



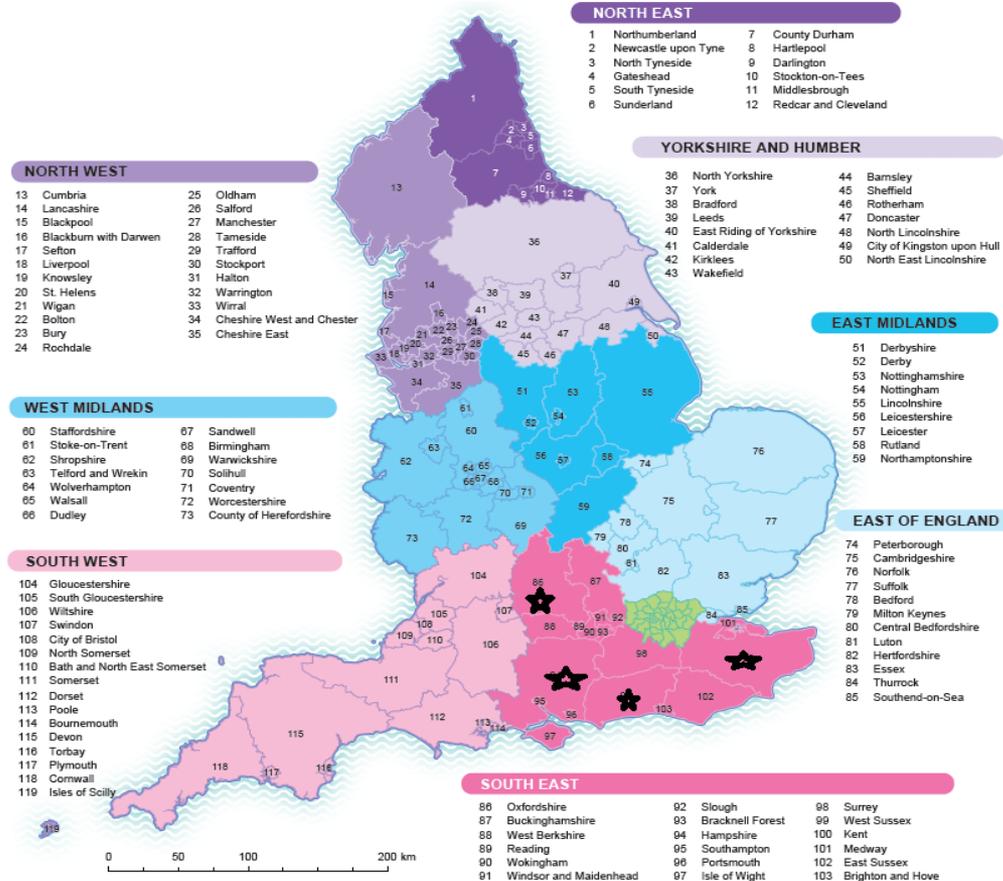
Public Health
England

Health protection update

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PHE South East – Hampshire and Isle of Wight HPT
Wessex Public Health Network CPD Event – 24th September 2018



Structure...six years on



*In principle, **Public Health England** runs **the outbreak response**. **The NHS** delivers **the clinical aspects** of that outbreak response, and **local government** has to absolutely assure itself, through **the director of public health**, that that is being **done properly**. - PHE, Health select committee evidence 2016*



Functions/ Priorities

Health protection: a set of functions to protect individuals and populations through an integrated approach to infectious diseases, radiation, and chemical and environmental hazards.



Priorities for 2018/19

In 2018/19, the Government expects PHE to focus in particular on implementation of the following **public health priorities**.

- 1. PHE will support the national response to the risk and harm from infectious diseases and environmental hazards, as well as addressing global threats to public health,*



TB - National Picture

TB in England



3 in 4
TB cases
born abroad



The number of cases of
TB in England has
decreased by 32% over
the past 5 years



Cases
among both
the UK and
foreign born
populations
decreased
2012-2016

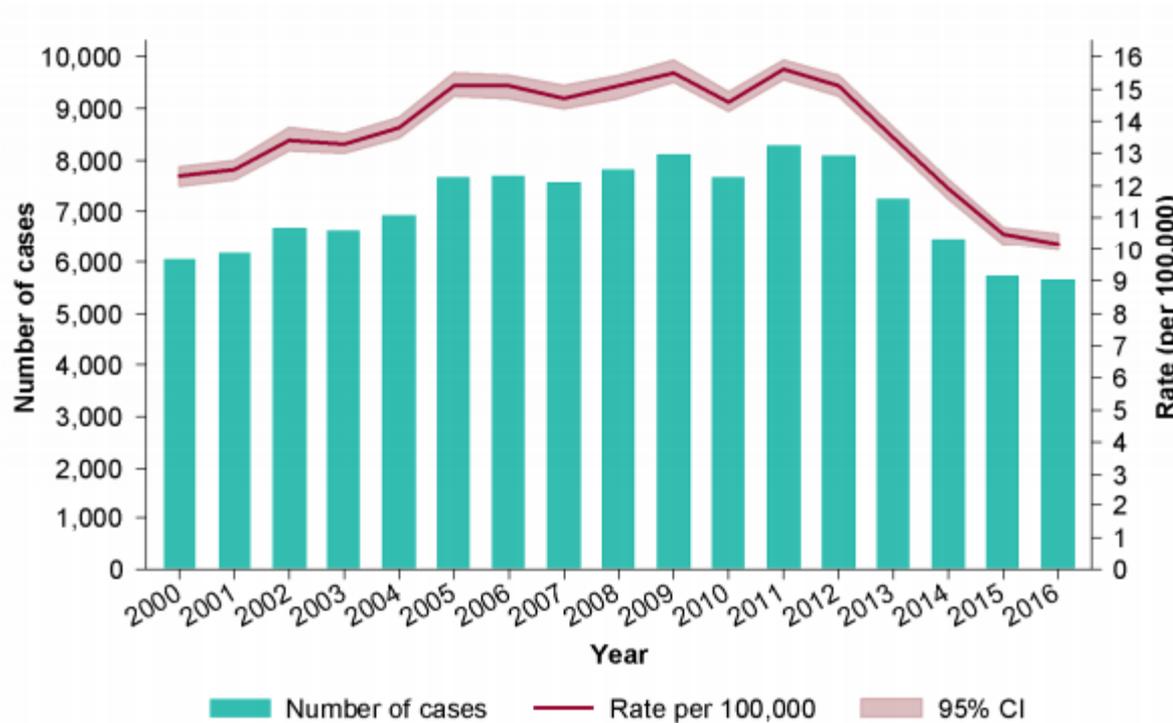
Provisional figures for 2017 ~ 5100 cases nationally.



