Farsótta-skýrslur 2013–2014

Tilkynningarskyldir sjúkdómar
Farsóttagreining
Sögulegar upplýsingar

Embætti landlæknis
Directorate of Health

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Þakkir
Embættið þakkar rannsóknarstofum Landspítala í sýkla- og veirufræði og rannsóknarstofu Sjúkrahúss Akureyrar auk meðhöndlandi lækna um land allt fyrir upplýsingar um tilkynningarskylda sjúkdóma.

Efnisyfirlit

Inngangur 5
Sýkingar í öndunarvegum 6
Árstíðarbundin Inflúensa 6
Heimsfaraldur á 19. öld 8
Heimsfaraldrar á 20. og 21. öld 9
Spánska veikin 9
Asíuinflúensan 1957, Hong Kong inflúensan 1968 og svínainflúensan 2009 10
Berklar 11
Berklafaraldurinn á 20. öld 12
Aðgerðir gegn berklum 14
Mycobacterium bovis 14
Berklar 2013–2014 15
Kynsjúkdómar, HIV og aðrar blóðbornar veirur 16
Klamydíusýking 16
Lekandi 18
Sárasótt 21
HIV/alnæmi 23
Lifrarbólgur B og C 25
Lifrarbólga B 26
Lifrarbólga C 27
Sýkingar í meltingarvegi 28
Kampýlóbaktersýking 28
Salmónellusýking 30
E. coli O157 32
Aðrar sýkingar í meltingarvegi 32
Bótúlíneitrun 32
Giardíusýkingar 32
Lifrarbólga A 34
Sígellusýkingar 35
Sjúkdómar sem bólusett er gegn 36
Barnaveiki 36

Hettusótt 37
Bólusótt 38
Kikhósti 39
Lömunarveiki 41
Sögulegar heimildir um lömunarveiki á Íslandi 41
Bólusetning gegn lömunarveiki á Íslandi 41
Vöktun á lömunarveiki á Íslandi 41
Meningókokkasjúkdómur 42
Mislingar 44
Pneumókokkasýking (ífarandi) 45
Rauðir hundar 46
Stífkrampi 47
Framkvæmd bólusetninga 48
Þátttaka í bólusetningum 49
Bólusetning barna 49
Sýklalyfjanotkun og sýklalyfjaónæmi 52
Sýklalyfjanotkun 52
Sýklalyfjaónæmi 53
Meticillin ónæmur Staphylococcus aureus (MÓSA) 54
Vankómýsín ónæmir enterókokkar 55
Breiðvirkir betalaktamasar (ESBL) 56
Sýkingar í tengslum við veitingu heilbrigðisþjónustu 57
Atburðir af völdum eiturefna og geislavirkra efna 58
Eldgos í Holuhrauni 58
Áhrif á heilsufar og ráðleggingar um viðbrögð við SO_2 frá eldgosum 59
Vinnuverndarmörk 60
Almennar ráðleggingar 60
Frekari ráðstafanir 60
Mikil mengun utandyra 60
Reglugerð um bólusetningar nr. 221/2001 sbr. breytingu nr. 904/2013 61
Reglugerð nr. 221/2012 um skýrslugerð vegna sóttvarna sbr. breytingu nr. 816/2012 64
Skilgreiningar Evrópusambandsins á sjúkdómstilvikum 68
Heimildir 125

Inngangur

Sóttvarnalæknir er ábyrgur fyrir því að haldin sé sjúkdómaskrá sem tekur til smitsjúkdóma, sjúkdómsvalda þeirra, bráðra sjúkdóma af völdum eiturefna og geislavirkra efna, óvenjulegra og óvæntra atburða sem geta haft alvarlegar heilsufarslegar afleiðingar meðal þjóða heims, sýklalyfjanotkunar og bólusetninga (ónæmisaðgerða), sbr. reglugerð um bólusetningar á Íslandi nr. 221/2001 með síðari breytingu, sbr. breytingu með reglugerð nr. 904/2013.

Þeir sjúkdómar, sjúkdómsvaldar og atburðir sem sóttvarnalög fjalla um eru skráningarskyldir og geti þeir ógnað almannaheill eru þeir jafnframt tilkynningarskyldir.

Með skráningarskyldu er átt við skyldu til að senda sóttvarnalækni ópersónugreindar upplýsingar en með tilkynningarskyldu er átt við skyldu til að senda persónugreindar upplýsingar um sjúkdómstilvik.

Skráningar- og tilkynningarskyldir sjúkdómar eru tilgreindir í reglugerð nr. 221/2012 um skýrslugerð vegna sóttvarna með síðari breytingu, sbr. breytingu með reglugerð nr. 816/2012.

Þessi farsóttaskýrsla tekur til tilkynningarskyldra sjúkdóma á árinu 2013–2014 og þeir bornir saman við sjúkdómstilfelli á árum áður og í sumum tilfellum áratugum aftur í tímann. Fjallað er stuttlega um hvern sjúkdóm fyrir sig. Þá er einnig fjallað um sýklalyfjanotkun, bólusetningar og sýkingar í tengslum við veitingu heilbrigðisþjónustu.

Haraldur Briem
sóttvarnalæknir

Eftirfarandi komu að vinnslu þessarar skýrslu:

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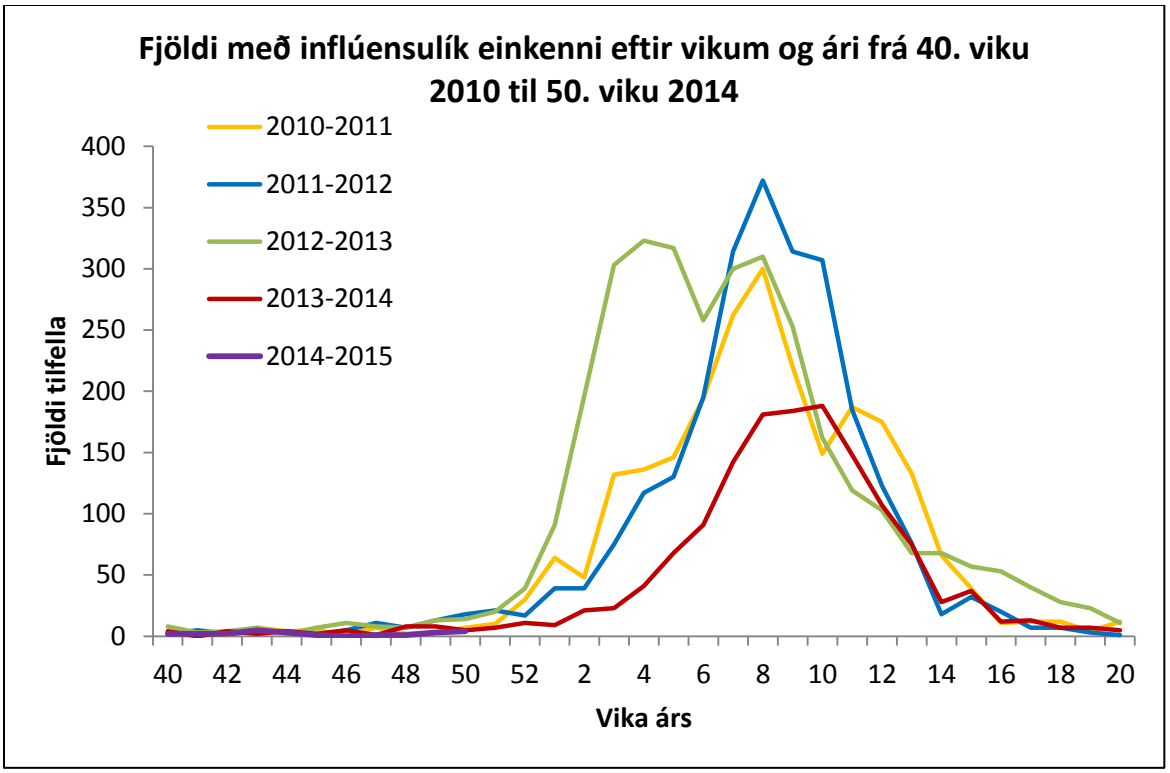
Þórólfur Guðnason yfirlæknir, sóttvarnasviði Embættis landlæknis
Þorsteinn Blöndal yfirlæknir, Göngudeild sóttvarna, Heilsugæslu Höfuðborgarsvæðisins
Þórarinn Tyrfingsson yfirlæknir, sjúkrahúsinu Vogi (SÁÁ)
Þórunn Rafnar Þorsteinsdóttir verkefnisstjóri, sóttvarnasviði Embættis landlæknis

Upplýsingar um tilkynningarskylda sjúkdóma eru fengnar frá rannsóknarstofum Landspítala í sýkla- og veirufræði, rannsóknarstofu sjúkrahúss Akureyrar (FSA) og meðhöndlandi læknum um land allt.

Sýkingar í öndunarvegum

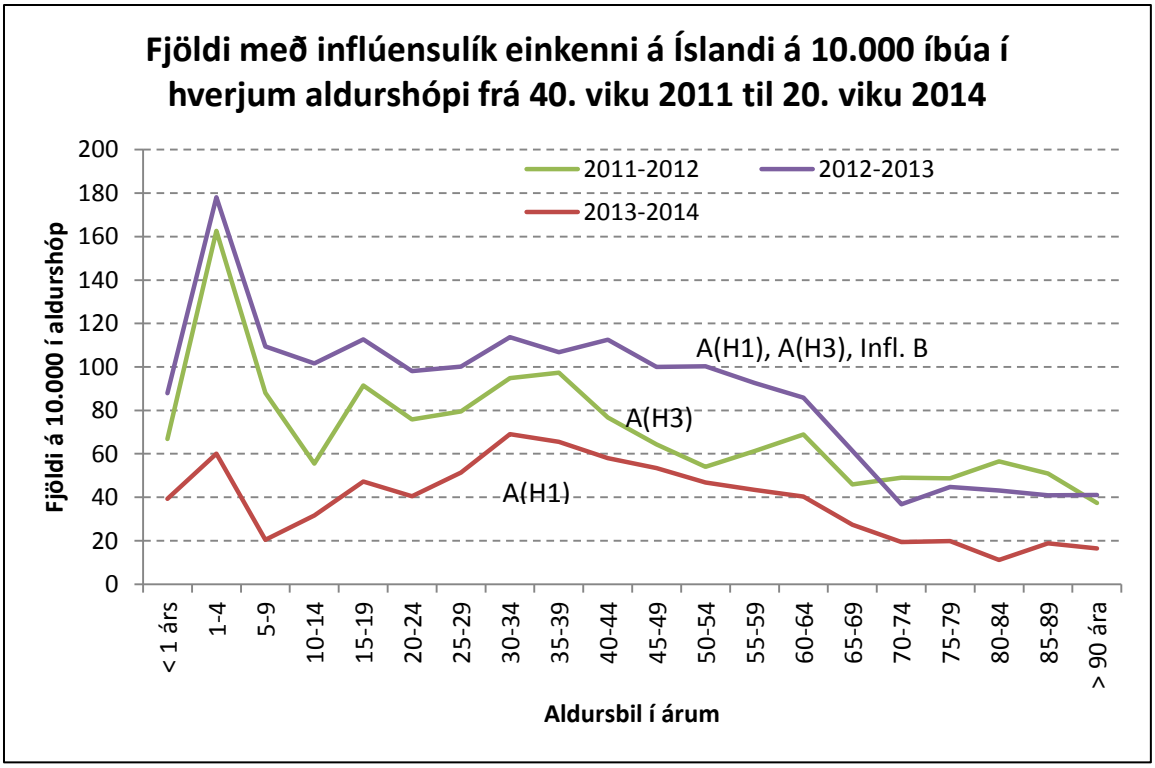
Árstíðarbundin Inflúensa

Árstíðabundna inflúensan gekk yfir landið frá janúar til mars árin 2013 og 2014, sjá mynd.



Árið 2012 voru staðfestar inflúensugreiningar af völdum inflúensu A(H3N2), en það ár greindist enginn með svínainflúensu A(H1N1) 2009 eða inflúensu B. Inflúensufaraldurinn sem hófst í janúar 2013 var oftast af völdum inflúensu A(H3N2) og A(H1N1)pdm09. Faraldurinn sem gekk yfir í ársbyrjun 2014 var oftast af völdum inflúensu A(H1N1)pdm09 en sjaldnar af völdum inflúensu A(H3N2) og B stofna inflúensu, sjá töflu byggða á greiningu veirufræðideildar Landspítala.

Vika	2012/2013				2013/2014			
	A(H1)pdm09	A(H3)	B	Samtals	A(H1)pdm09	A(H3)	B	Samtals
40	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0
42	0	1	1	2	0	0	0	0
43	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0
47	0	1	0	1	0	0	0	0
48	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0
50	1	0	0	1	0	0	0	0
51	0	0	0	0	0	0	0	0
52	2	1	1	4	1	0	1	2
1	4	7	0	11	0	0	0	0
2	11	9	0	20	3	0	0	0
3	10	17	0	27	2	0	0	0
4	16	9	1	26	3	0	0	0
5	7	9	2	18	10	0	0	10
6	6	4	1	11	14	1	0	15
7	10	5	0	15	16	1	0	17
8	14	5	7	26	14	1	0	15
9	4	2	3	9	20	2	0	22
10	2	0	2	4	16	0	1	17
11	3	1	4	8	7	1	3	11
12	4	1	11	16	5	1	1	7
13	2	1	1	4	2	0	1	3
14	2	2	6	10	5	1	0	6
15	1	1	3	5	1	0	0	1
16	1	0	0	1	0	0	0	0
17	2	2	4	8	0	0	0	0
18	0	0	2	2	0	0	2	0
19	1	0	6	7	1	0	1	2
20	0	0	3	3	0	0	0	0



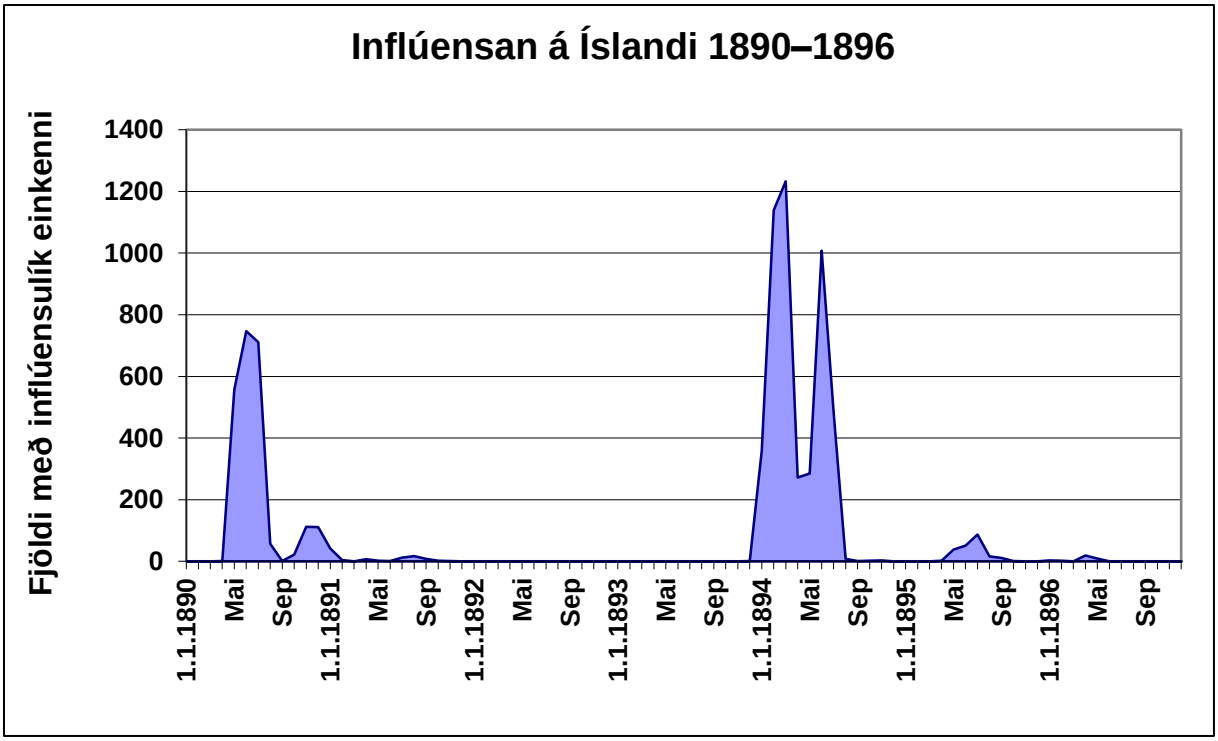
Heimsfaraldrar inflúensu

Heimsfaraldur á 19. öld[1,2]

Heimsfaraldrinum, sem hófst árið 1889, er betur lýst en fyrri faröldrum og sennilega sá fyrsti sem náði raunverulega til allra landa heims. Hann hófst sennilega vorið 1889 í Rússlandi, breiddist smám saman út til aðlægra landa þegar leið á árið en í ársbyrjun 1890 hafði hann náð til flestra landa heims. Til Íslands barst hann í maí 1890. Önnur og þriðja bylgja faraldursins reið yfir heiminn árin 1891 og 1892. Önnur bylgja faraldursins skall ekki á hér á landi fyrr en 1894, væntanlega vegna einangrunar landsins.

