia was the most common ACSC condition (of those where a reason was listed). The chart below depicts the excess bed days and the cost of these to the healthcare system for the most common ACSCs in Tilbury. It can be seen that as well as influenza and pneumonia, there are also other conditions such as asthma, COPD and unspecified acute lower respiratory infection for which a flu vaccination could prevent.

Figure 3: Excess Bed Days and Cost for ACSC conditions in Tilbury, 2015-16



Source: Hospital Episode Statistics

4. EVIDENCE BASE

There is a large body of evidence that shows that protection from flu can prevent morbidity and mortality (1). Despite the evidence available, uptake of flu vaccine in high risk groups has been disappointingly low.

Evidence regarding groups that should receive flu vaccination:

Flu is an unpredictable virus that can cause mild or unpleasant illness in most people. However, it can cause severe illness and even death amongst vulnerable groups including older people, pregnant women and those with an underlying health condition (such as the 4 conditions highlighted in QOF). These people are advised to have a flu jab each year.

Groups that are usually advised to have yearly flu vaccination, who are not included in the QOF categories include (1):

- Pregnant women
- Children aged 2-7 years
- People with other long term conditions that are not included in the QOF list (see CMO's letter for seasonal influenza vaccination for more details).

- All chronic respiratory diseases (not just COPD), but asthma and bronchitis also
- Chronic kidney disease
- Chronic liver diseases
- Chronic neurological disease such as Parkinson's disease or motor neurone disease
- Problems with the spleen eg sickle cell disease or if the spleen was removed
- A weakened immune system eg as a result of HIV/AIDS or taking steroid tablets long term or having chemotherapy
- Frontline clinical staff
- Carers of those in high risk groups

This list of conditions is not exhaustive and clinicians should make a clinical decision based on the individual patient.

Evidence for increasing uptake of influenza vaccination:

Various factors help to increase the levels of uptake of flu vaccination including:

- Sending personalised letters to the population from their GP practice
- Having a "flu champion" at the GP practice who identifies appropriate people to target
- Ordering enough flu vaccines to be able to vaccinate all those identified as being appropriate for the flu vaccination.

Interestingly, a study that looked at factors that increase flu vaccination rates did not find that giving weekend or evening appointments as an effective way of increasing vaccination rates (5).

Measures that are currently in place nationally to increase flu vaccination uptake (1):

Secondary care – there is a CQUIN in place that incentivises acute Trusts to vaccinate frontline staff. The target for full remuneration is 75% of staff (BTUH failed to meet this target in 2016/17 and therefore did not receive the payment – the achievement was 56% of frontline staff).

Primary care – primary (and community) care frontline staff are also expected to be vaccinated to the target of 75%.

Pregnant women – It has been recommended that all pregnant women are vaccinated during flu season, as soon as they find out that they are pregnant. This is because flu is the most frequent single cause of death in pregnancy.

Children aged 2 and above – Due to their immature immune systems, small children are at risk of getting flu and spreading it amongst social circles. The risk of mortality is low in children, however, when flu is spread to older family members e.g. grandparents (aged 65+), this can then cause very ill health, hospitalisation and at worst, death, in those family members. For this reason, flu vaccination was started in children aged 2 and above and there is evidence to show the spread of flu has been reduced by this new vaccination programme in the last few years.

5. PROJECT OUTCOMES

- To increase the uptake of flu vaccination of the population in Tilbury in the high risk population groups
- To apply evidence-based interventions to this population to test their effectiveness locally
- To contribute towards a reduction in secondary care activity related to flu

6. DELIVERY PLAN AND KEY MILESTONES

Key Milestones (Key events indicating progress)	To be reached by (date)	Who is responsible for meeting the Milestone?
Ensure GP practices have ordered sufficient vaccinations for winter 2017/18	Spring/Summer 2017	FW/Flu Champion
Discuss using evidence based solutions to increase vaccination rates with GP practices	July 2017	FW
Ensure each GP practice has a named Flu Champion	Spring/ Summer 2017	FW/Healthcare PH team
Ensure GP practices send letters out to their eligible population	September 2017	Healthcare PH team/Flu Champion
Ensure secondary care colleagues have a plan in place to vaccinate 75% of frontline staff by linking in with the CQUIN lead of the acute Trust (BTUH)	September 2017	Healthcare PH team
Ensure nursing home managers have organised for their residents and staff to be vaccinated this winter	September 2017	Healthcare PH team
Ensure all children aged 2 have a letter of invitation sent out to their parents inviting them to have the nasal vaccination given in order to protect them (and their loved ones) from flu this winter	September 2017	Healthcare PH team / Flu Champion

7. FINANCIALS: Costs, Resources, Cashable Benefits, Cost Avoidance, Return on Investment

1) Costs of vaccinating those in risk groups that are not in QOF:

Assumptions made:

- Using the QOF modeller, on average, 41 people need to be vaccinated by risk group in order to achieve maximum QOF points (164 people/4 clinical categories)
- There are 8 risk categories that are doing worse than the QOF categories, therefore 8x41 = 328 more people require vaccination to reach acceptable vaccination levels in Tilbury
- The average cost for each person to be vaccinated = £11.12
- 328 people x £11 average cost to give the vaccination = £3608.