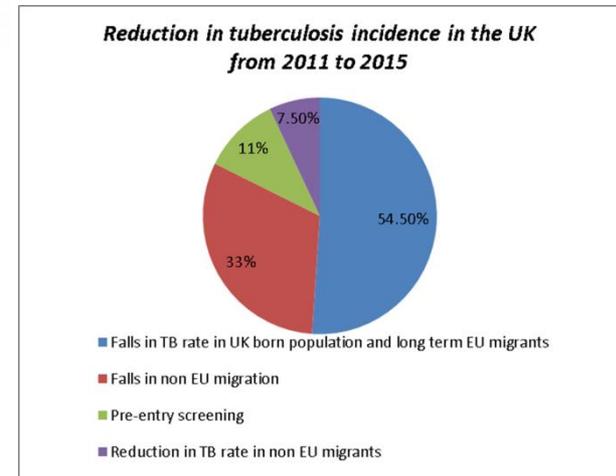
National Picture

Tuberculosis in England: 2017 report (presenting data to end of 2016)

Figure 1.1: TB case notifications and rates, England, 2000-2016



Offset by increase in rates of TB in EU migrants: 6.60%





TB in the South East

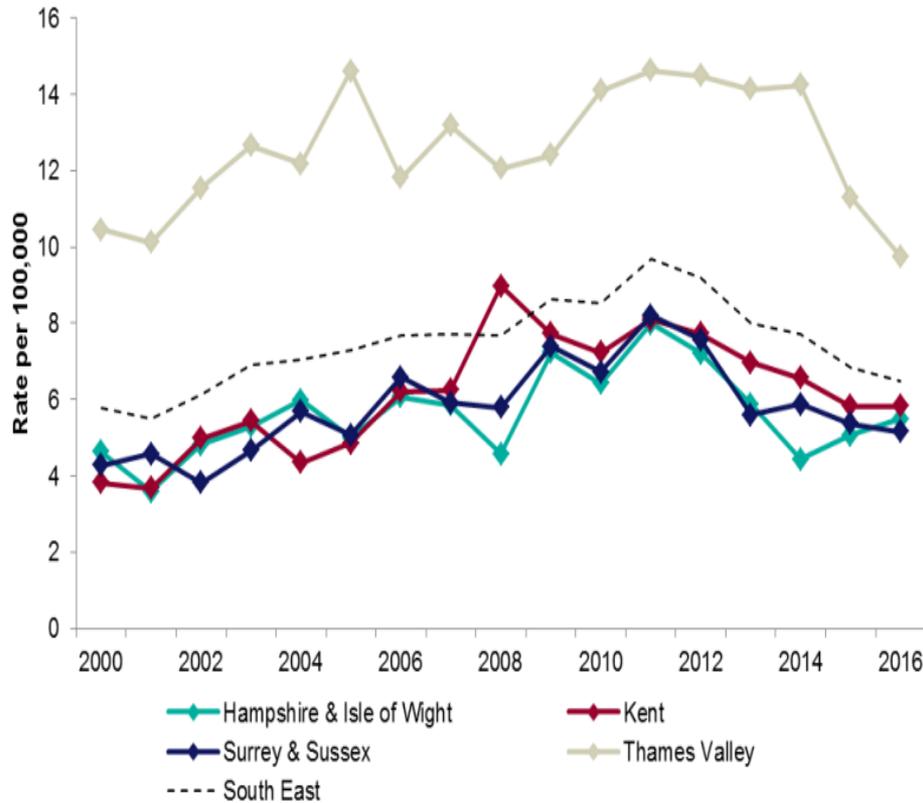
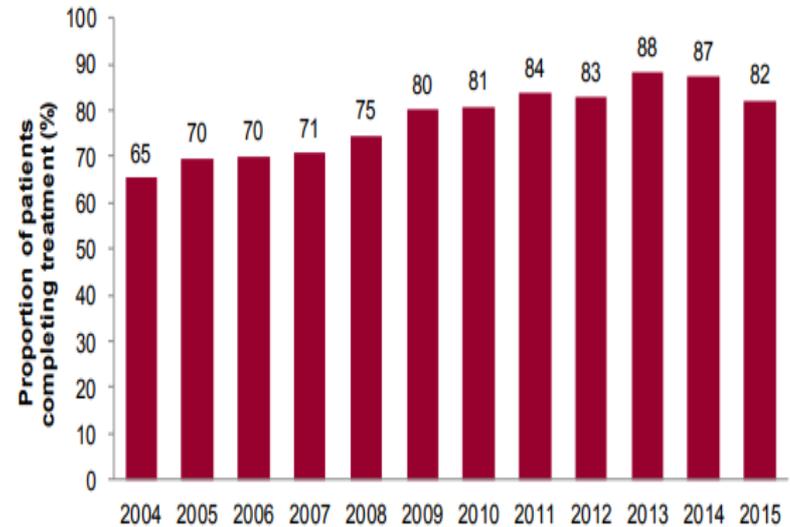


Figure 11: Proportion completing treatment at 12 months, South East, 2004 to 2015*



*Excludes rifampicin resistant TB, and patients with CNS, spinal, miliary or cryptic disseminated disease.

Table Bi: TB cases numbers by local authority of residence, South East, 2000 to 2016

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Hampshire	34	30	41	42	51	38	47	54	37	66	67	79	67	53	44	58	59
Isle of Wight	<5	7	<5	<5	<5	<5	<5	7	<5	<5	<5	6	7	<5	<5	<5	<5
Portsmouth	24	12	15	16	23	20	23	23	23	30	24	16	23	19	10	17	12
Southampton	18	15	27	36	33	30	33	24	24	36	27	51	41	39	29	23	34
Hampshire & Isle of Wight	76	64	86	95	108	91	103	108	85	135	121	152	138	113	86	99	108