Heimsfaraldurinn var í upphafi ekki skæður hvorki hér á landi né annars staðar í heiminum. Dánartíðnin í heiminum jókst á hinn bóginn í seinni bylgjunum og reynslan hér á landi var sú sama 1894. Einkum voru það gamalmenni og fólk sem var veikt fyrir í lungum sem farnaðist illa.

Ekki er vitað með vissu hvaða inflúensustofn hafi valdið faraldrinum en 40 árum síðar, þegar inflúensuveiran var einangruð, mátti leiða líkum að því með mótefnamælingum hjá þeim sem voru lifandi 1889 að inflúensan hafi verið af A stofni með H2 mótefnavaka.



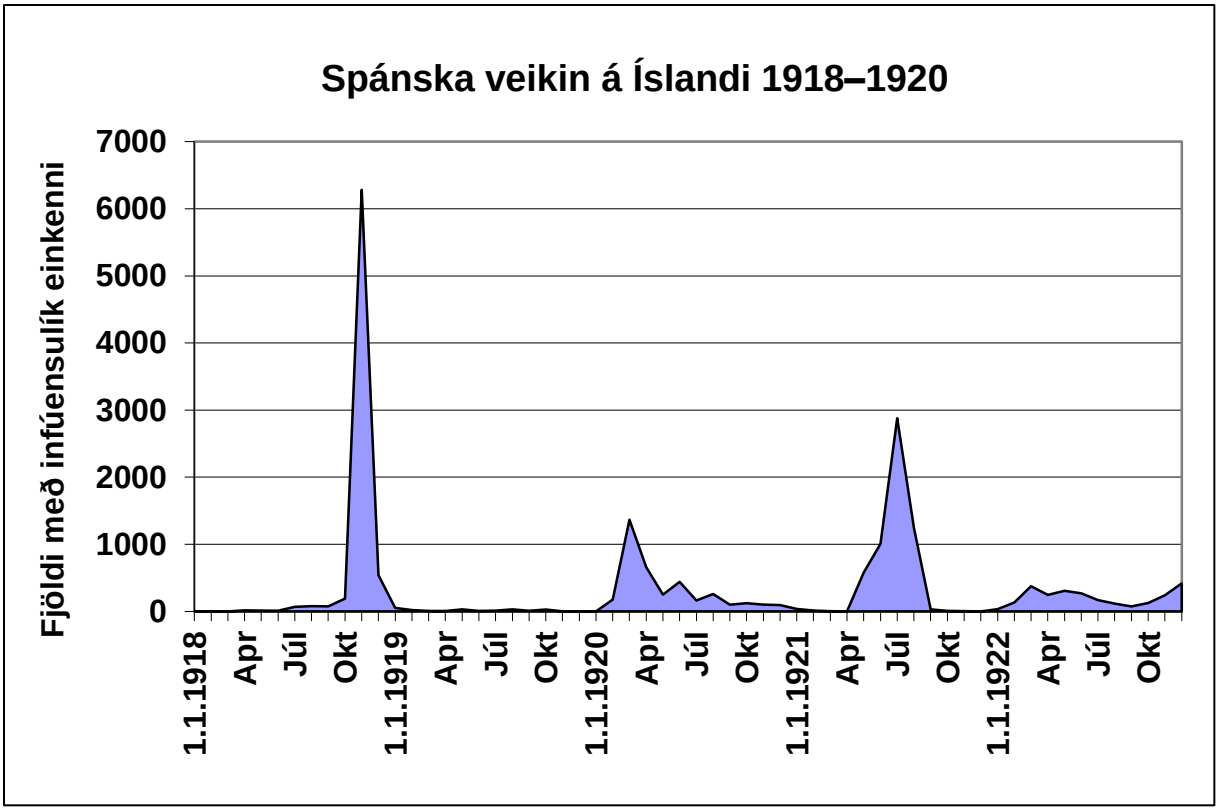
Heimsfaraldrar á 20. og 21. öld

Spánska veikin

Líklegt er að heimsfaraldur inflúensu hafi hafist í Bandaríkjunum í marsmánuði 1918. Þaðan breiddist hann í austurátt til Evrópu með bandarískum hermönnum sem þátt tóku í heimsstyrjöldinni fyrri. Framan af var inflúensa tiltölulega væg. Í ágúst 1918 tók faraldurinn óvænt breytingum á mismunandi svæðum nánast samtímis. Dánartíðni sjúkdómsins margfaldaðist þegar inflúensan barst til Afríku með skipi frá Bretlandi. Í Frakklandi jókst dánartíðnin skyndilega og einnig í Rússlandi en þaðan barst sóttin með skipakomum til Arkangelsk. Þá barst inflúensan aftur til Boston og þaðan um öll ríki Bandaríkjanna og var hún mun mannskæðari en áður. Mörg ríki veraldar urðu fyrir annarri og þriðju bylgju faraldursins 1918–1919 og 1919–1920.

Inflúensan barst til Íslands í byrjun júní 1918. Hún gekk um landið og var tiltölulega væg hér eins og annars staðar. Var hún kölluð sumarinflúensan. Í októberlok 1918 sótti inflúensan aftur mjög í sig veðrið og varð skyndilega afar mannskæð. Hún geisaði fyrst og fremst á suðvesturhluta landsins en líklegt má telja að sóttvarnaráðstafanir, sem fólust í ferðabanni á milli landshluta, hafi skilað þessum árangri og hlíft norður- og austurhluta landsins.

Slæm kvefpest gekk um landið vorið 1919, en óljóst er hvort um inflúensu hafi verið að ræða. Seinni bylgjur inflúensunnar gengu yfir vorið 1920 og sumarið 1921 en voru ekki eins mannskæðar og haustið 1918. Spánska veikin var af völdum inflúensu A(H1N1). Óvenjulegt var að flestir sem létust voru á aldrinum 20–40 ára.



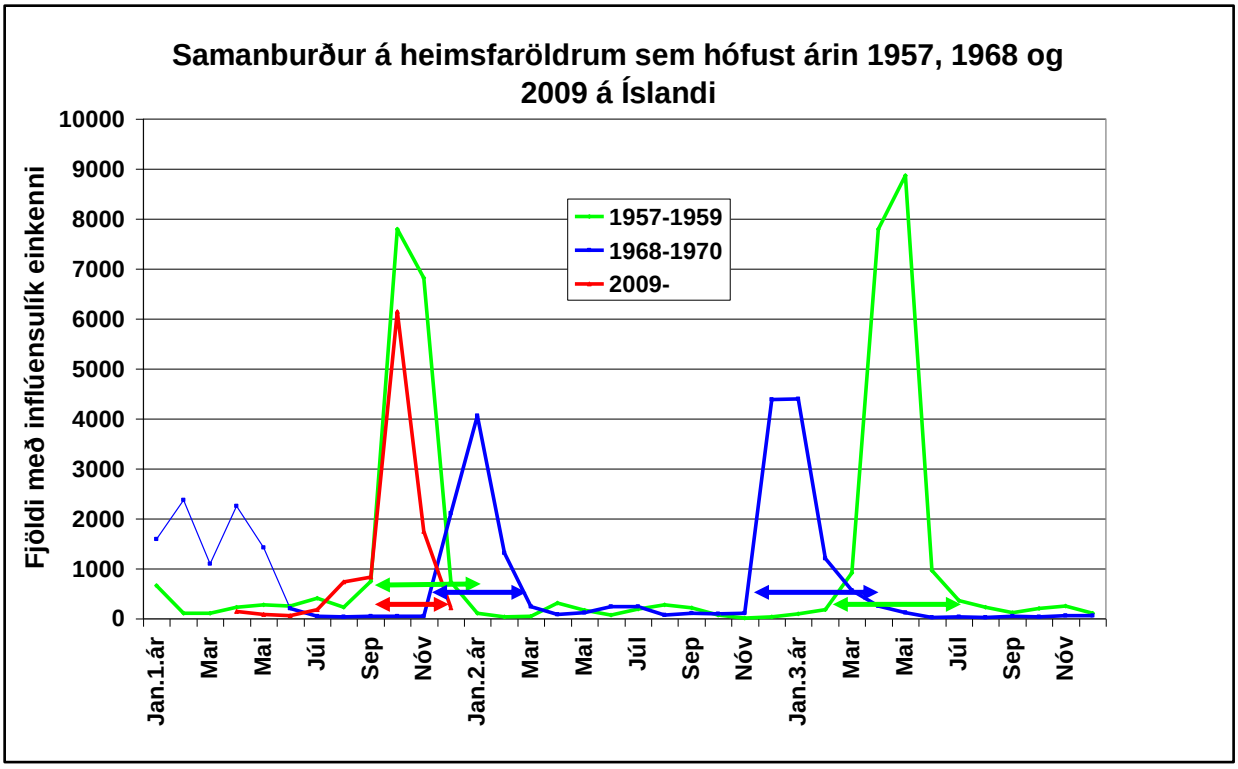
Asíuinflúensan 1957, Hong Kong inflúensan 1968 og svínainflúensan 2009

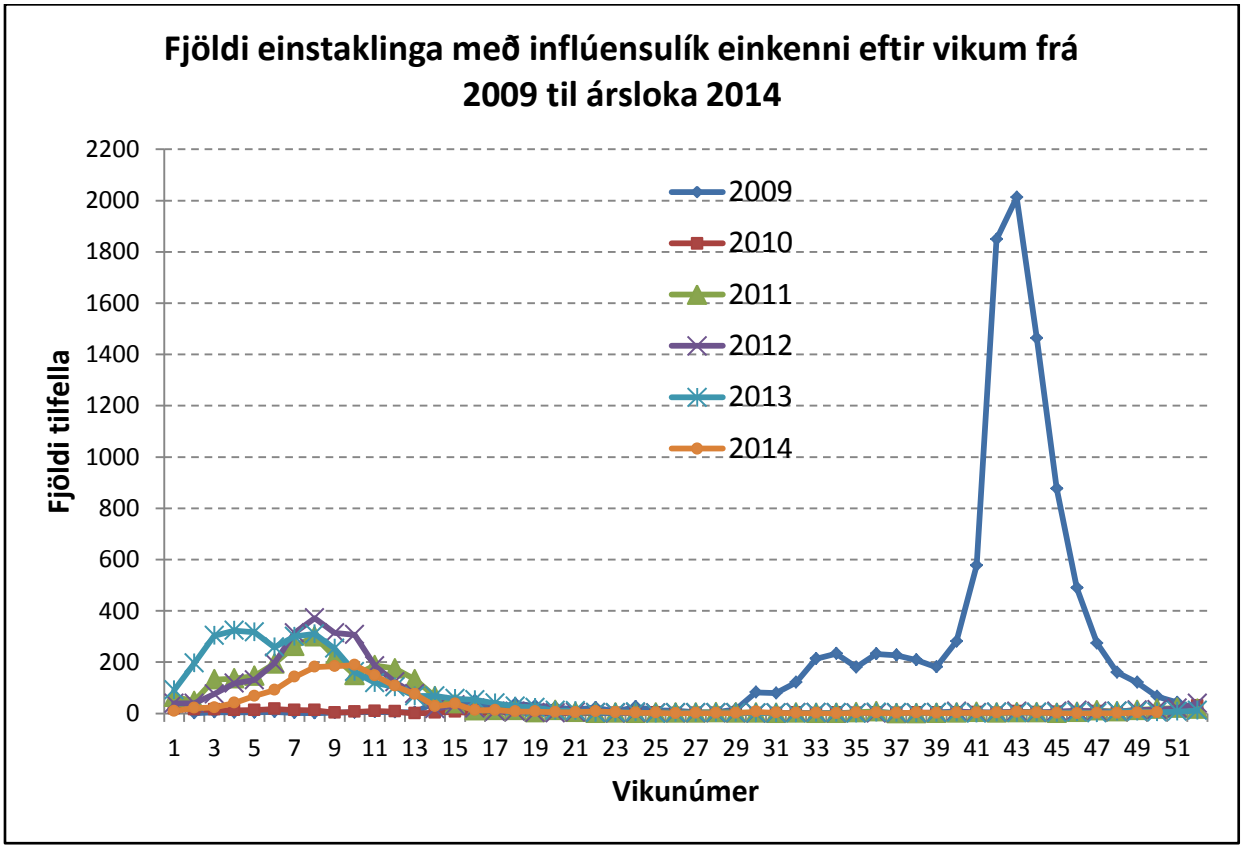
Aðrir heimsfaraldrar sem gengu yfir á 20. öld voru Asíuinflúensan 1957–1958, Hong Kong inflúensan 1968–1970 og svínainflúensan 2009.

Asíuinflúensan hófst í Kína 1957 og barst þaðan til allra ríkja veraldar. Til Íslands kom hún haustið 1957 beint frá Rússlandi að því er talið var. Inflúensufaraldurinn var ekki mjög mannskæður, hvorki hér né annars staðar þótt um greinilegan umframdauða væri að ræða. Önnur bylgja heimsfaraldursins gekk yfir í ársbyrjun 1958 en á Íslandi gekk önnur bylgja ekki yfir fyrr en vorið 1959. Var önnur bylgja metin mun þyngri en sú fyrri en reynsla annarra þjóða var einnig í þá veru. Lagðist hún þungt á eldra fólk og veikburða. Inflúensan var af völdum A(H2N2).

Hong Kong inflúensan hófst í júlímánuði 1968 í Kína og barst þaðan til flestra landa heims þegar leið á árið. Til Íslands barst hún í desember 1968. Önnur bylgja inflúensunnar reið yfir í árslok 1969 og ársbyrjun 1970. Þessi faraldur var talinn í meðallagi þungur hér á landi sem og annars staðar. Inflúensan var af völdum A(H3N2).

Heimsfaraldur af völdum inflúensu hófst síðvetrar 2009 í Bandaríkjunum og síðar í Mexíkó. Hann barst skjótt um heim allan, fyrst í austurátt til Evrópu um vorið 2009. Fyrstu greindu tilfellin bárust til Íslands í lok maí og byrjun júní 2009. Þegar leið á sumarið fjölgaði tilfellum en veikin reyndist væg framan af, ekki ólíkt og gerðist sumarið 1918. Í lok september og byrjun október 2009 fjölgaði tilfellum mikið með auknu álagi á heilbrigðisþjónustuna, einkum á gjörgæsludeild Landspítala. Inflúensan hafði mikil áhrif í samfélaginu og voru skólafjarvistir áberandi. Bólusetning gegn inflúensunni hófst um miðjan október 2009 og var helmingur landsmanna bólusettur á næstu mánuðum. Inflúensan sem kennd var við svínainflúensu var af völdum A(H1N1)pdm09. Ekki bar á nýrri bylgju svínainflúensunnar árin 2010–2014.