2) Costs of sending out invitation letters from GP practices to those in the 8 clinical risk groups:

Assuming the cost of second class post, stationary and staff time is £1 per letter sent:
8 risk groups x 41 people on average = 328 people to vaccinate. This means the cost for sending letters would be roughly £328.

Total costs for 1) to 3) = £3608+£328
Total costs = £3936

Unknown costs:

- Time for Flu Champion to spend increasing vaccination rates in each GP practice

Lost potential:

In 2016/17, only 700 flu vaccinations out of a total of 25,000 were given in community pharmacies in Tilbury (2.8%). Therefore, more can be done to encourage community pharmacies in Tilbury to vaccinate appropriate risk groups for flu every winter, especially as it is now a national advanced service, therefore pharmacies are paid for this service by NHS England. The vaccination rate in Tilbury community pharmacies is clearly very low.

Return on Investment:

It is expected that reducing flu outbreaks will result in:

- Reduced ill health in patients
- Reduced hospital admissions (and therefore bed days and lengths of stay in hospital) - there were 118 spells for influenza/pneumonia in 2015-16 from Tilbury residents costing £413,191. It is hypothesised that a large majority of these could have been prevented if the patient had had the flu vaccination. If we could prevent 80% of these by delivering the flu vaccination, that would result in a cost saving of £330,552.80.
- Reduction in sick leave taken by staff in all parts of the healthcare workforce (it is estimated that approximately 10% of sickness absences are related to flu.)

There will also be savings to Adult Social Care with reduced outbreak response costs (e.g. the additional staff, vaccine costs etc) which cannot be quantified.

8. a. NON FINANCIAL BENEFITS

Benefit Description	Measure to track realisation of benefit	Benefit realisation timescales:
Reduced ill health in Tilbury due to influenza	Less hospital admissions due to flu	If the population are vaccinated in time for next flu season, there should be less ill health from flu in winter 2017/18
Reduced ill health in care homes due to influenza outbreaks	Less ill health in nursing homes, fewer calls to the Essex health protection team to declare an outbreak	Winter 2017/18 onwards
Less bed blocking caused by Home closures during an outbreak of flu	Better flow between hospital admissions and discharges	Winter 2017/18 onwards
Reduced costs for treating entire homes and swabbing residents due to reduced outbreaks of flu over the winter months	Reductions in financial spend by CCGs for dealing with flu outbreaks in nursing and residential homes	Winter 2017/18 onwards
Less Excess Winter Deaths from flu outbreaks	Reduced death rates in the winter	Winter 2017/18 onwards
Increased public awareness of	Responses to letters	Winter 2017/18 onwards

the importance of flu vaccinations for at risk groups		

8b. POTENTIAL DIS-BENEFITS

Dis-benefit description	Measure to track realisation of dis-benefit	Dis-benefit realisation timescales and mitigation
Other individuals are unable to receive flu vaccinations due to increased volume of high risk patients receiving it.	Track complaints made to PPGs/Healthwatch/GPs	As currently measured
Clashes between healthcare professionals who do not want to be vaccinated against flu	Discussions with CQUIN leads in secondary care	By September 2017
Clashes between GPs and community pharmacists due to aiming to vaccinate the same patients	Discussions between LMC and LPC. Discussions at Cold Weather Plan group	By September 2017 and ongoing

9. KEY RISKS TO PROJECT DELIVERY

Risk Type, Risk Level and Risk Description	Risk Mitigation	Who will monitor this Risk?
Costs not agreed	Present case with details of costs to relevant senior colleagues	FW
Staff to a) identify and contact all at risk patients, and b) to vaccinate patients	Discuss with CCG colleagues	FW
Time to set the processes in place	Discuss with CCG colleagues	FW
Agreement not reached by key partners	Stakeholder meetings with various key partners	FW

10. KEY ASSUMPTIONS AND CONSTRAINTS

ASSUMPTIONS

Assumption	What happens if assumption is no longer correct	Who will monitor the assumption
It is affordable to vaccinate all eligible people in Thurrock this year	The expected savings are unlikely to be realised.	Public Health Team/ACP Steering Group
Stakeholders will approve this business case and approach to increasing flu vaccination uptake.	The expected savings are unlikely to be realised.	Public Health Team/ACP Steering Group

CONSTRAINTS

Constraint	What happens if the Constraint is no longer correct?	Who will monitor this Constraint?
Resources to find appropriate people to vaccinate	If there are not enough resources (staff, money, vaccines) vaccination might not happen effectively	Public Health team/CCG
Numbers of some eligible populations have not yet been calculated i.e. pregnant women and children aged 2+ in Tilbury during winter (between September and March)	Costs to vaccinate could be higher than expected. The vaccination target could be changed if it becomes a cost issue.	Public health team

11. DEPENDENCIES

Inbound: This project is dependent on the delivery of these projects/activities

Project/Activity	What is the dependency?	Who will monitor the dependency?