10 Key Areas for action



Improve access
and diagnosis



Quality diagnostics



Quality treatment
and care



Contact tracing



Workforce strategy

Key actions to eliminate TB

Collaborative TB Strategy for England, 2015-2020



Vaccination



Surveillance and
monitoring



Latent TB screening



Tackle TB in under-
served populations



Reduce drug
resistance

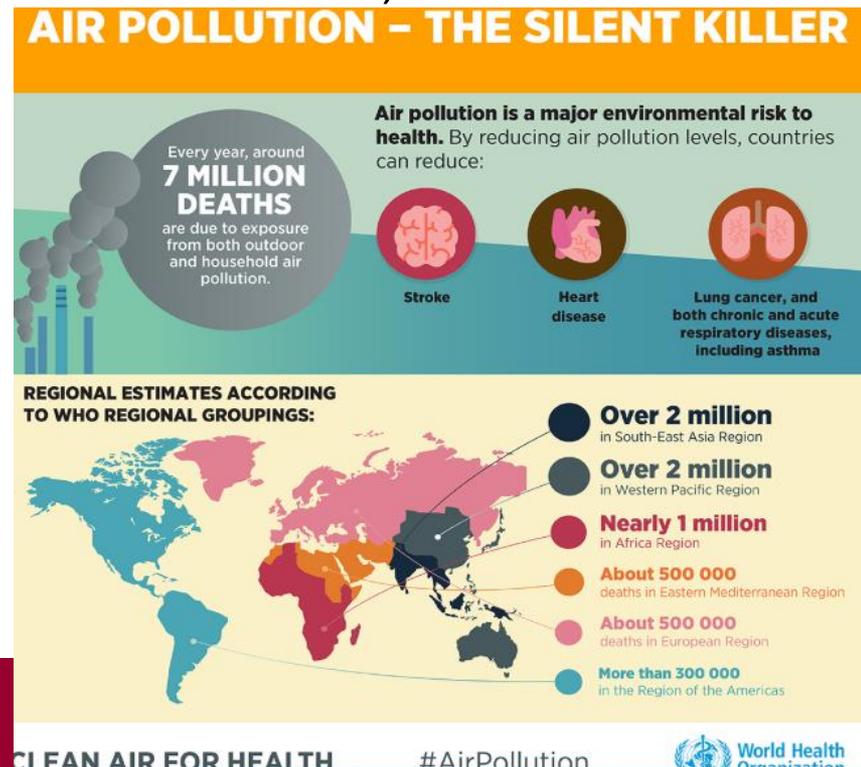


Air quality

- Air pollution contributes to an estimated 28,000 to 36,000 deaths in the UK every year.
- It is the largest environmental risk to the public's health,
- 5.3 percent of mortality can be attributed to long-term exposure to small particles polluting the air (human made PM2.5)

Annual Report of the
Chief Medical Officer 2017

Health Impacts of All Pollution –
what do we know?





Air quality

- Address pollution as disease prevention.
- Approach it as a health problem rather than an environmental one.
- In 2017, the total NHS and social care cost due to PM_{2.5} and NO₂ was estimated to be £42.9 million in England – the economic argument.





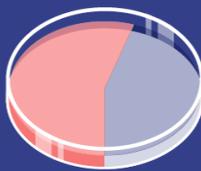
Public Health
England

AMR

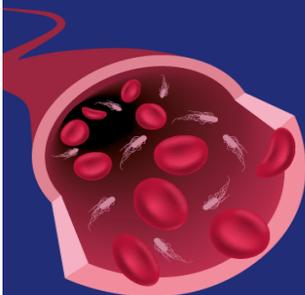
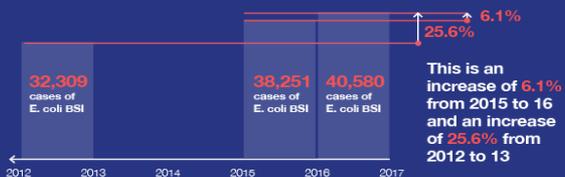
Healthmatters E. coli infections on the rise

Since the mid-2000s, E. coli has been the most common cause of blood stream infection (BSI)

E. coli now accounts for 55% of all Gram-negative BSIs



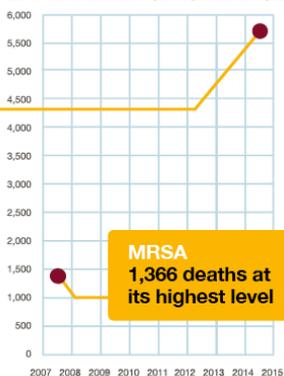
40,580 cases of E. coli BSI were reported between 1 April 2016 and 31 March 2017



Healthmatters The danger of E. coli infections

5,738 deaths occurred within 30 days of an E. coli BSI in NHS patients in 2016 to 17

E. coli v MRSA all cause deaths



In England, 30 day all-cause mortality is 14.7% in patients with E. coli



MRSA 1,366 deaths at its highest level



GLOBAL

A failure to address the problem of antibiotic resistance could result in:



10m deaths by 2050

Costing £66 trillion

EUROPE



25,000

people die each year

as a result of hospital infections caused by

5 key resistant bacteria





Prevent infections – vaccinations, safe medical interventions, hand washing
Reduce inappropriate use of antibiotics – humans and animals

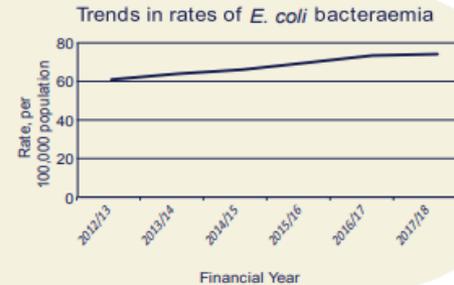


Protecting and improving
the nation's health

E. coli bacteraemia England 2017/18

Overall rate

74 people out of every
100,000
will acquire an
E. coli bacteraemia



Risk greater among elderly

Adult male rate

53
adult males
out of every
100,000
(age 45-64)

Adult female rate

54
adult females
out of every
100,000
(age 45-64)

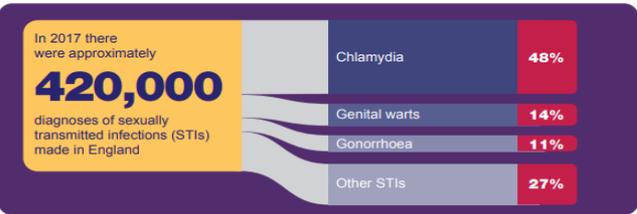
Elderly male rate

901
elderly males
out of every
100,000
(age ≥85)

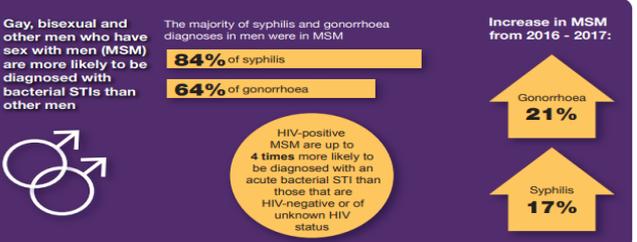
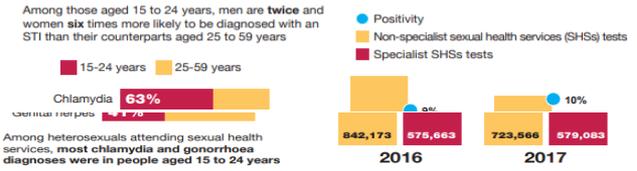
Elderly female rate