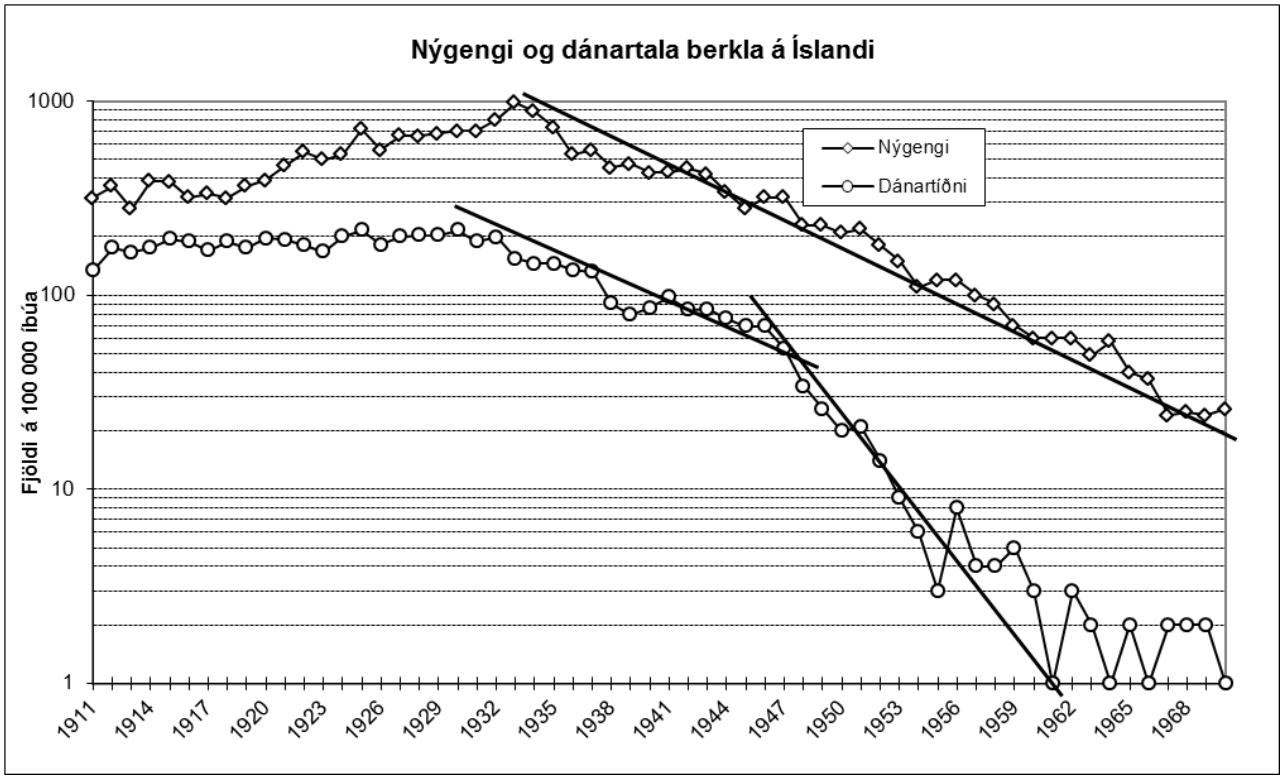


Berklar

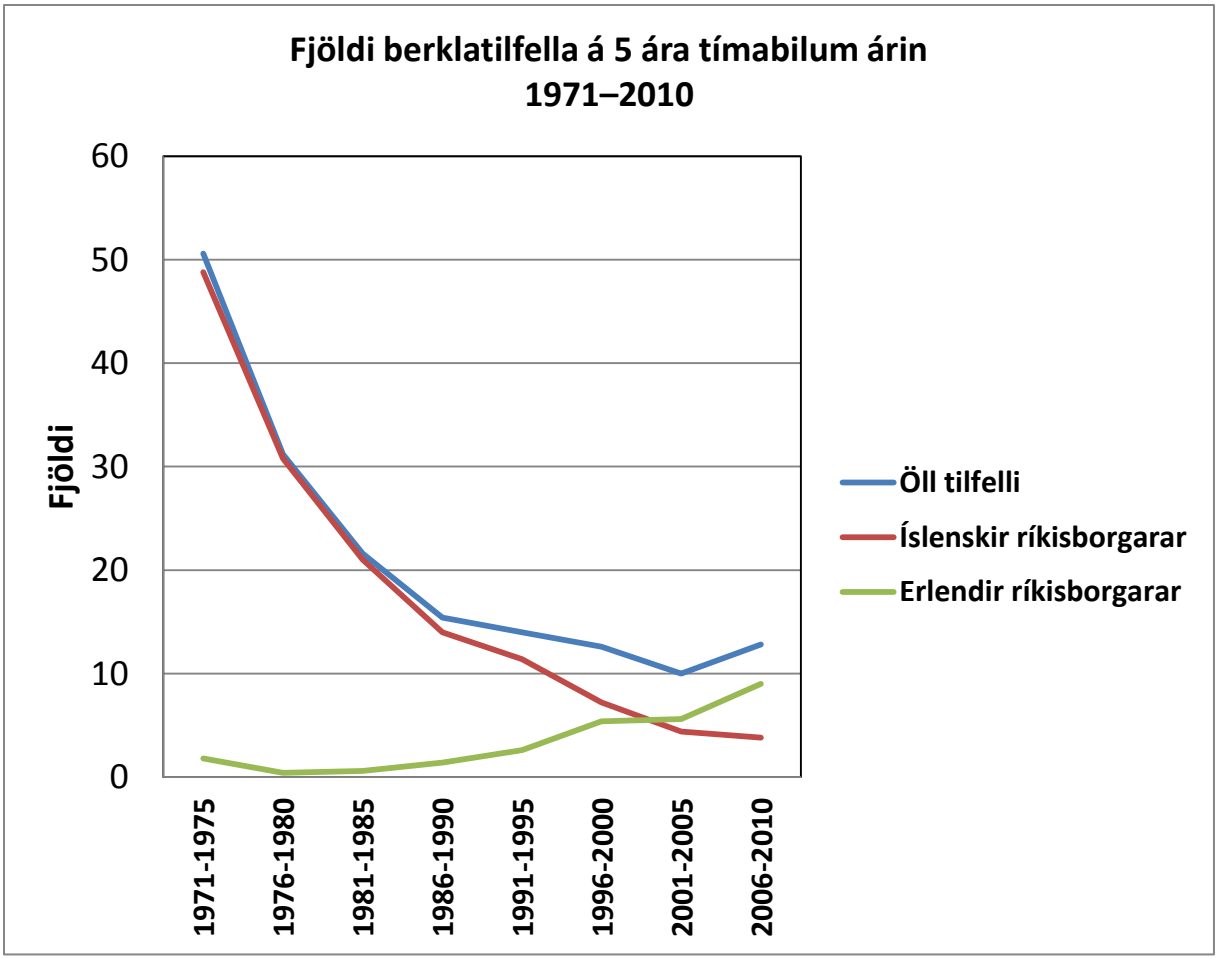
Greining berkla byggist á ræktun berklabakteríu eða berklaheildar (complex) sem staðfest er af rannsóknarstofu, smásjárskoðun sýrufastra stafa eða granúloma við vefjaskoðun ásamt klínískri greiningu (líklegt tilfelli) eða klínískum skilmerkjum eingöngu.

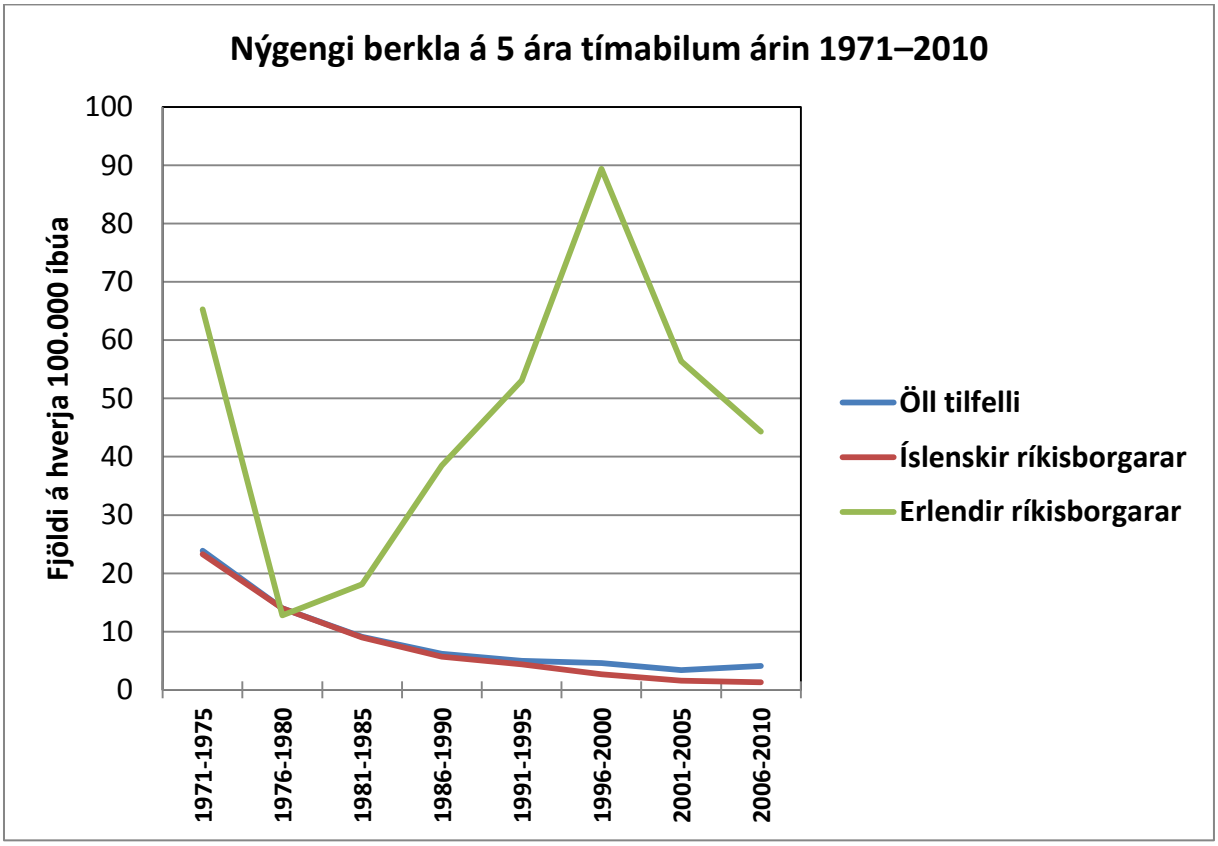
Berklafaraldurinn á 20. öld

Berklar hafa líklega verið til staðar á Íslandi í stöku tilfellum eftir að landið byggðist. Það var þó ekki fyrr en í lok 19. aldar að læknar urðu varir við berklatilfelli í vaxandi mæli og ljóst að berklafaraldur var í uppsiglingu[3]. Berklafaraldurinn náði hámarki á Íslandi í upphafi 4. áratugar síðustu aldar. Eftir það dró jafnt og þétt úr nýgengi sjúkdómsins og dánartíðni af völdum hans, einkum eftir að berklalyf komu til sögunnar.



Þótt dregið hafi úr fjölda berklatilfella undanfarna áratugi hefur orðið aukning í fjölda tilfella meðal útlendinga sem búsettir eru hér á landi. Nú sem fyrr eru Asíubúar hlutfallslega flestir meðal berklaveikra, en tíðni jákvæðra berklaprófa meðal íbúa frá Afríku, Asíu og Austur-Evrópu er einnig há[4].


Fjöldi berklatilfella á 5 ára tímabilum árin 1971–2010
Fjöldi
60
50
40
30
20
10
0
1971-1975
1976-1980
1981-1985
1986-1990
1991-1995
1996-2000
2001-2005
2006-2010
Öll tilfelli
Íslenskir ríkisborgarar
Erlendir ríkisborgarar


Nýgengi berkla á 5 ára tímabilum árin 1971–2010
Fjöldi á hverja 100.000 íbúa
100
90
80
70
60
50
40
30
20
10
0
1971-1975
1976-1980
1981-1985
1986-1990
1991-1995
1996-2000
2001-2005
2006-2010
Öll tilfelli
Íslenskir ríkisborgarar
Erlendir ríkisborgarar

Aðgerðir gegn berklum

Hér á landi var aldrei gripið til almennra bólusetninga gegn berklum en þáverandi berklayfirlæknir taldi að hin mikla rénun sem varð á berklum eftir seinni heimstyrjöldina ásamt efasemdum um vernd bólusetningarinnar gegn sýkingu og áhyggjur af aukaverkunum bóluefnisins réttlætti ekki almenna bólusetningu. Þar að auki var bent á mikilvægi berklahúðprófsins til að fylgjast með útbreiðslu veikinnar, en almenn bólusetning var talin draga úr getu prófsins til að finna nýsmit[5]. Fylgst var með útbeiðslu berklasmits í samfélaginu með því að berklahúðprófa börn á aldrinum 6–16 ára í skólum. Þeim sem greindust með berklasmit fækkaði jafnt og þétt og var svo komið um miðja 9. áratug síðustu aldar að nánast engin börn á skólaaldri greindust með smit[6]. Í kjölfar þessarar niðurstöðu var almennum berklahúðprófum í skólum hætt. Berklapróf eru þó eftir sem áður mikilvægt tæki til að finna berklasmit hjá þeim sem lifa í næsta nágrenni við berklasjúkling.

Berklapróf meðal þeirra, sem hyggjast setjast hér að, afmarka annan áhættuhóp. Í gildi eru verklagsreglur sem varða læknisskoðun meðal þeirra sem sækja um dvalarleyfi hér á landi. Þar er kveðið á um að dvalarleyfisumsækjendur frá Mið- og Suður-Ameríku, þ.m.t. Mexíkó, Evrópu utan Evrópska efnahagssvæðisins (EES), Asíu eða Afríku skulu gangast undir læknisrannsókn vegna sóttnæmra sjúkdóma. Berklahúðpróf skal gera hjá þeim sem eru 35 ára og yngri. Bendi húðpróf til berklasmits skal taka röntgenmynd af lungum. Röntgenmynd skal tekin af þeim sem eru eldri en 35 ára. Ef fólk hyggst dvelja skemur en eitt ár má takmarka berklaskoðun við röntgenmynd af lungum[7].

Á undanförnum áratugum hefur hlutur innflytjenda til landsins meðal berklaveikra farið vaxandi. Ljóst er að ekki næst til allra innflytjenda í læknisskoðun við komu til landsins. Því er afar brýnt að heilsugæslustöðvar hafi í huga berkla þegar fólk sækir læknisþjónustu vegna einkenna sem gætu bent til berkla.

Göngudeild sóttvarna við Heilsugæslu höfuðborgarsvæðisins gegnir mikilvægu hlutverki við að rekja berklasmit í samfélaginu þegar berklatilfelli greinast. Haft er uppá öllum þeim sem hafa haft náin samskipti við berklasjúkling og þeir berklaprófaðir. Sýni prófið merki um berklasmit er gefin fyrirbyggjandi lyfjameðferð gegn berklum. Mikilvægt er að hafa í huga að berklasmit jafngildir ekki berklasjúkdómi, en talið er að 10% þeirra sem smitast fái sjúkdóminn.

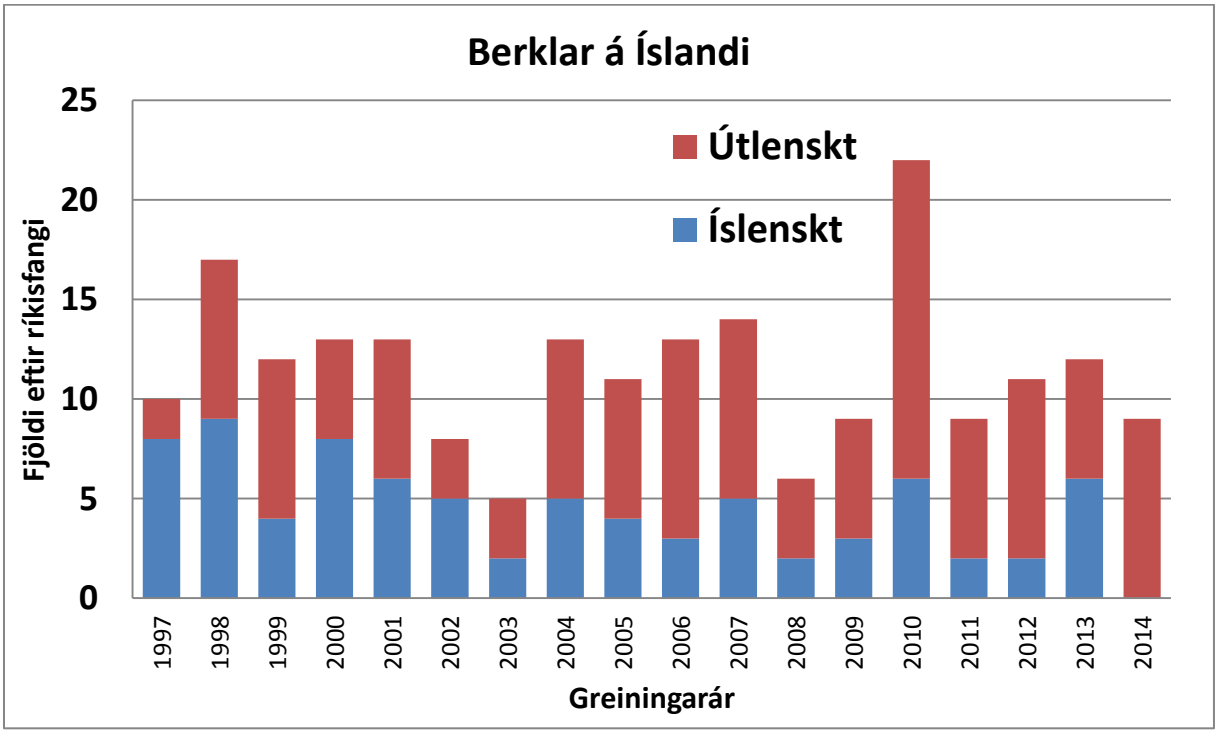
Mycobacterium bovis

Mycobacterium bovis sem fyrirfinnst í nautgripum en getur einnig sýkt menn telst þó ekki til berkla í mönnum samkvæmt sjúkdómsskilgreiningu Evrópusambandsins. Eftir að einn Íslendingur greindist með nautgripaberkla (*Mycobacterum bovis*) 2010 hefur ekki borið á þeim sjúkdómi. Ekki er ljóst hvernig smitið bar að og ekki er vitað til þess að berklar herji á nautgripi hér á landi um þessar mundir.

Berklar í nautgripum, sem eru vandamál víða um heim, komu upp á skólabúinu að Hólum í Hjaltadal 1958[8]. Talið var að danskur fjósamaður hafi borið smitið en hann var farinn af staðnum þegar sjúkdómsins varð vart. Margar kýr á búinu sýndu einkenni berklasmits og að endingu var öllum nautgripum á staðnum fargað. Notuð var ógerilsneydd mjólk á staðnum og smituðust a.m.k. tveir nemendur og var það reyndar kveikjan að því að sjúkdómurinn uppgötvaðist. Nautgripaberklar eru því svokölluð súna (*zoonosis*), en það er sjúkdómur sem er sameiginlegur dýrum og mönnum. Ekki hefur orðið vart við nautgripaberkla í nautgripum né í mönnum hér á landi frá árinu 1958 þar til greiningin var gerð 2010.

Berklar 2013–2014

Á árinu 2010 greindust óvenju margir með berkla hér á landi miðað við undanfarna áratugi. Reyndist meirihlutinn vera af erlendu bergi brotinn. Eftir það hefur dregið úr nýgengi berkla hér á landi. Enginn Íslendingur greindist með berkla árið 2014, sbr. mynd.