Outbound: Other projects or activities will not deliver if this project fails to deliver

Project/Activity	What is the dependency?	Who will monitor the dependency?

12. GOVERNANCE ARRANGEMENTS

Governance arrangements will need to be agreed across various organisations:

- Thurrock Council
- NHS Thurrock CCG
- NHS England

13. APPENDICIES

References

1) NHS Annual Flu Letter 2017/18: /https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/600880/annual_flu__letter_2017to2018.pdf (accessed 5/5/2017)

2) Tilbury Health Needs Assessment: https://www.thurrock.gov.uk/sites/default/files/assets/documents/jsna-ihlc-tilbury-201511-v01.pdf (accessed 5/5/2017)

3) Public Health England, Health Profiles: https://fingertips.phe.org.uk/profile/health-protection/data#page/3/gid/1000002/pat/6/par/E12000006/ati/102/are/E06000034/iid/30315/age/226/sex/4 (accessed 5/5/2017, updated 27/09/2017)

4) Stretched QOF modeller – Public Health Team, Thurrock Council 2017.

5) Strategies to increase influenza vaccination rates: outcomes of a nationwide cross-sectional survey of UK general practice. Laura J Dexter, M Dawn Teare, Matthew Dexter, A Niroshan Siriwardena, Robert C Read. 2015, BMJ Open, Vol 2, Issue 3.

Appendix 1: Table of vaccination rates in Tilbury GP practices by Risk Category

Practice Code	F81082	F81084	F81110	F81206	F81652	F81691	F81698	F81708		
Practice Name	THE RIGG-MILNER MED CTR	CHADWELL MEDICAL CENTRE	THE HEALTH CENTRE, (SUNTHARALINGAMR)	ST.CHAD'S MEDICAL CENTRE, (SHEHADEHE)	MEDIC HOUSE, (RAMACHANDRANMK)	EAST TILBURY HEALTH CTR (KHAN RS)	DILIP SABNIS MED CTR	SAI MEDICAL CENTRE	TILBURY AVG (%)	NATIONAL TARGETS (%)
At risk - (6mths to 2 years)	0	0	0	33.3	0	0	0	0	4	55
Carers	28.6	23.1	0	38.9	0	67.5	30	19.4	26	75
Pregnant Women - Not At-Risk	17.4	23.3	25	20.5	33.3	40.5	22.2	30.8	27	55
Pregnant Women - All	19.6	24.4	21.4	20.6	35	44.2	26.7	35.6	28	55
<65 At-Risk (Chronic Liver Disease)	30.8	14.3	30	22	28.6	37.5	30.8	41.2	29	55
<65 At-Risk (Asplenia or dysfunction of the spleen)	69.2	17.9	37.5	43.8	50	30.8	10	23.5	35	55
Children Aged 3 (Born: 01/09/2012 - 31/08/2013)	55.2	8.7	44.7	40.1	31.6	52.9	19.2	46.2	37	40
Children Aged 2 (Born: 01/09/2013 - 31/08/2014)	47.1	14.9	37.5	44.2	36.6	49.1	28.3	46.1	38	40
<65 At-Risk (Chronic Kidney Disease)	45.1	44.4	31	35.5	29.2	50.7	35.1	37.8	39	55
At risk - (5 years to under 16 years)	44.9	40	48.4	62.1	26.1	45.7	34.5	17.2	40	55
<65 At-Risk (Immunosuppression)	41.7	25.9	29.4	31.3	57.1	65.2	31.3	38.7	40	55
<65 At-Risk (Chronic Respiratory Disease)	41	35.7	42.4	49.9	36.8	50.9	38.4	33	41	55

At risk - (6 months to under 65 years)	44.4	33.9	40	45.2	39.2	52.3	38.6	35.2	41	55
At risk - (16 years to under 65 years)	44.7	33.4	38.9	43.8	40.7	52.6	39.5	37	41	55
<65 At-Risk (Chronic Heart Disease)	38.1	41.6	33.3	46.2	38.8	50.7	42.1	47.4	42	55
<65 At-Risk (Chronic Neurological Disease)	50.7	40.8	48.6	45.8	32.4	43.9	46.9	50	45	55
Pregnant Women - At-Risk	40	50	0	22.2	50	66.7	66.7	66.7	45	55
At risk - (2 years to under 5 years)	27.3	35.7	100	42.9	25	75	16.7	51.9	47	55
Children Aged 4 (Born: 01/09/2011 - 31/08/2012)	62	52.5	57.8	51.3	45.7	63.8	53.5	25.7	52	40
<65 At-Risk (Diabetes)	70	43	57.7	73	57.4	65.7	56.5	78.5	63	55
65 and over	70.9	63.9	63.4	65.9	58.7	70.7	61	83.9	67	75

Source: Immform, 2016/17 flu vaccination data