616
elderly females
out of every
100,000
(age ≥85)

Sexually transmitted infections in England, 2017



Young people are more likely to be diagnosed with an STI



Black Minority Ethnic (BME) populations are disproportionately affected by STIs

- 3x** The rates of gonorrhoea and chlamydia in BME people is 3x that of the general population
- 8x** For trichomoniasis, the rate in BME people is 8x that of the general population

Overall the largest increase in STI diagnoses between 2016 and 2017 was reported for:



There was a 7% decrease in diagnoses of genital warts between 2016 and 2017



Neisseria gonorrhoeae has developed resistance to all antibiotics used for treatment, and is a high priority organism on the World Health Organization's global priority list of antibiotic-resistant bacteria

The first three cases globally of infection with *Neisseria gonorrhoeae* with resistance to ceftriaxone and high-level resistance to azithromycin, which are used as front-line dual therapy, were reported in the United Kingdom (one case) and Australia (two cases) in early 2018



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STIs

Figure 1: New STI diagnoses by Public Health England centre (PHEC) of residence: England 2017. Data sources: GUMCAD, CTAD

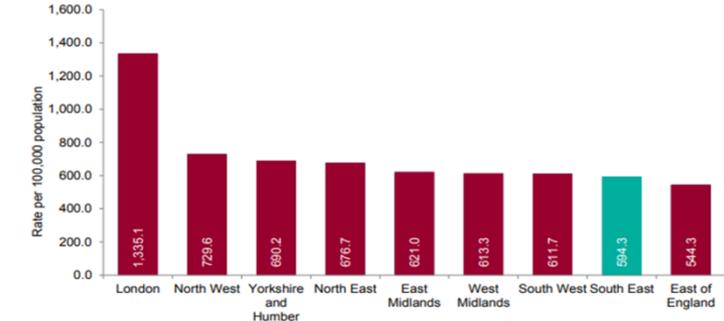
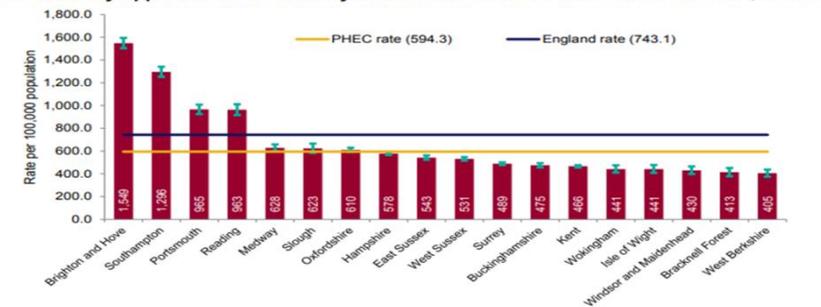


Table 1: Percentage change in new STI diagnoses: South East residents. Data sources: GUMCAD, CTAD

Diagnoses	2017	% change 2013-2017	% change 2016-2017
New STIs	52,082	-5%	1%
Syphilis	842	190%	22%
Gonorrhoea	4,001	58%	33%
Chlamydia	24,175	3%	1%
Genital Herpes	4,517	-3%	0%
Genital Warts	8,821	-21%	-3%

Figure 8a: Rate of new STI diagnoses per 100,000 population among South East residents by upper tier local authority of residence: 2017. Data sources: GUMCAD, CTAD



- High levels of condomless sex
- High rates of partner change
- Sero-sorting – high rates of STIs in HIV positive MSM
- Chemsex
- Use of geospatial apps to meet partners and locate sex parties

- Focus on the young, MSM, BME
- Condom use promotion
- Access to Rx and partner notification
- Regular testing