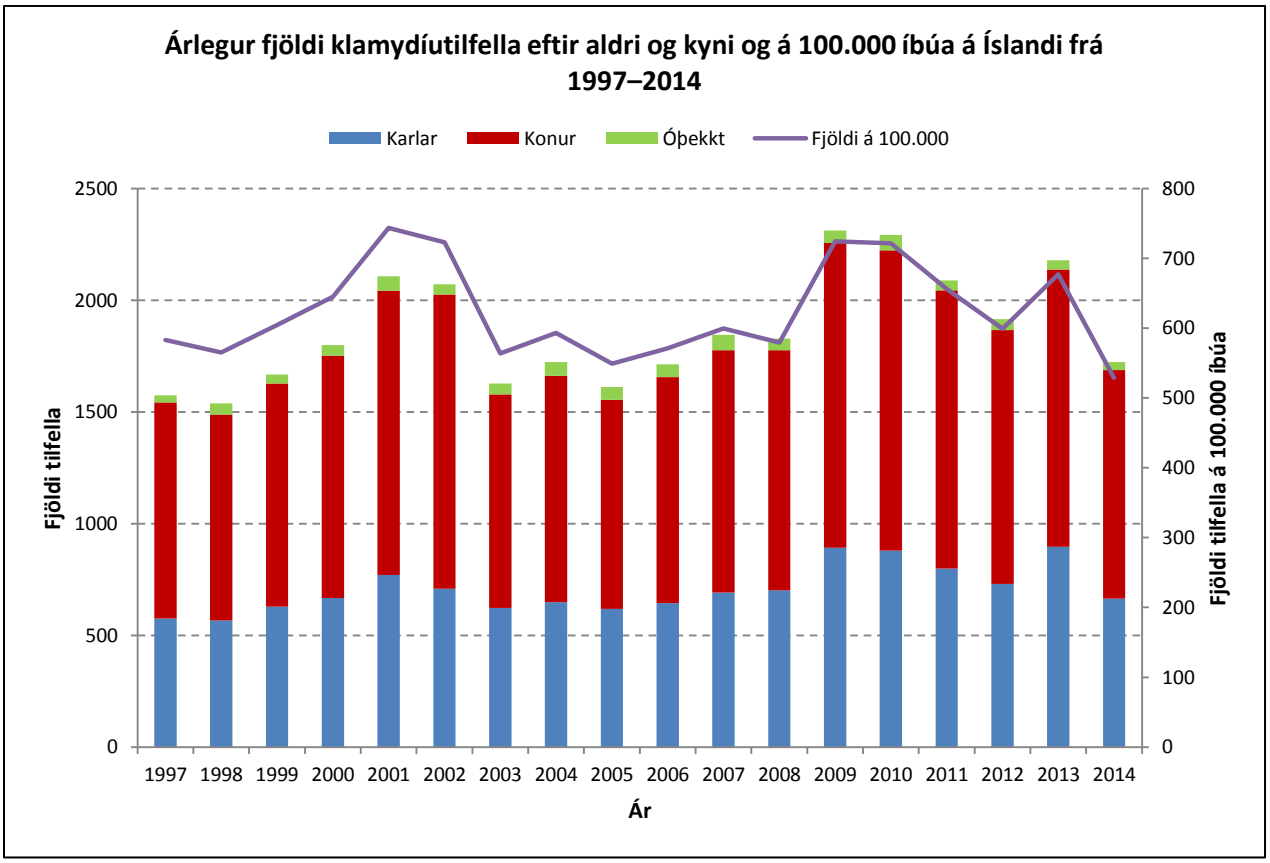


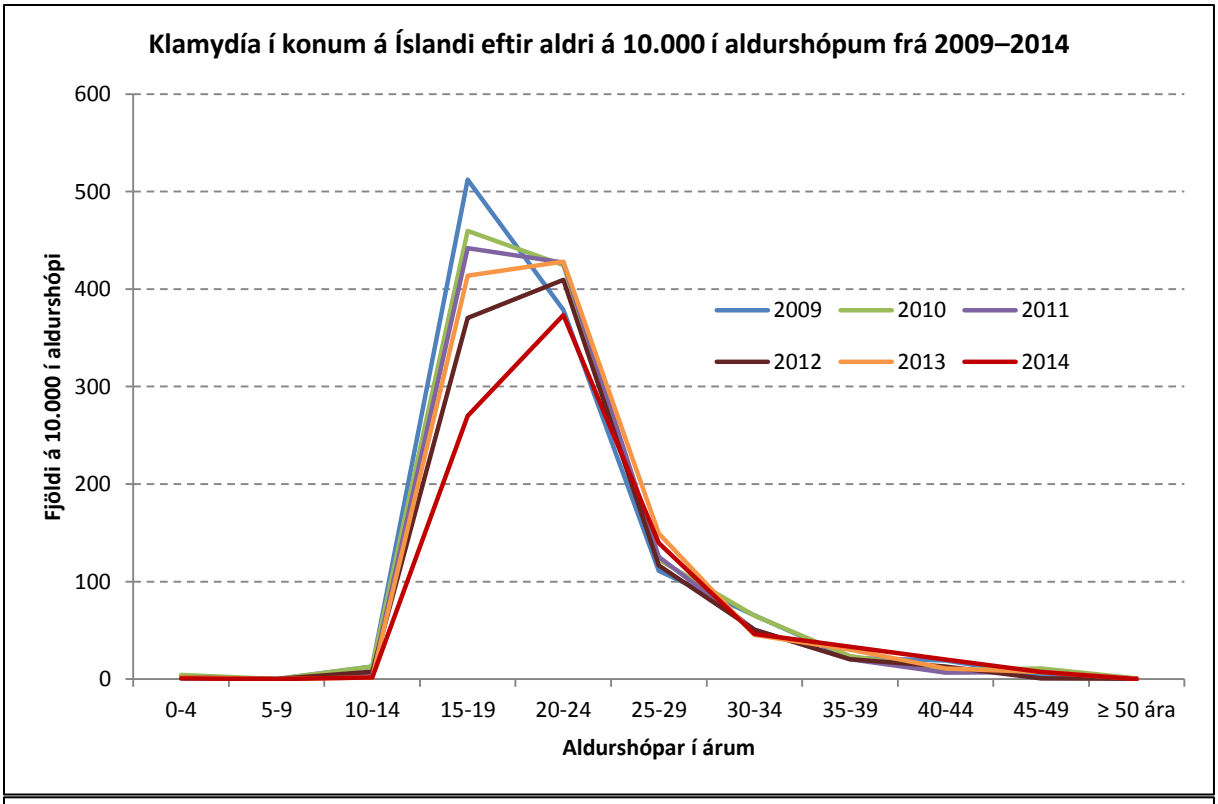
Einn þeirra sem greindist með berkla hér á landi í janúar 2014 var grænlenskur farandverkamaður sem þjáðst hafði af hósta frá haustinu 2013. Þegar hann greindist var hann vinnumaður á býli í Fljótunum fyrir Norðan. Eitt barn á býlinu svaraði berklaprófi, tók því smit en veiktist ekki. Áður hafði verkamaðurinn starfað haustið 2013 í sláturhúsi á Hornafirði og þar áður á Flúðum. Í sláturhúsinu voru um 70 manns í vinnu. Gerð var smitrakning eftir föngum en sumir starfsmenn sláturhússins voru erlendir farandverkamenn sem ekki reyndist unnt að ná til. Af þeim sem til náðist smitaðist einungis barnið í Fljótunum af Grænlendingnum.

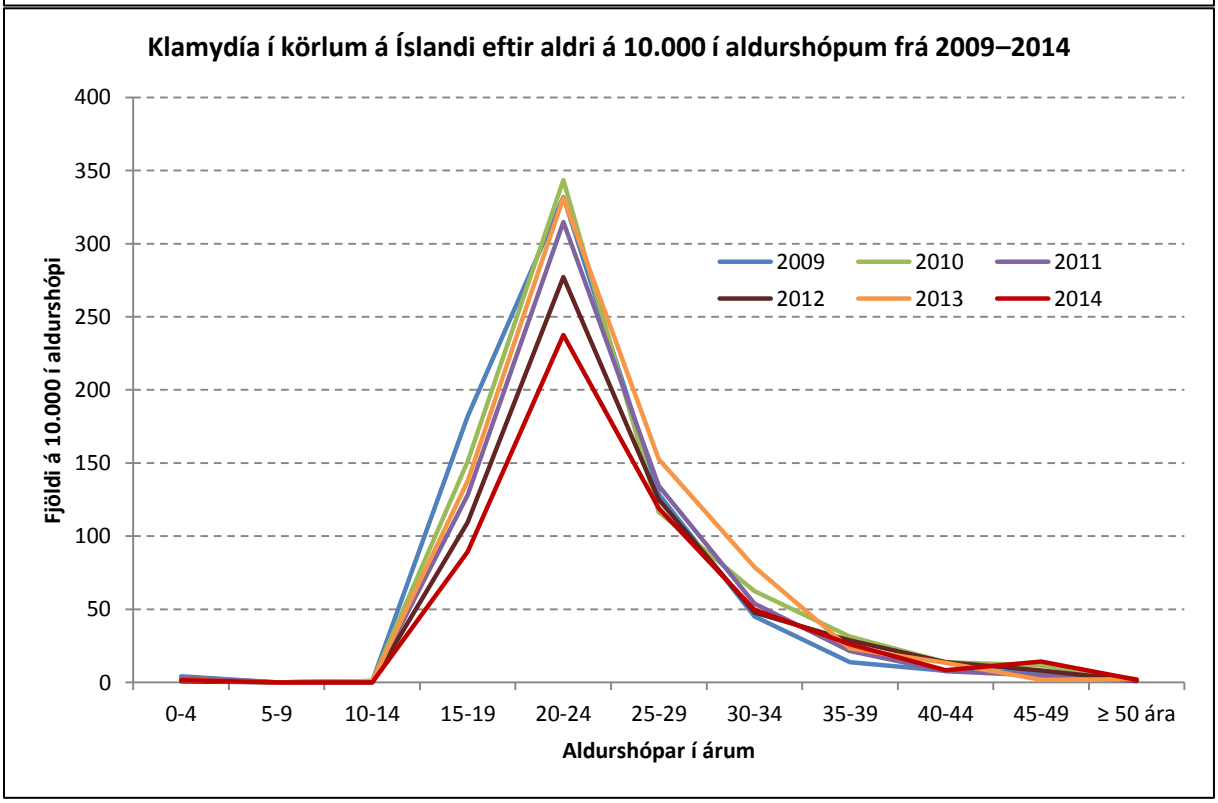
Kynsjúkdómar, HIV og aðrar blóðbornar veirur

Klamydíusýking

Verulega dró úr nýgengi klamydíusýkinga á Íslandi árið 2014. Mest dró úr sýkingum hjá stúlkum á aldrinum 15–19 ára en hjá karlmönnum fækkaði sýkingum mest hjá 20–24 ára. Ekki hefur fengist skýring á því af hverju það dregur úr nýgengi sýkinga hjá þessum aldurshópum.



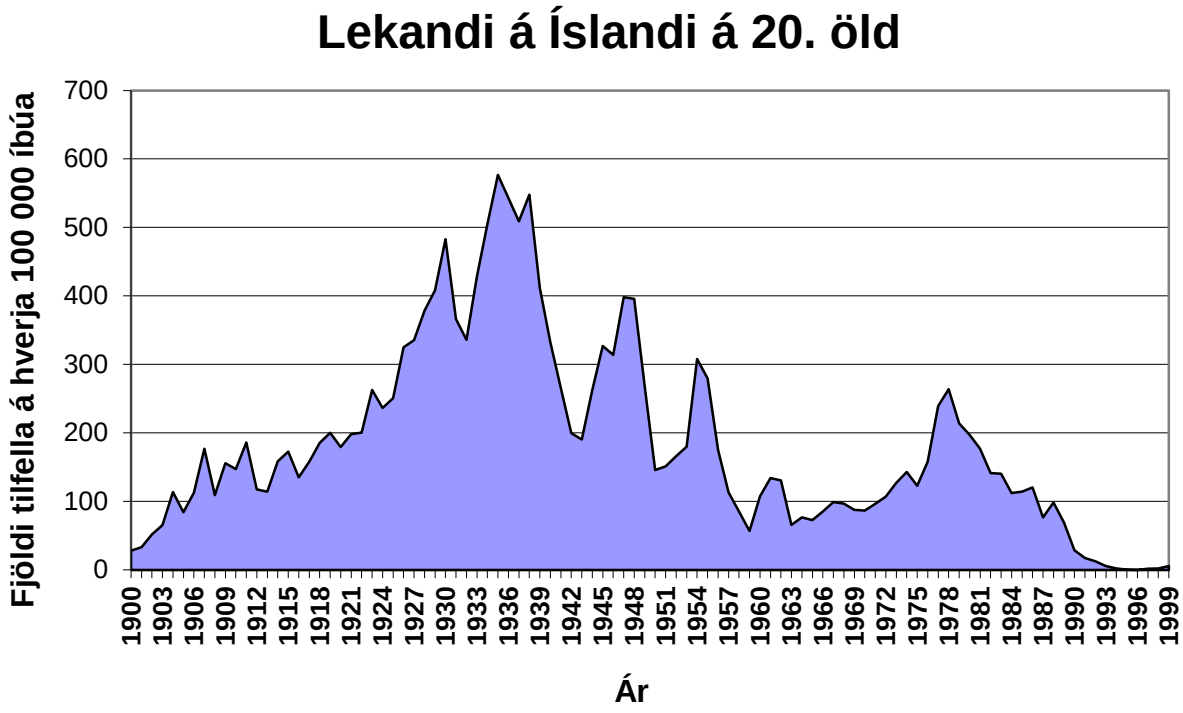




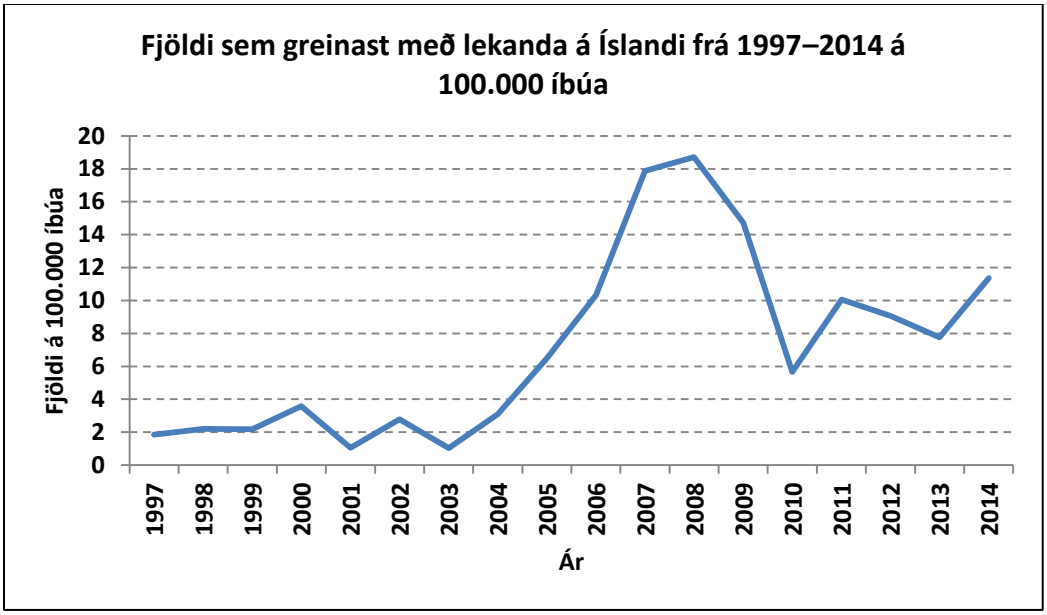
Fjöldi tilkynntra klamydíusýkinga á 100.000 íbúa er mestur á Íslandi miðað við önnur Evróplönd[9]. Hin Norðurlöndin eru einnig með háa tíðni miðað við önnur Evrópuríki. Þetta skýrist væntanlega tíðari sýnatöku á Norðurlöndum. Því er erfitt að meta hvort raunverulegt nýgengi í samfélaginu er hærra hér en annars staðar, vegna mismunandi vöktunar og heilbrigðisþjónustu milli Evrópulanda, ásamt mun á fjölda sýna sem tekinn er til klamydíugreiningar.

Lekandi

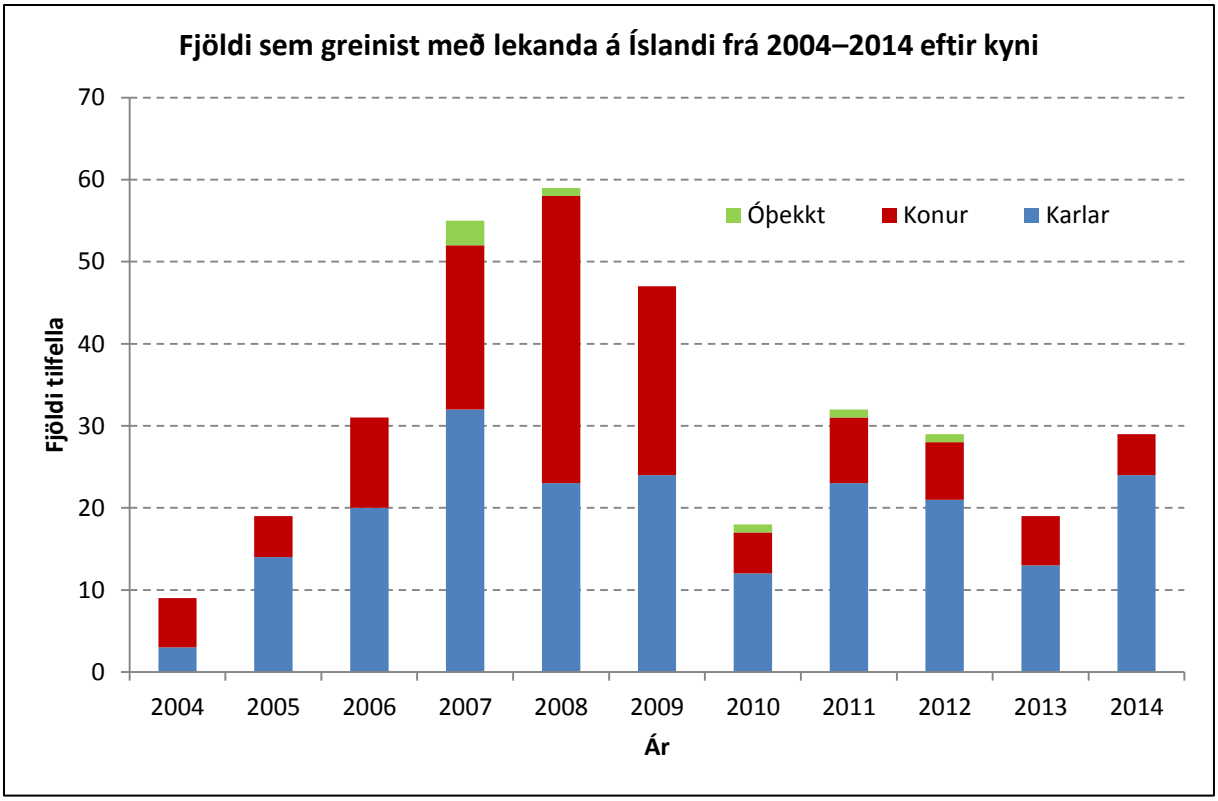
Lekandi var algengur sjúkdómur mestan hluta 20. aldar en nýgengi sjúkdómsins var hvað mest á árunum milli stríðsáranna. Eftir árið 1990 tók að draga mjög úr nýgengi sjúkdómsins.

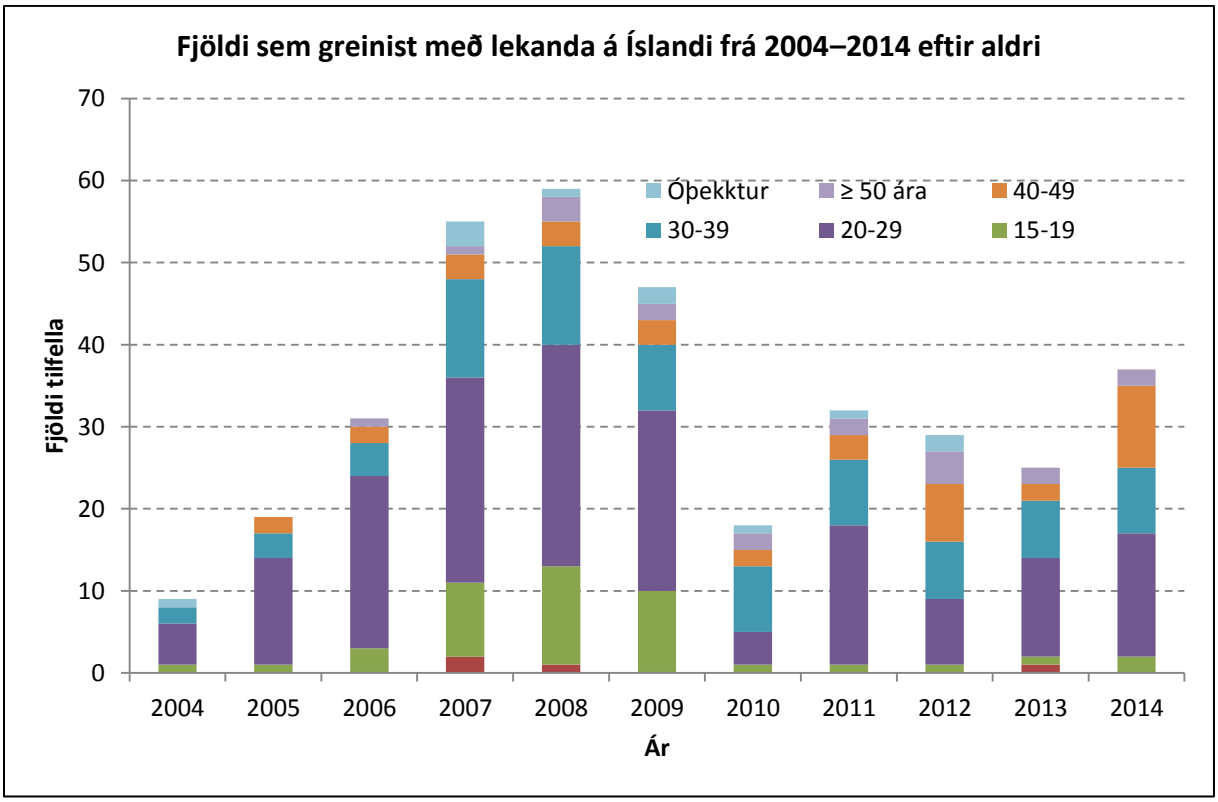


Tilkynningum til sóttvarnalæknis um lekanda fjölgaði nokkuð upp úr 2005, en árlegur fjöldi tilfella hefur verið frá 6–10/100.000 íbúa á síðastliðnum árum.



Lekandi greinist oftar hjá körlum en konum, oftast á aldrinum 20–24 ára, en flestir sem greinast eru í aldurhópum frá 15–44 ára. Uppruni smits er bæði innlendur og erlendur.





Í Evrópu hafa greinst stofnar sem eru ónæmir fyrir ceftriaxone, en það er eitt helsta lyfið sem hefur verið notað til að meðhöndla einstaklinga með ónæma stofna[10]. Samkvæmt niðurstöðum sýklafræðideildar Landspítala hafa allir sem greinst hafa með lekanda á Íslandi verið með stofna sem eru næmir fyrir ceftriaxone, nema einn árið 2009, sjá töflu.

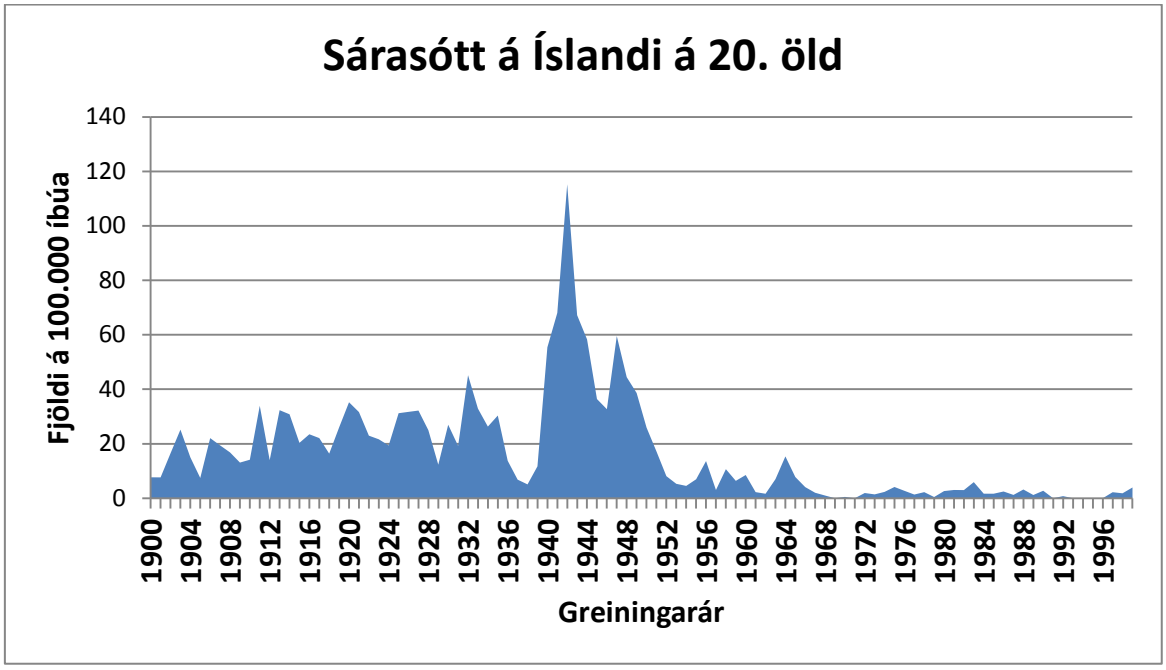
Sýklalyfjanæmi *Neisseria gonorrhoeae* á Íslandi tilkynnt til sóttvarnalæknis frá sýklafræðideild Landspítala árin 2007–2014
(S= næmi, I= skert næmi, R= ónæmi)

	Næmi	Penicillin	Tetracyclin	Ceftriaxone	Cefixime	Azythromycin	Ciproflocaxin
2007	**S**	4	5	20	-	19	7
	I	5	5	0	-	1	0
	R	11	10	0	-	0	13
	Samtals	20					
2008	**S**	1	3	26	-	24	12
	I	17	11	0	-	2	0
	R	8	12	0	-	0	14
	Samtals	26					
2009	**S**	0	1	13	-	13	8
	I	8	3	0	-	0	0
	R	6	10	1	-	1	6
	Samtals	**14**					
2010	**S**	0	0	5	-	5	0
	I	2	2	0	-	0	0
	R	3	3	0	-	0	5
	Samtals	5					
2011	**S**	3	3	11	-	11	6
	I	4	1	0	-	0	2
	R	4	7	0	-	0	3
	Samtals	11					
2012	**S**	-	-	12	6	12	6
	I	-	-	0	-	0	0
	R	-	-	0	2	0	6
	Samtals	12					
2013	**S**	-	-	8	8	5	6
	I	-	-	0	0	3	0
	R	-	-	0	0	0	2
	Samtals	8					
2014	**S**	-	-	15	15	15	7
	I	-	-	0	0	0	0
	R	-	-	0	0	0	8
	Samtals	15					

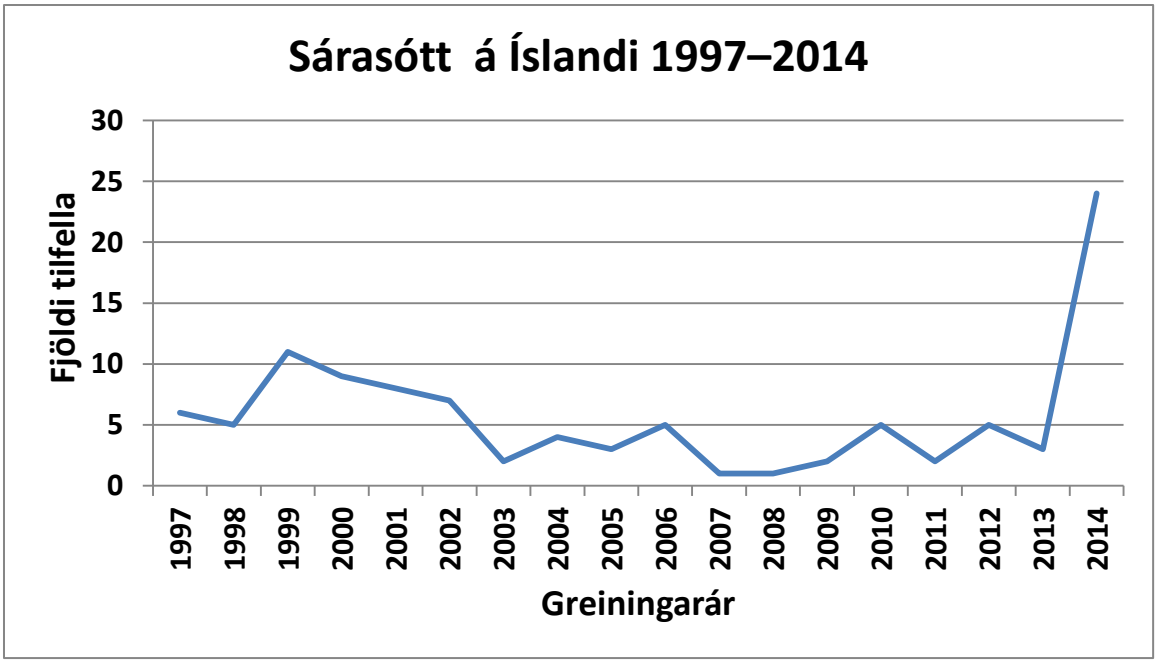
Lekandi er ýmist greindur með ræktun og/eða *Polymerase Chain Reaction* (PCR), en PCR byggir á greiningu á erfðaefni bakteríunnar. Með þeirri greiningaraðferð er þó ekki hægt að kanna sýklalyfjanæmi. Upplýsingar um sýklalyfjanæmi fást eingöngu úr sýnum sem send eru í ræktun en einungis þannig er hægt að tryggja að sjúklingurinn fái viðeigandi meðferð og fylgjast með faraldsfræði sýklalyfjanæmis hjá lekandabakteríunni hér á landi.

Sárasótt

Sárasótt var ekki algeng á Íslandi á 20. öldinni ef undan eru skilin árin sem seinni heimstyrjöldin stóð yfir. Árið 1945 hófst meðferð með penisillíni við sárasótt og dró þá umtalsvert úr útbreiðslu sjúkdómsins[11].



Síðastliðinn áratug greindust 1–7 einstaklingar árlega með sárasótt á Íslandi. Sýkingin virtist ekki vera útbreidd hér á landi því að í flestum tilfellum mátti rekja uppruna smitsins til útlanda. Skyndileg aukning varð á sárasóttartilfellum hér á landi árið 2014. Á undanförnum áratug hefur sárasóttartilfellum fjölgað í Vestur-Evrópu[12], sem stafar af auknum fjölda sýkinga meðal karla sem stunda kynlíf með körlum. Á árunum 2008–2010 hægðist á þeirri þróun en árið 2011 fjölgaði tilfellum aftur í Þýskalandi, einkum meðal karla sem stunda kynlíf með körlum[13].

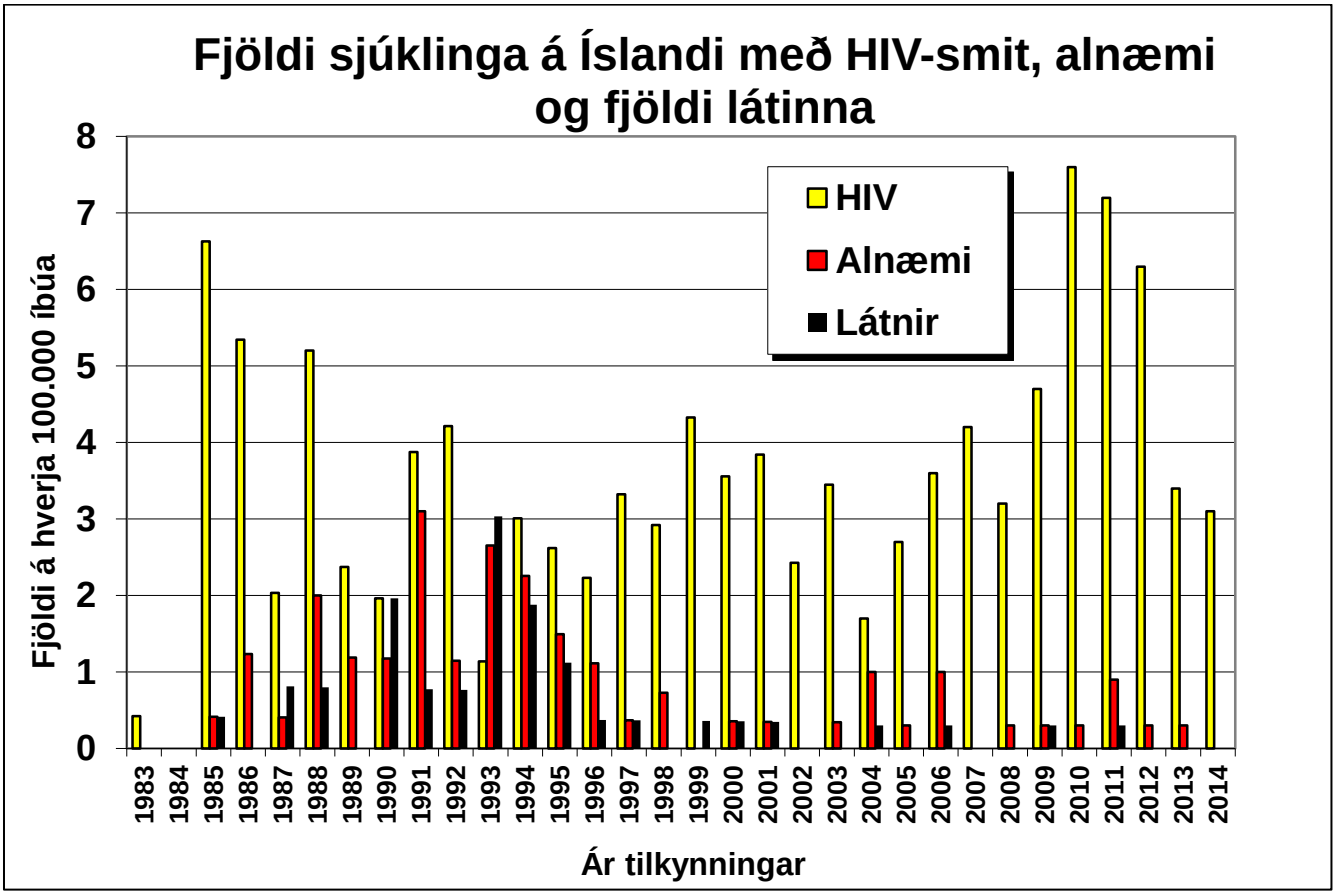

Sárasótt á Íslandi 1997–2014
Fjöldi tilfella
30
25
20
15
10
5
0
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Greiningarár