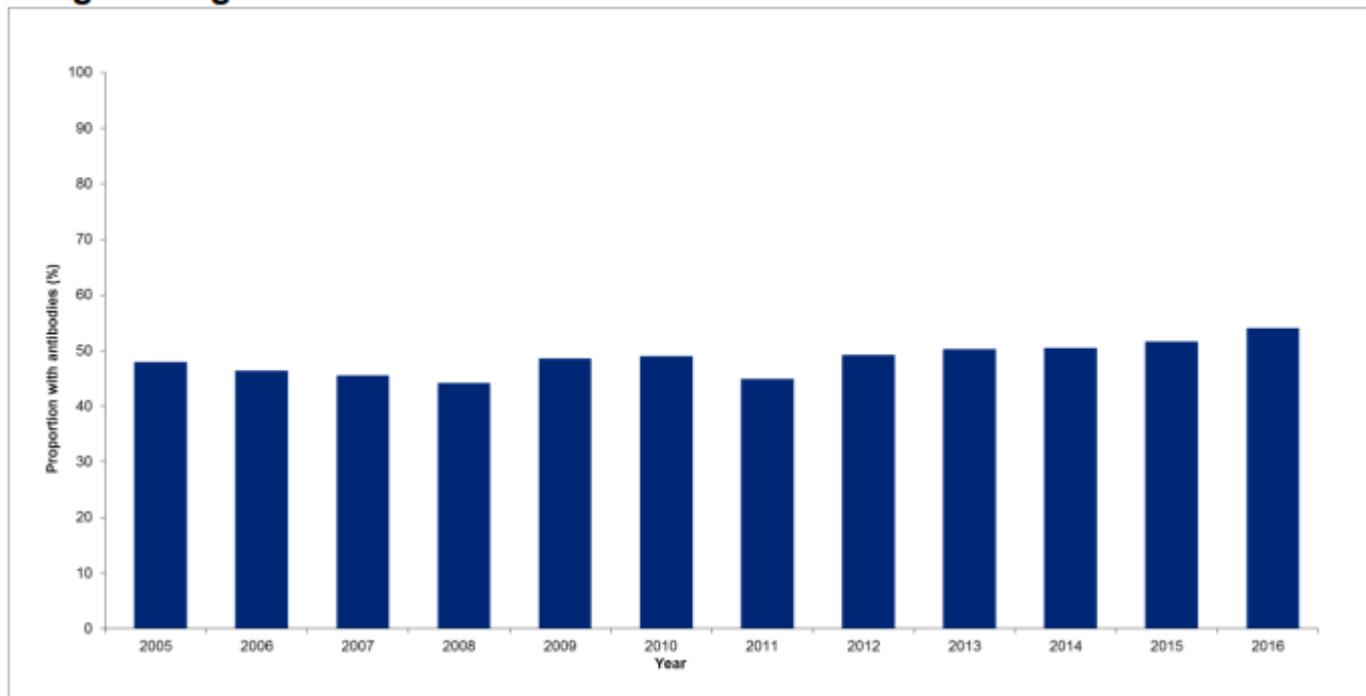
Hepatitis C

160,000 chronically infected in England

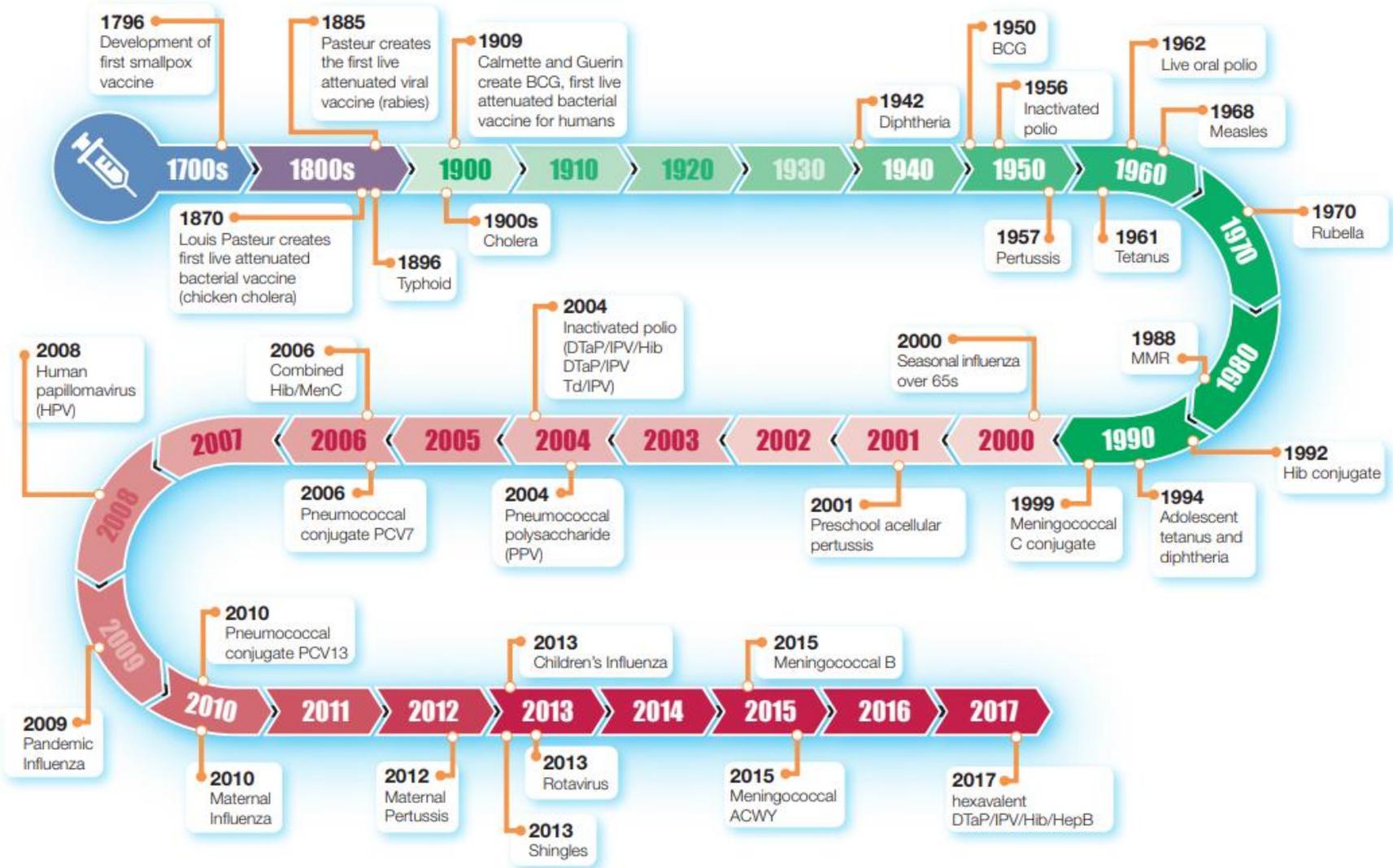
Global aim to reduce the public health threat

How? 1. Diagnose and treat 2. Prevent new infections

Figure 1. Trend in anti-HCV prevalence* among people injecting psychoactive drugs in England: 2005 to 2016



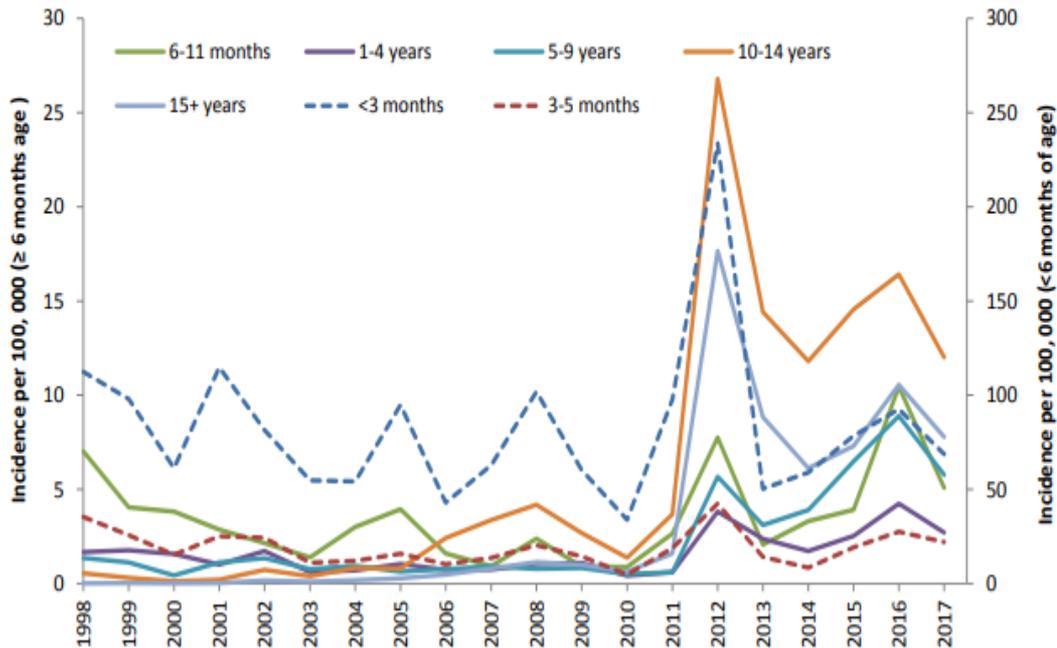
Historical vaccine development and introduction of routine vaccine programmes in the UK