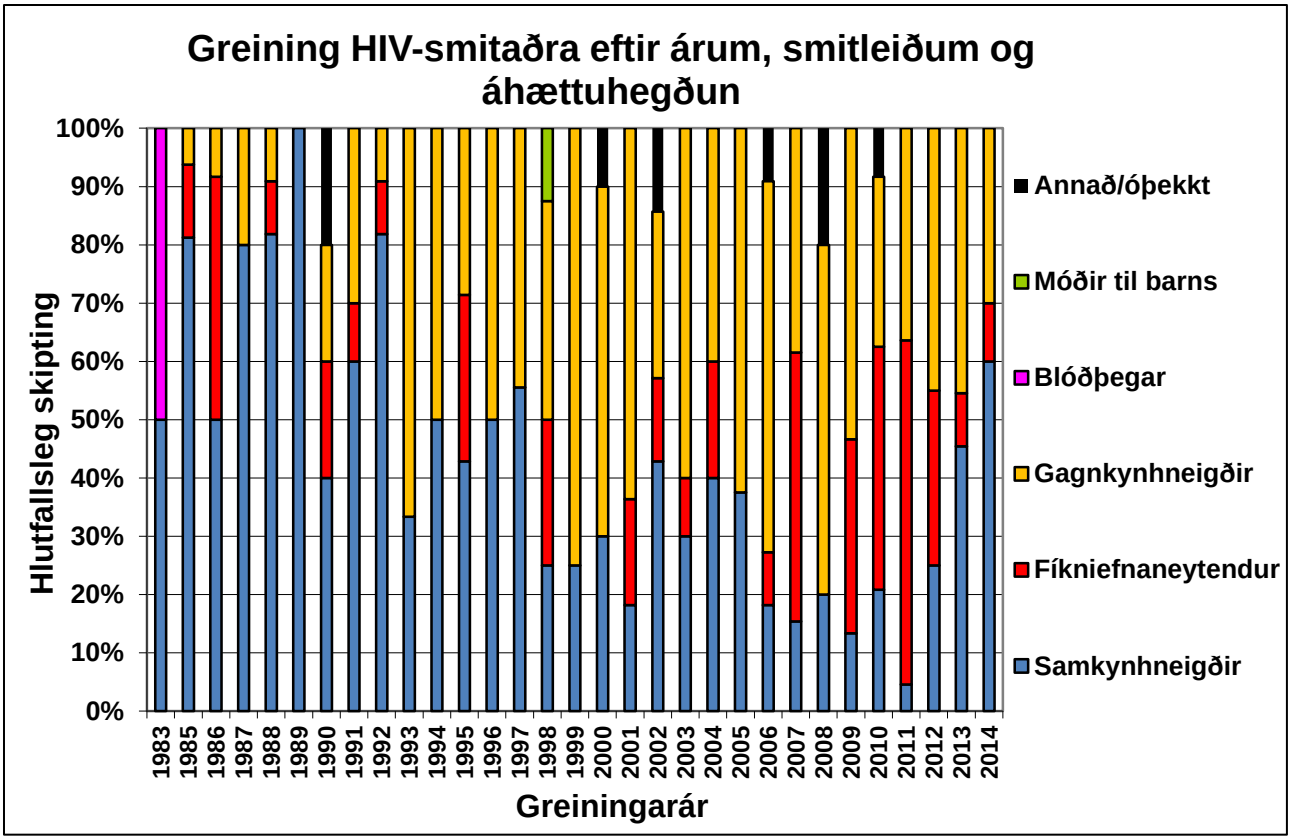
HIV/alnæmi

Frá upphafi alnæmisfaraldursins fyrir 30 árum höfðu í árslok 2014 greinst 331 einstaklingur með HIV-sýkingu. Af þeim voru 122 gagnkynhneigðir og 122 samkynhneigðir karlar með áhættuhegðun í kynlífi, 63 voru með sögu um misnotkun fíkniefna með sprautum og nálum og 14 voru með aðra áhættuþætti.

Aukningin sem varð á nýgengi HIV-sýkinga á árunum 2008–2012 tengdist hópsýkingu meðal fíkniefnaneytenda. Einkennandi fyrir þessa aukningu á sýkingum var tiltölulega hár meðalaldur, eða 34 ár, og náin tengsl milli hinna smituðu. Annað einkenni þessarar hópsýkingar var mikil notkun Rítalíns (*methylphenidate*) sem sprautað er í æð.

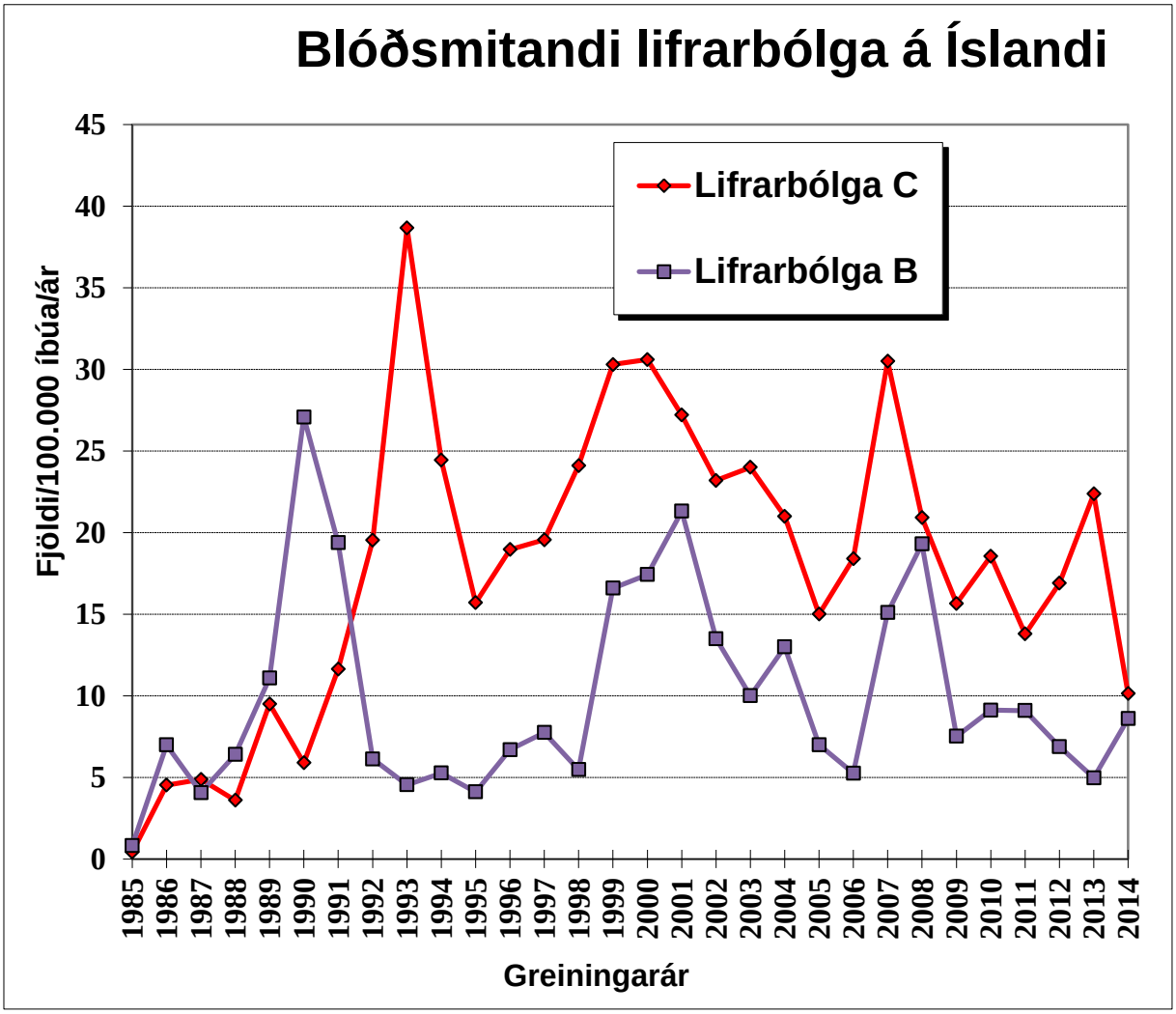
Á árunum 2013–2014 hefur hlutur samkynhneigðra aukist á ný meðal HIV-sýktra en mjög dregið úr fjölda með sögu um misnotkun fíkniefna í æð.




Greining HIV-smitaðra eftir árum, smitleiðum og áhættuhegðun
Hlutfallsleg skipting
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1983
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Greiningarár
Annað/óþekkt
Móðir til barns
Blóðþegar
Gagnkynhneigðir
Fíkniefnaneytendur
Samkynhneigðir

Lifrarbólgur B og C

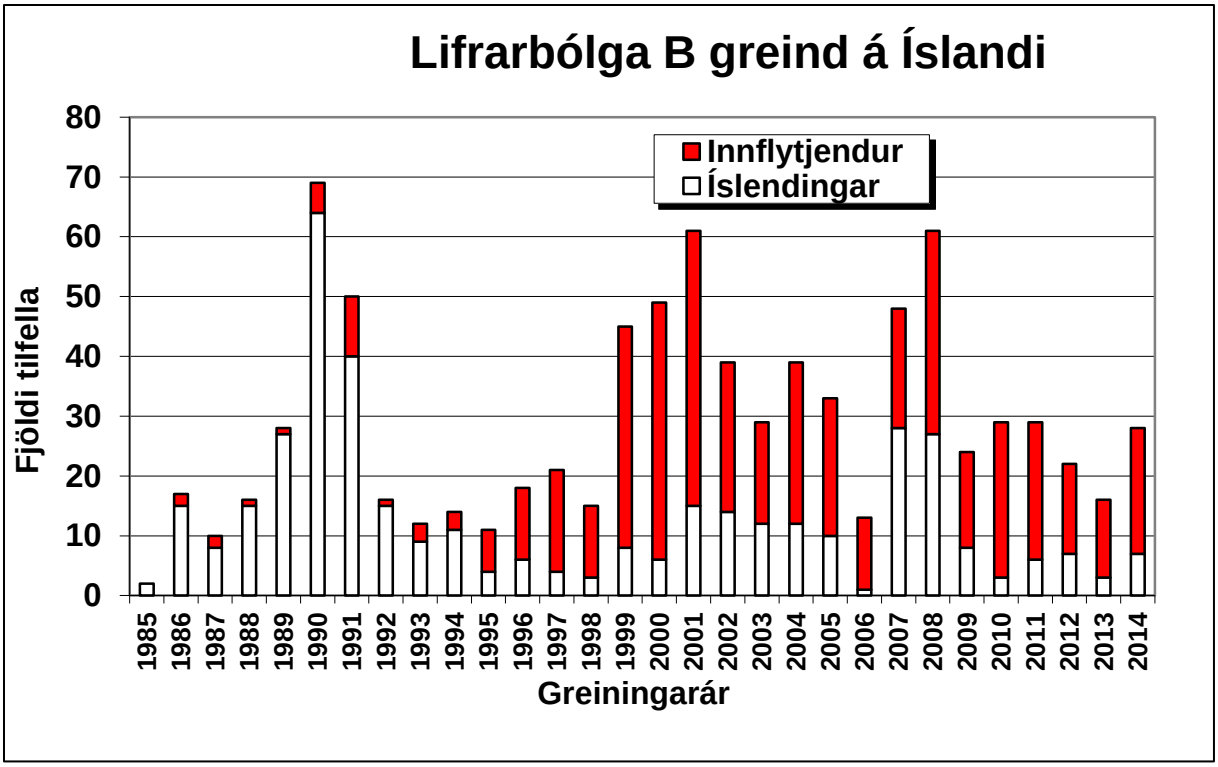
Nýgengi greindra tilfella af blóðsmitandi lifrarbólgu B og C hefur verið á undanhaldi undanfarin fjögur ár. Umtalsverður hluti þeirra sem greindust með lifrarbólgu B voru innflytjendur til landsins, en þeim hafði fækkað nokkuð undanfarin ár. Fíkniefnaneysla með sprautum og nálum er megin smitleið lifrarbólgu C. Ekki er ljóst hvað olli fækkun tilfella hvað þann sjúkdóm varðar en hugsanlegt er að forvarnastarf skili árangri.



Lifrarbólga B

Niðurstöður rannsókna benda til þess að lifrarbólga B hafi verið landlæg á Íslandi alla síðustu öld hið minnsta[14]. Um 5,4 % þjóðarinnar reyndust hafa mótefni gegn lifrarbólgu B (anti-HBc) og 0,17% voru með virka sýkingu árið 1987 (HBsAg-jákvæð).

Eftir að kerfisbundnar greiningar hófust á sýkingu af völdum lifrarbólgu B hér á landi 1985 var miðað við greiningu á virkri sýkingu. Ekki gerður greinarmur á bráðri sýkingu annars vegar og viðvarandi sýkingu hins vegar. Þumalfingursregla er að flestir Íslendinga sem greinast hafa haft bráða sýkingu, en innflytjendur, sem flestir eru ættaðir frá Suð-Austur Asíu, eru með viðvarandi sýkingu. Á árunum 1989–1991 og 2007–2008 greindust óvenju margir Íslendingar með lifrarbólgu B (sjá mynd) en þá aukningu mátti rekja að mestu til fíkniefnaneyslu með sprautum og nálum.



Samkvæmt sjúkdómsskilgreiningu ESB (sjá viðauka) skal greina bráða lifrarbólgu með jákvæðri anti-HBc IgM mótefnamælingu ásamt klínískum einkennum. Við neikvæða anti-HBc IgM mælingu flokkast sýkingin sem langvinn. Þegar klínískar upplýsingar benda til að sýkingin sé langvinn er anti-HBc IgM sjaldnast mælt, og flokkast hún þá samkvæmt skilgreiningu ESB sem óviss, en skv. klínískum upplýsingum er hún að öllum líkindum langvinn. Árlega greinast um 2–3 einstaklingar með bráða lifrarbólgu B. Langflestir þeirra sem greinast með sjúkdóminn eru útlendingar sennilega með langvinna sýkingu af erlendum uppruna.

Tafla. Flokkun lifrarbólgu B á Íslandi frá 2011–2014 samkvæmt skilgreiningu Evrópusambandsins

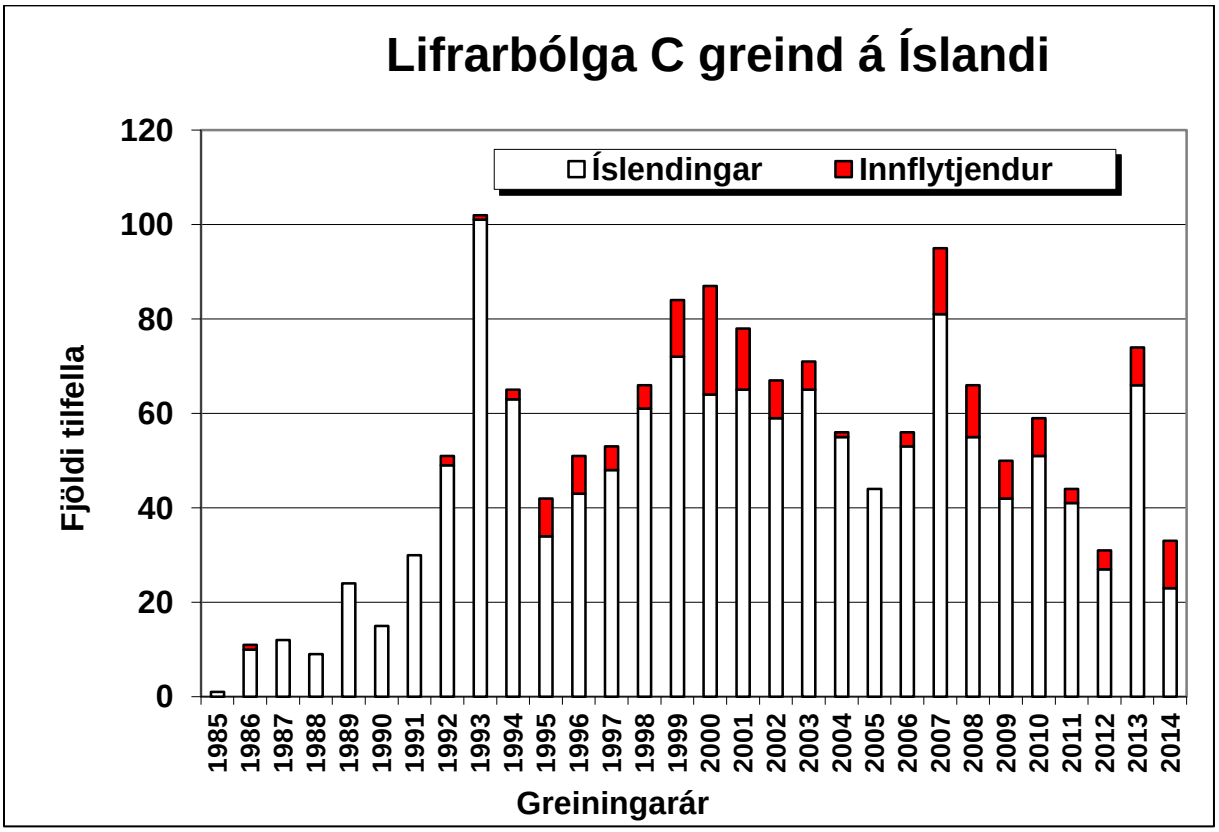
	Bráð	Langvinn	Óviss	Samtals
2011	2	0	19	21
2012	3	2	15	20
2013	2	0	14	16
2014	3	5	20	28

Lifrarbólga C

Lifrarbólga C (HCV) barst til landsins um miðjan 9. áratug síðustu aldar með fíkniefnaneyslu um æð. Hélst faraldurinn af völdum lifrarbólgunnar í hendur við fíkniefnafaraldurinn.

Þegar mótefnamælingar hófust í blóðbankanum í september 1992 greindist HCV-smit hjá 8 blóðgjöfum sem höfðu neytt fíkniefna um æð, en 6 af þeim höfðu áður gefið blóð. Hægt var að rekja smit til 27 blóðþega, en 23 af þeim höfðu smitast[15]. Ekki fundust aðrir smitaðir fíkniefnaneytendur sem gefið höfðu blóð. Sóttvarnalækni er ekki kunnugt um annað en eitt tilfelli af smiti af völdum blóðgjafar frá árunum fyrir 1992 fyrir utan þau tilfelli sem áður eru nefnd og tengdust prófunum frá 1992. Það tengist íslenskum manni sem varð fyrir alvarlegu slysi í Bandaríkjunum 1983 og þurfti á miklum blóðgjöfum að halda þar í landi og virðist hann hafa smitast af HCV við það. Eftir heimkomuna gaf hann einu sinni blóð sem leiddi til þess að blóðþegi smitaðist.

Sýking af völdum lifrarbólgu C verður viðvarandi í um 70% tilvika. Afar sjaldgæft er að sýking af völdum þessarar veiru valdi bráðum einkennum. Því er það þannig að hver sá sem greinist með kjarnasýru veirunnar (virka sýkingu) eða með mótefni gegn veirunni er talinn sýktur samkvæmt skráningu.

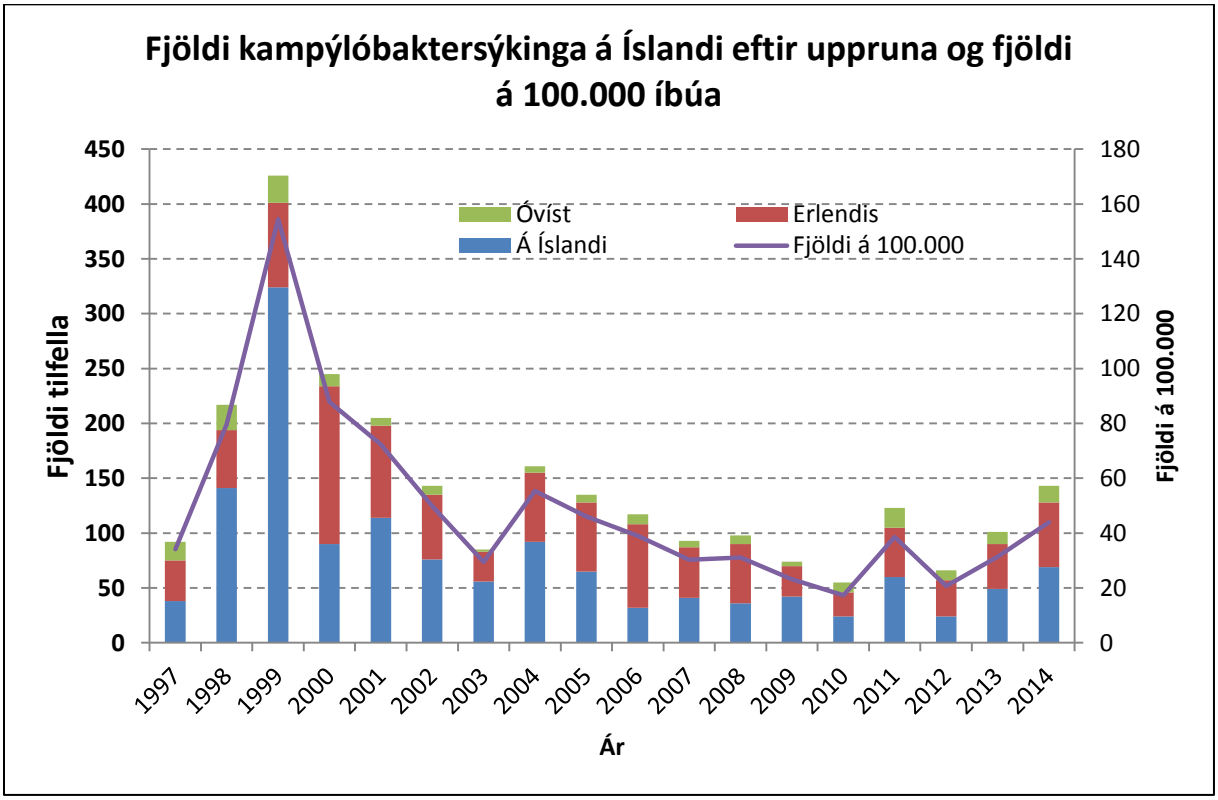


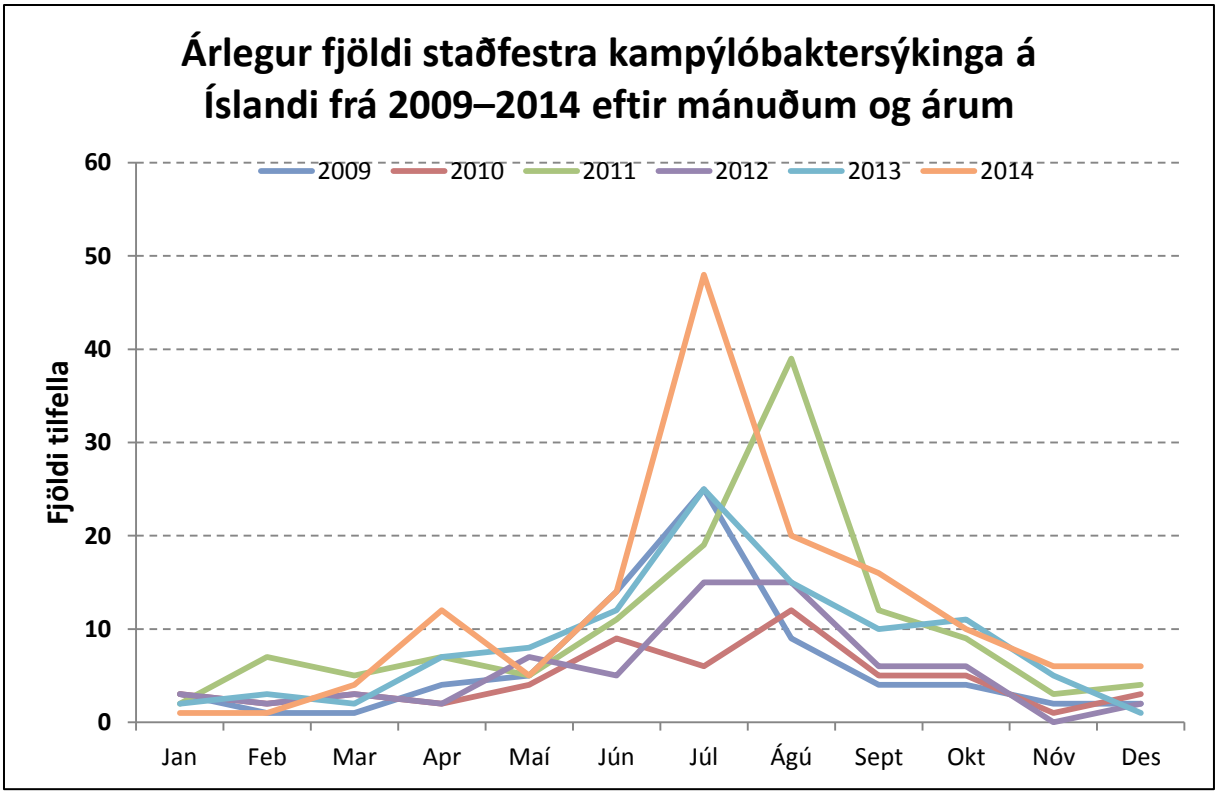
Sýkingar í meltingarvegi

Kampýlóbaktersýking

Fleiri kampýlóbaktersýkingar greindust árið 2014 samanborið við árin á undan. Aukningin sást bæði í sýkingum af innlendum og erlendum uppruna. Ónæmi fyrir sýklalyfjum, erythromycin og ciprofloxacin er mjög algengt við sýkingar sem eiga uppruna sinn erlendis. Þeir kampýlóbakterstofnar sem valda innlendum sýkingum hafa langoftast verið næmir fyrir bæði erythromycin og ciprofloxacin. En árið 2011 var hins vegar töluvert um ónæmi fyrir ciprofloxacini meðal innlendra bakteríustofna, sem hefur dregið úr að nýju, svo nú eru langflestir innlendir kampýlóbakterstofnar fullnæmir fyrir ciprofloxacini.

Reglubundnar árlegar sveiflur með fleiri sýkingar yfir sumarmánuðina samanborið við aðra mánuði ársins eru vel þekktar, enda var aukningin árin 2011 og 2012 mest í júlí og ágúst, sjá mynd. Helstu skýringar á þessum árlegu sveiflum eru m.a. ófullnægjandi grillaðar fuglaafurðir, krossmengun í önnur matvæli, tímabundin dvöl úti á landi með neyslu yfirborðsvatns á ferðalögum og í sumarbústöðum.





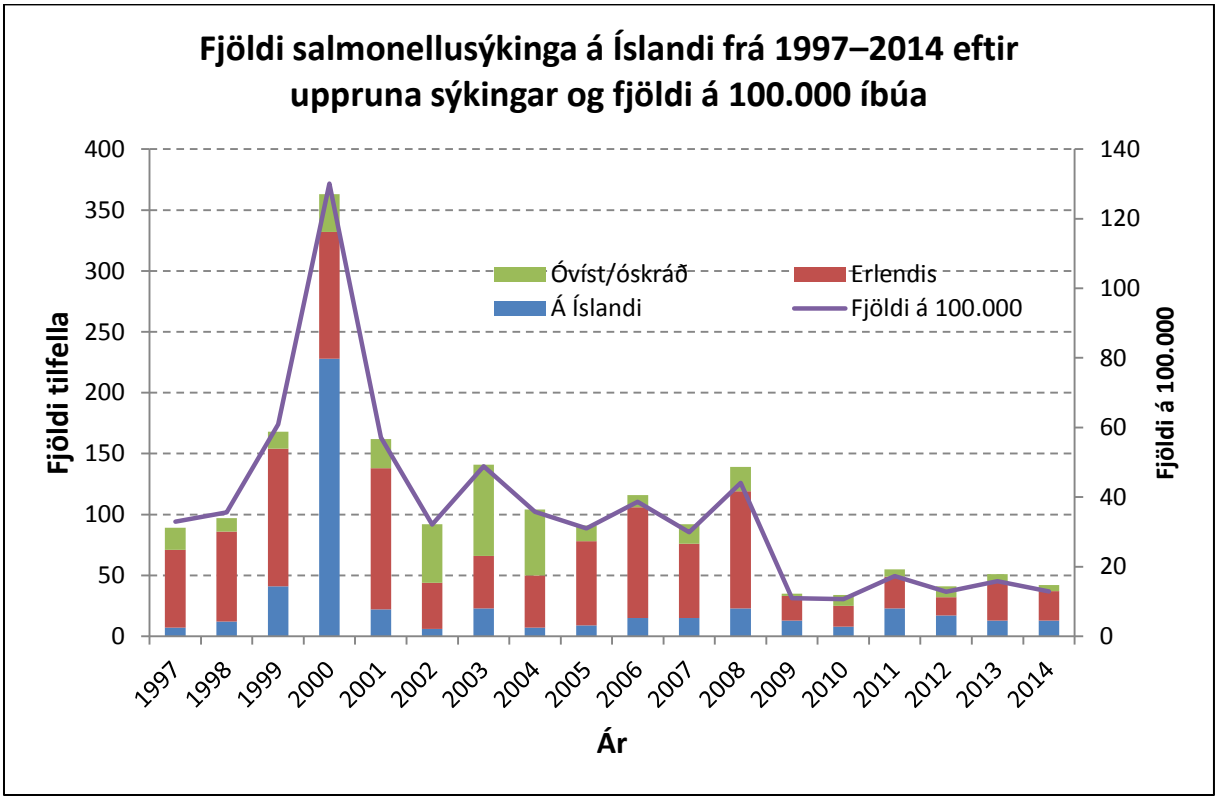
Tafla. Ciprofloxacin næmi á innlendum kampýlóbakter á Íslandi frá 2007–2014

Ár	R	S	Upplýsingar vantar
2007	5	35	1
2008	1	34	1
2009	0	42	0
2010	0	24	0
2011	14	46	0
2012	7	17	0
2013	3	46	0
2014	4	65	0

Salmónellusýking

Árið 2014 var salmonella staðfest hjá 43 einstaklingum sem er svipað borið saman við síðastliðin ár. Oft má rekja uppruna sýkinganna til útlanda, en stöku sýkingar eru af innlendum uppruna. Árið 2009 dró verulega úr salmonellusýkingum af erlendum uppruna sem kann að skýrast af færri ferðalögum Íslendinga til útlanda í kjölfar efnahagskreppunnar.

Ekki varð vart við neinar hópsýkingar af völdum salmonellu á árunum 2013 og 2014.



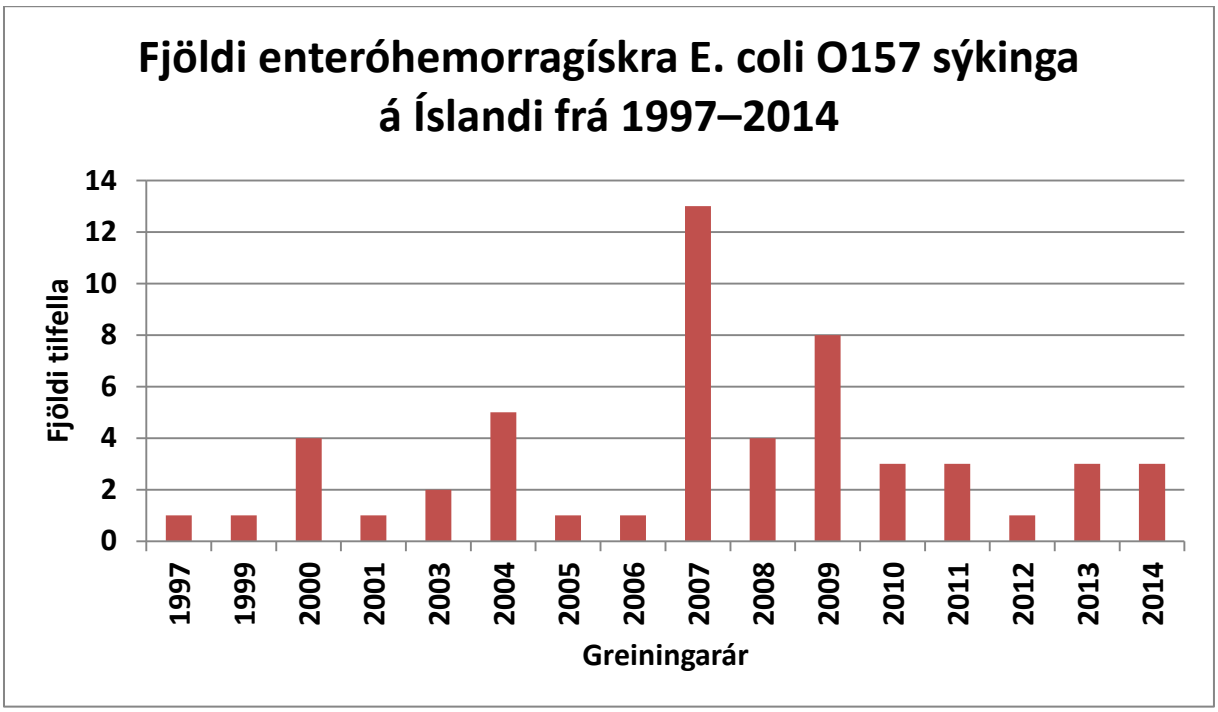
Algengustu sermisgerðirnar hér á landi eru *Salmonella Typhimurium* og *Salmonella Enteritidis.* Eftirfarandi sermisgerðir hafa greinst hér á landi frá 2007–2014.