Pertussis

Figure 2. Incidence of laboratory-confirmed pertussis cases by age group in England: 1998-2017



- 12 infant deaths in 2012
- Since the maternal vaccination programme in 2012, 18 deaths in infants

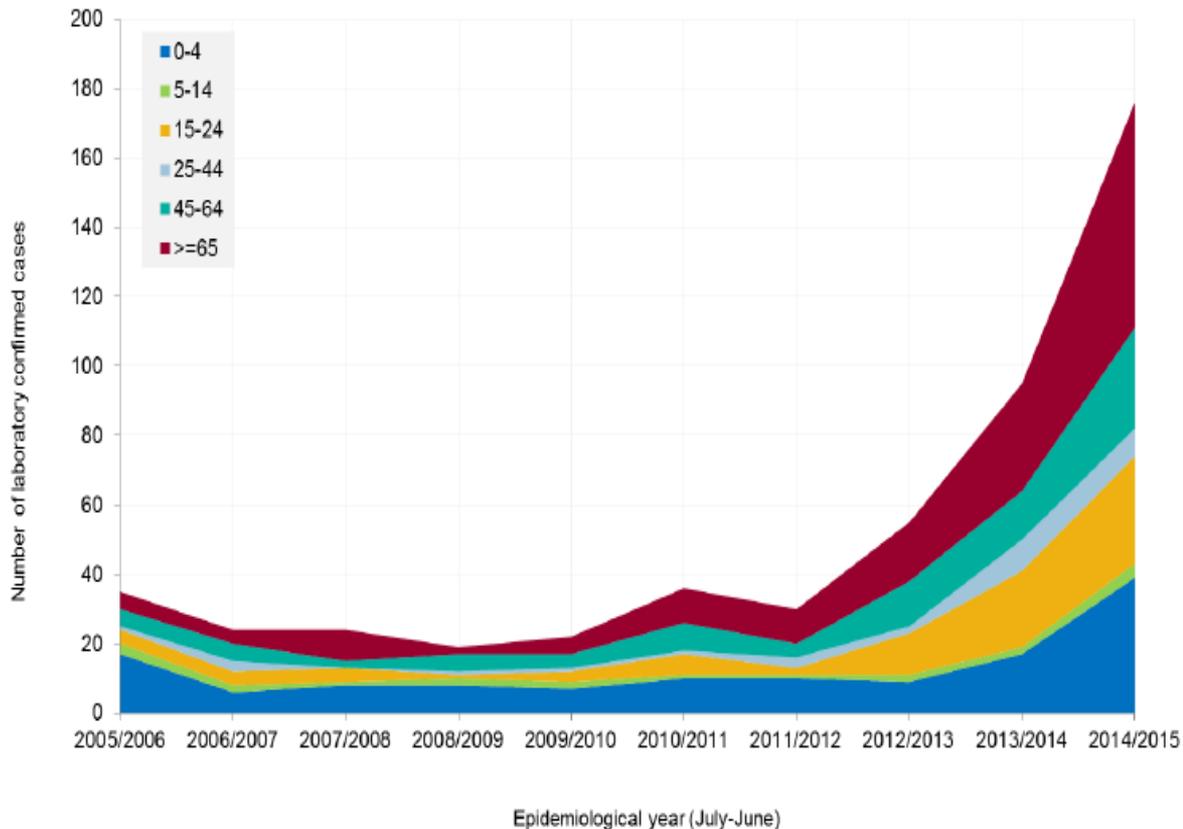
16 babies were born to mothers who had not been vaccinated against pertussis and both of the babies whose mothers had been vaccinated were delivered too close to vaccination to confer optimal passive protection in the infant

Vaccinate from 20wks



Meningococcal disease

Laboratory confirmed cases of meningococcal group W (MenW) disease in England, 2005/06-2014/15



In school years 9 to 13?
Protect yourself against
meningitis and
septicaemia

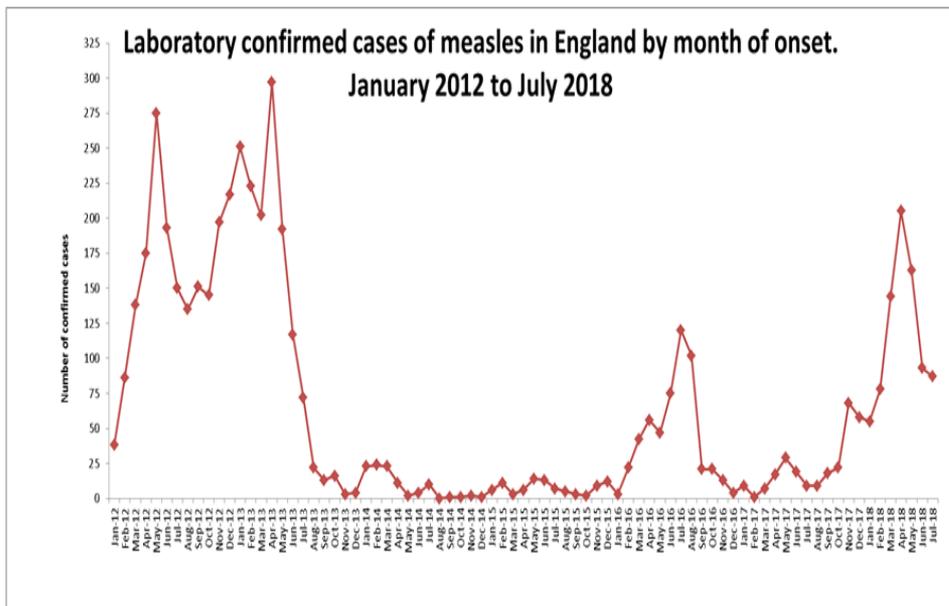
Are you in school
years 9 to 13 (aged 13 to
18 years)? Living in England?

You need to get the MenACWY vaccination.
This leaflet tells you what to expect next.



Measles

Figure 1: Laboratory confirmed cases of measles in England by month of onset. January 2012 to July 2018*



*provisional data

Measles: >800 cases in England, 11 in HIOW
Mumps: 275 in Q1 in England, 14 in HIOW
Rubella: 1 case in England, 0 - HIOW

Mumps

Figure 2. Laboratory confirmed cases of mumps by quarter, England: 2003-2017

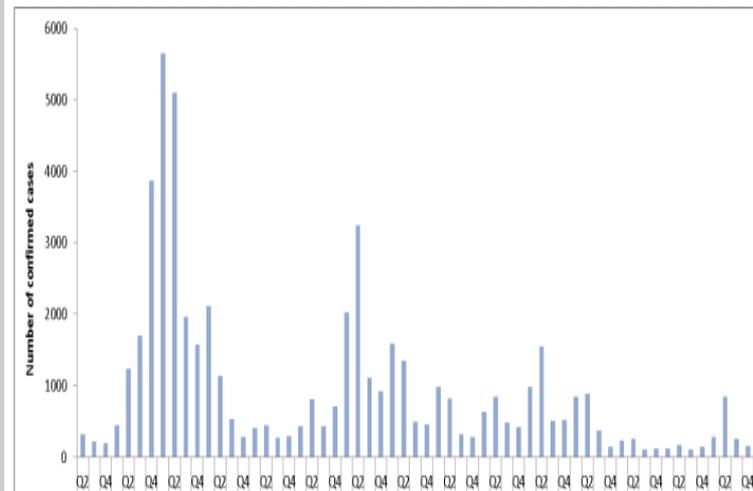
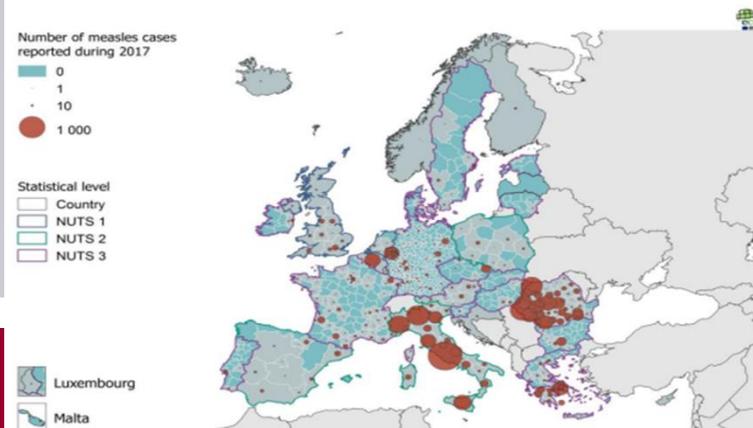


Figure 5. Subnational distribution of measles cases by place of notification*, EU/EEA, 2017 (n=14 600)





Press release

New flu vaccine available this winter for those aged 65 and over

A more effective flu vaccine is available this winter for those

- The adjuvanted trivalent vaccine (aTIV) for all 65s and over. licensed for use in the UK in August 2017, this was not an option. However the JCVI advice is that this is now the best option for 2
- The quadrivalent vaccine (QIV) for 18 – under 65s at risk. In

70 years of the NHS...and 100 years since ‘Spanish ‘flu

Table: Adjusted influenza vaccine effectiveness (VE) against medically-attended laboratory confirmed influenza by age group and influenza type in 2017/18, UK.

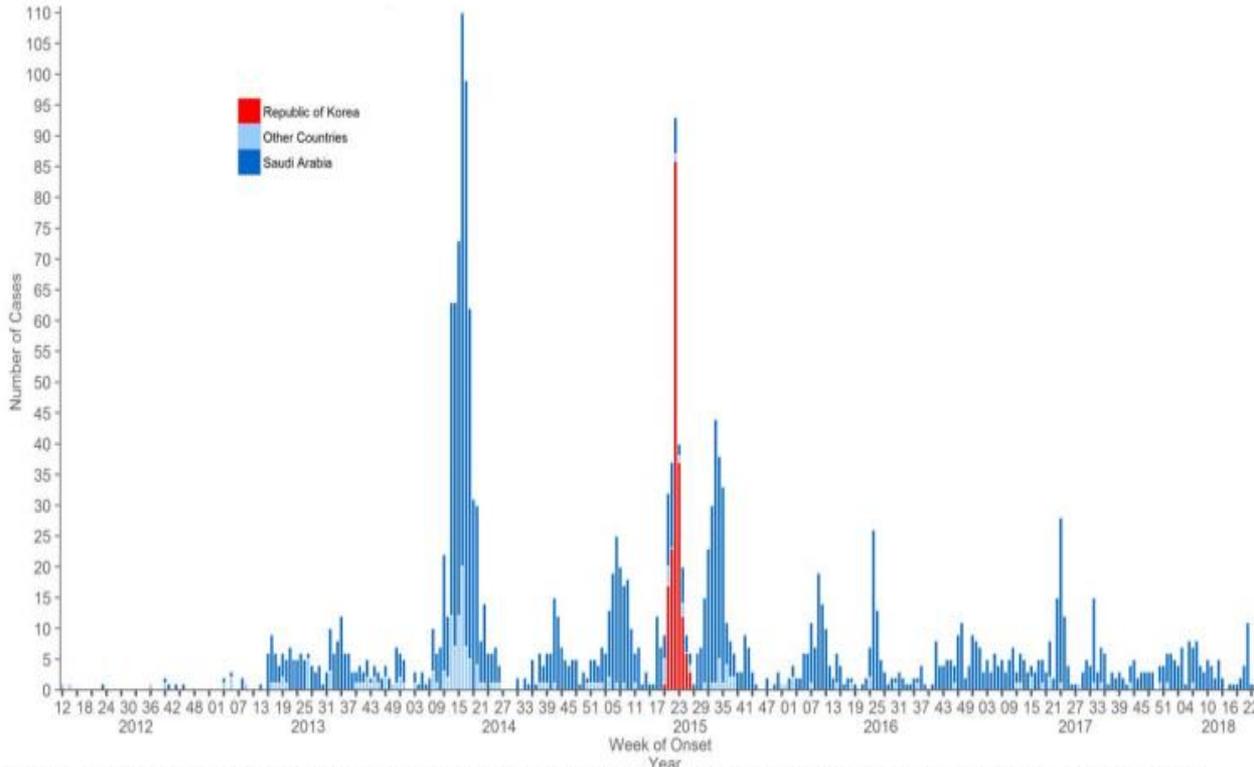
Group	A(H3N2) adjusted VE (95% CI)	A(H1N1)pdm09 adjusted VE (95% CI)	B adjusted VE (95% CI)	All adjusted VE (95% CI)
2-17 year old (LAIV only)	-75.5 (-289.6, 21.0)	90.3 (16.4, 98.9)	60.8 (8.2, 83.3)	26.9 (-32.6, 59.7)
18-64 year old (any vaccine)	-14.7 (-72.7, 23.8)	69.1 (11.4, 89.2)	18.2 (-15.1, 41.9)	12.2 (-16.8, 34.0)
>65 year old (any vaccine)	16.8 (-74.2, 60.3)	NA	13.2 (-68.4, 55.2)	10.1 (-54.8, 47.8)
All age	-16.4 (-59.3, 14.9)	66.3 (33.4, 82.9)	24.7 (1.1, 42.7)	15.0 (-6.3, 32.0)



MERS-CoV

Middle-East Respiratory Syndrome Coronavirus

- First identified in 2012
- ? Bats – Camels – Humans
- Healthcare setting transmission is a risk
- Awareness, algorithms,



Other countries: Algeria, Austria, Bahrain, China, Egypt, France, Germany, Greece, Iran, Italy, Jordan, Kuwait, Lebanon, Malaysia, Netherlands, Oman, Philippines, Qatar, Thailand, Tunisia, Turkey, United Arab Emirates, United Kingdom, United States of America, Yemen
 Please note that the underlying data is subject to change as the investigations around cases are ongoing. Onset date estimated if not available. Source: WHO

Figure 1. Epidemic curve of MERS-CoV human cases* as of 30 June 2018

Public Health England

MERS-CoV

Middle East respiratory syndrome coronavirus

Have you travelled from the Middle East?
 Symptoms of MERS-CoV infection

a fever (38°C and over) a cough



Monkeypox



- A rare viral zoonotic disease that occurs primarily in remote parts of central and west Africa, near tropical rainforests.
- The virus is similar to smallpox, although much milder.
- The virus is mostly transmitted to people from various wild animals such as rodents and primates, but has limited secondary spread through human-to-human transmission.
- Typically, case fatality in monkeypox outbreaks has been between 1% and 10%, with most deaths occurring in younger age groups.
- There is no specific treatment or vaccine available although prior smallpox vaccination was highly effective in preventing monkeypox as well.
- Infection of index cases results from direct contact with the blood, bodily fluids, or cutaneous or mucosal lesions of infected animals.



Summary

We have seen very significant reductions in the burden of infectious disease

The potential threats from infectious disease are diverse and challenging. TB, sexually transmitted infections, hepatitis C all continue to pose serious public health challenges within our population.

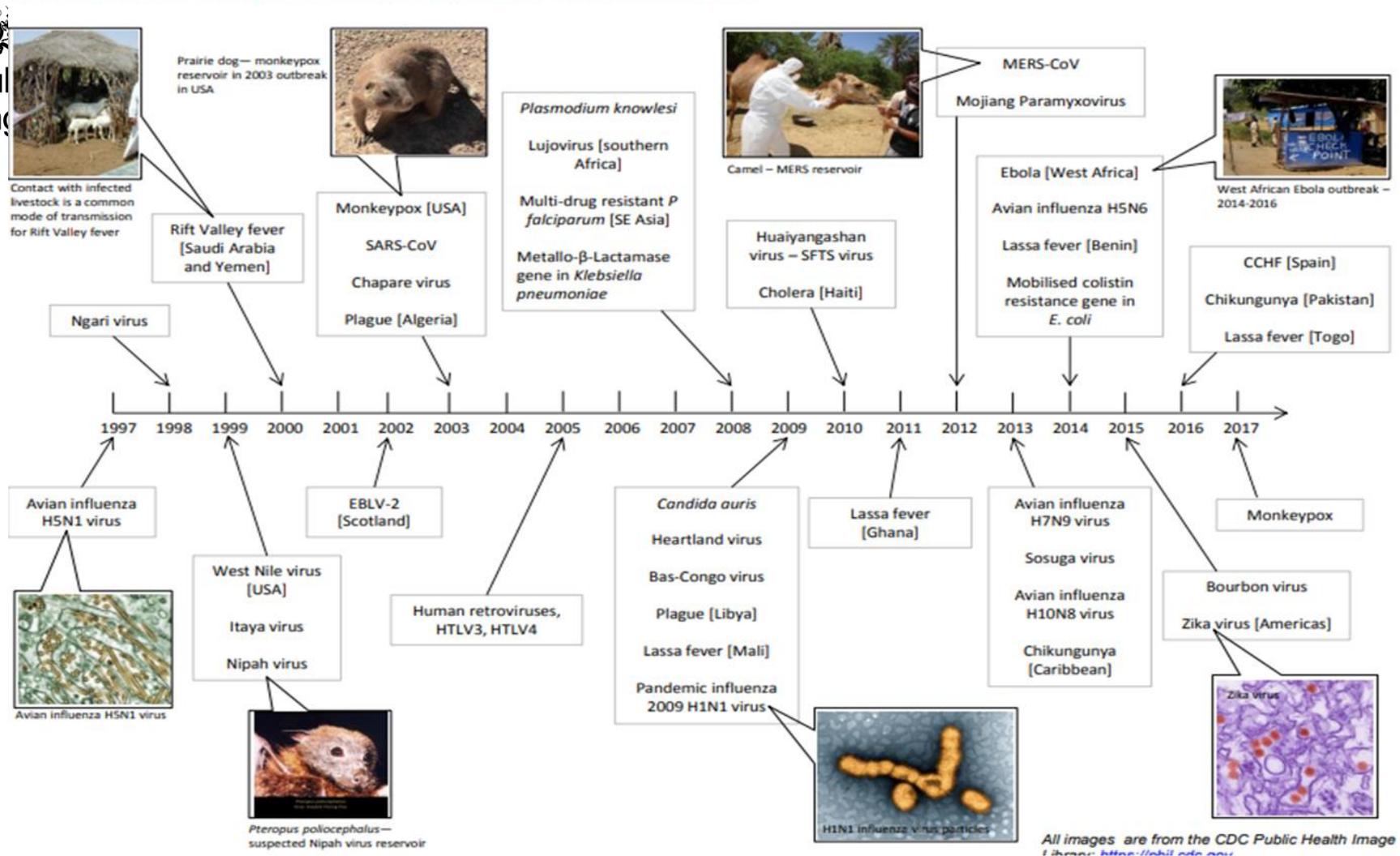
We must also be alert to, and able to respond to, emerging infections such as Middle East respiratory syndrome coronavirus (MERS-CoV), Zika virus and the spectre of drug resistant organisms

In doing this, we must retain a global outlook

We have to prepare and plan for major outbreaks, ensuring we are able to respond early and effectively to new and emerging threats to our health.

Timeline of new and emerging infections since 1997

Pul
Eng



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