Salmonella á Íslandi eftir sermisgerð frá 2007–2012

Sermisgerð	2007	2008	2009	2010	2011	2012	2013	2014
S. Enteritidis	3	2	4	1	5	2	1	2
S. Typhimurium	1	7	3	0	4	5	4	5
S. Agona	0	0	0	0	0	2	0	0
S. Brandenburg	0	0	0	2	0	0	0	0
S. Brezany	0	0	0	0	0	0	0	1
S. Salamae	0	0	0	0	0	0	1	0
S. Give	0	1	0	0	0	0	0	0
S. Haifa	0	0	0	0	6	0	0	0
S. Infantis	0	0	0	0	0	0	1	1
S. Kalumburu	0	0	0	0	0	1	0	0
S. Kentucky	0	0	0	0	1	0	0	0
S. Mbandaka	0	0	0	0	0	0	0	0
S. Montevideo	1	0	2	1	0	0	0	0
S. Napoli	0	0	0	0	0	2	0	1
S. Newport	1	0	0	0	0	0	0	0
S. paratyphi B	0	1	0	0	0	0	0	0
S. Paratyphi B var. Java	1	0	0	0	3	3	0	0
S. Poona	0	2	0	0	0	0	0	0
S. Reading	0	0	0	1	0	0	0	0
S. Saintpaul	3	0	0	1	0	0	1	0
S. Senftenberg	0	0	0	0	0	0	0	0
S. Shubra	0	1	0	0	0	0	0	0
S. species	5	7	2	2	3	2	5	1
S. Stanley	0	2	2	0	1	0	0	1
S. Takoradi	0	0	0	0	0	0	0	1

E. coli O157

Árið 2014 greindust þrír einstaklingar með sýkingu af völdum enteróhemórragísks *E. coli*, þar af fengu tveir HUS (*Hemolytic uremic syndrome*), sem er sjaldséð hér á landi. Engin tengsl voru á milli sýkinganna og ekki tókst að finna uppruna smitsins. Árin 2007 og 2009 komu upp litlar hópsýkingar af völdum þessarar bakteríu, en ekki tókst að rekju uppruna sýkingarinnar með vissu.



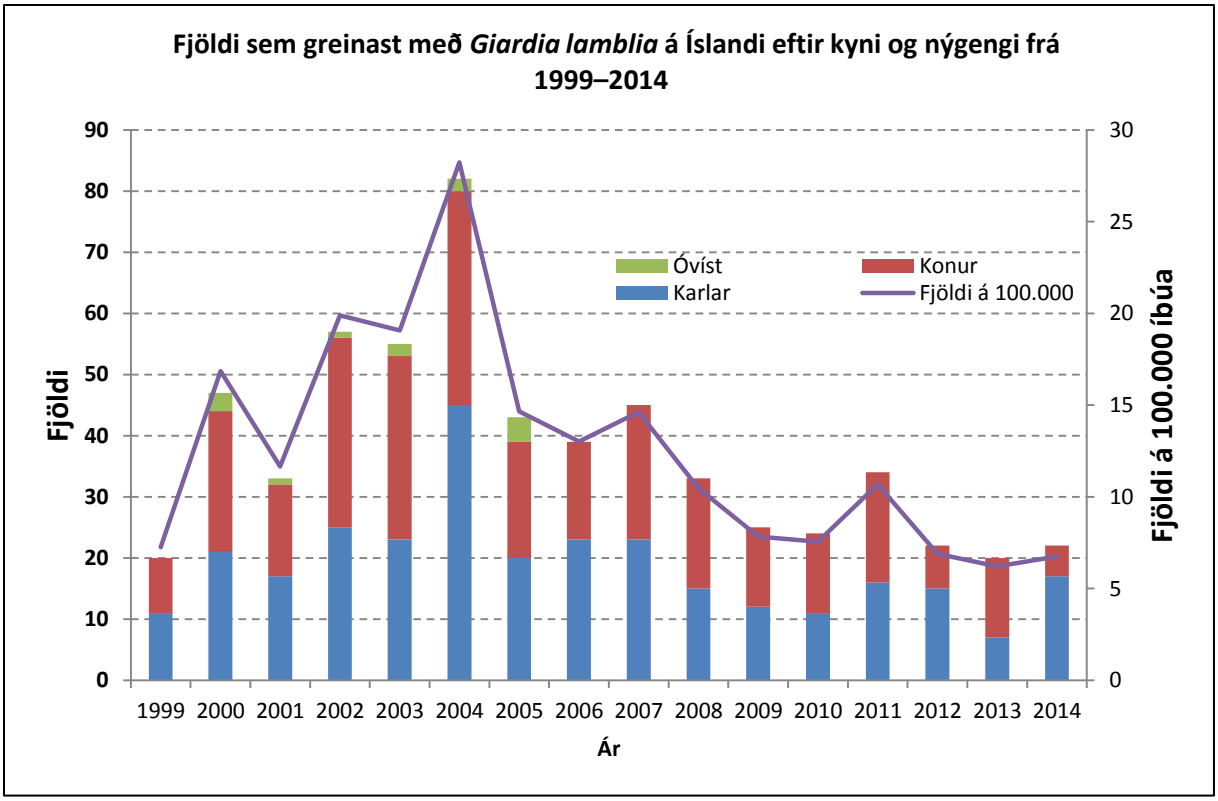
Aðrar sýkingar í meltingarvegi

Bótúlíneitrun

Fyrstu sögur sem fara af bótúlíneitrun á Íslandi eru frá 1949 en þá veiktust fjórir menn í Hafnarfirði og einn þeirra lést eftir að hafa borðað súrsað dilkakjöt[16]. Þessu næst var lýst hópsýkingu af völdum bótúlíneitrunar hjá fjórum einstaklingum í fjölskyldu frá Skagafirði árið 1981 vegna sýkingu í görn sem leiddi til sjúkrahúsvistar 10 ára gamallar stúlku með einkenni sjúkdómsins. Þá veiktist heimilisfaðirinn með síðkomnum einkennum sem samræmdust garnabótúlíneitrun sem þekkt er í ungabörnum. Ekki tókst að rekja uppruna smitsins sem orsakaðist af *Clostridium botulinum* af gerð B[17]. Síðustu þekktu tilfellin af garnabótúlín eitrun hér á landi greindust í Vestur-Húnavatnssýslu 1983 hjá móður og syni hennar. Tókst að rækta sýkilinn sem einnig var af gerð B frá sýrðri blóðmör og lifrarpylsu sem þau neyttu[18]. Allir sem veiktust af bótúlíneitrunum náðu sér að fullu nema sá sem lést árið 1949.

Giardíusýkingar

Giardíusýkingar eru nokkuð algengar hér á landi. Síðastliðin ár hefur gíardíusýking verið staðfest hjá 20–40 einstaklingum á ári hverju. Líklega er stór hluti sýkinganna af innlendum uppruna. Sýkingin er algengust í börnum. Árið 2004 var fjöldi sýkinga í hámarki og við nánari rannsókn sást að flestar sýkingarnar mátti rekja til smits manna á milli sem var í tengslum við leikskóla og dagmæður.

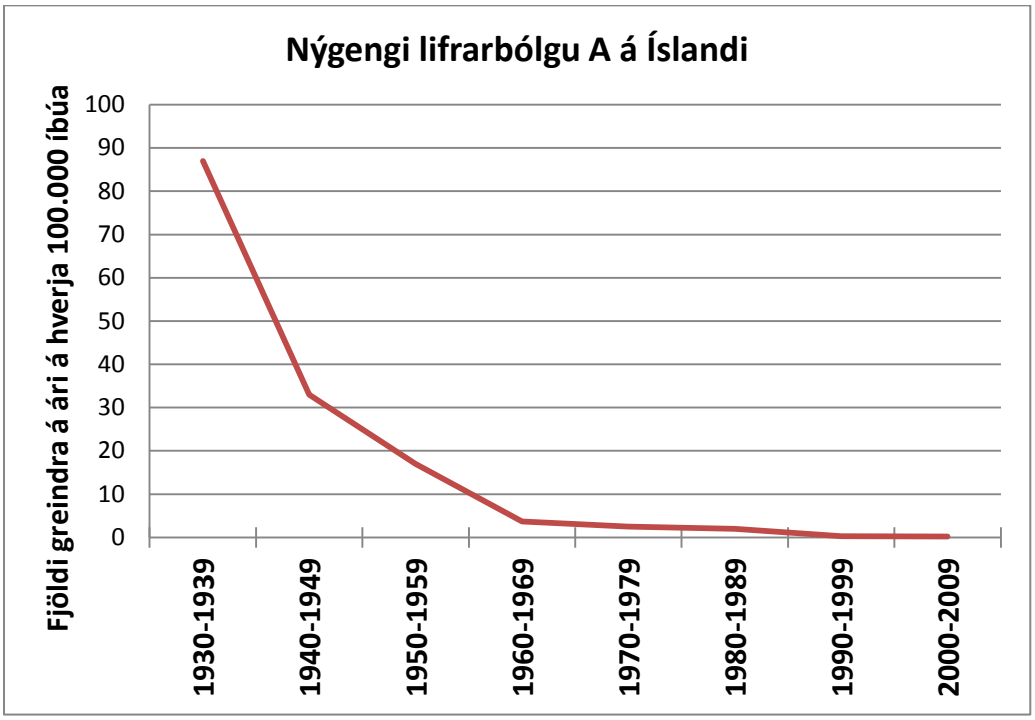


Fjöldi sem greinast með *Giardia lamblia* á Íslandi eftir aldri frá 1999–2014

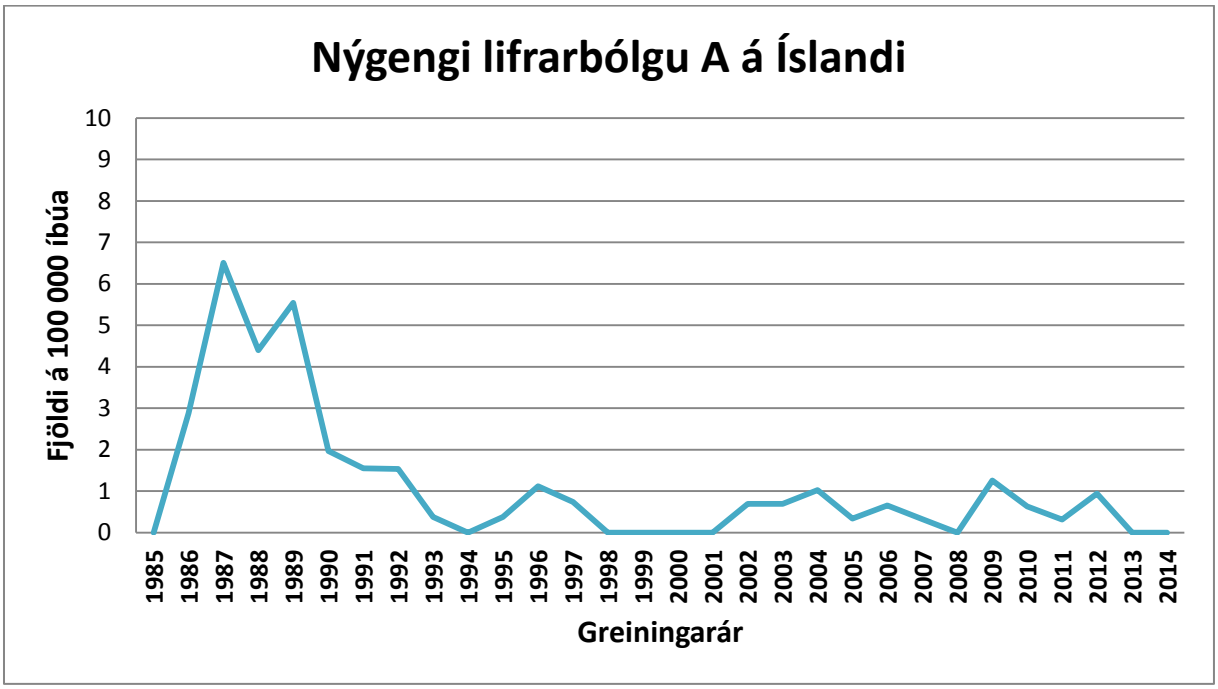
Aldursbil í árum	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
0-4	1	4	3	10	8	13	7	7	3	4	3	2	3	1	2	2
5-9	1	0	1	3	3	7	1	3	4	2	1	1	1	1	1	2
10-14	0	1	1	2	0	1	1	0	3	2	1	1	0	0	0	1
15-24	1	1	1	0	0	1	1	0	0	0	0	1	2	0	1	0
25-34	0	3	2	2	3	2	1	1	2	1	1	1	1	1	1	2
35-44	1	2	2	2	1	3	1	1	1	1	1	1	1	1	0	0
45-54	1	2	1	2	1	2	1	1	1	0	0	1	1	1	0	0
≥ 55	1	1	0	1	1	0	0	0	0	0	1	0	0	0	0	0
Samtals	6	14	11	22	17	29	13	13	14	10	8	8	9	5	5	7

Lifrarbólga A

Lifrarbólga A er nú orðið sjaldgæf á Íslandi. Þessi sjúkdómur var mjög algengur fram á miðja 20. öld en þá dró mjög úr nýgengi hans[19]. Sýni, sem tekin voru 1987 úr einstaklingum sem voru 60 ára og eldri, sýndu að 65% þeirra voru með mótefni gegn lifrarbólgu A. Mótefni voru fátíð hjá þeim sem voru undir 50 ára aldri (1–3%)[20].



Á árinu 2011 greindist 1 tilfelli en 3 tilfelli greindust árið 2012. Uppruni var óþekktur en trúlega af erlendum toga. Árin 2013 og 2014 greindist enginn með lifrarbólgu A.



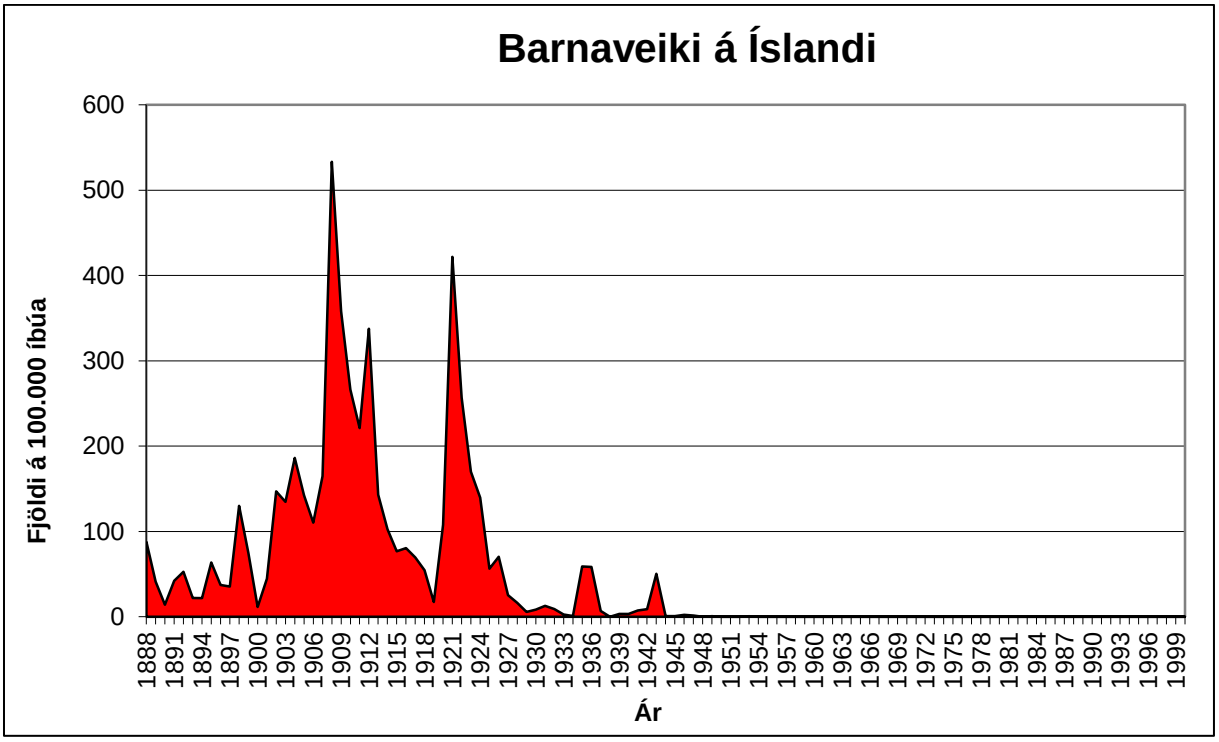
Sígellusýkingar

Sígellusýking**,** eða blóðkreppusótt, greinist sjaldan hér á landi um þessar mundir. Ekkert tilfelli greindist árið 2013 en tvö tilfelli greindust árið 2014, bæði sýkt erlendis.

Sjúkdómar sem bólusett er gegn

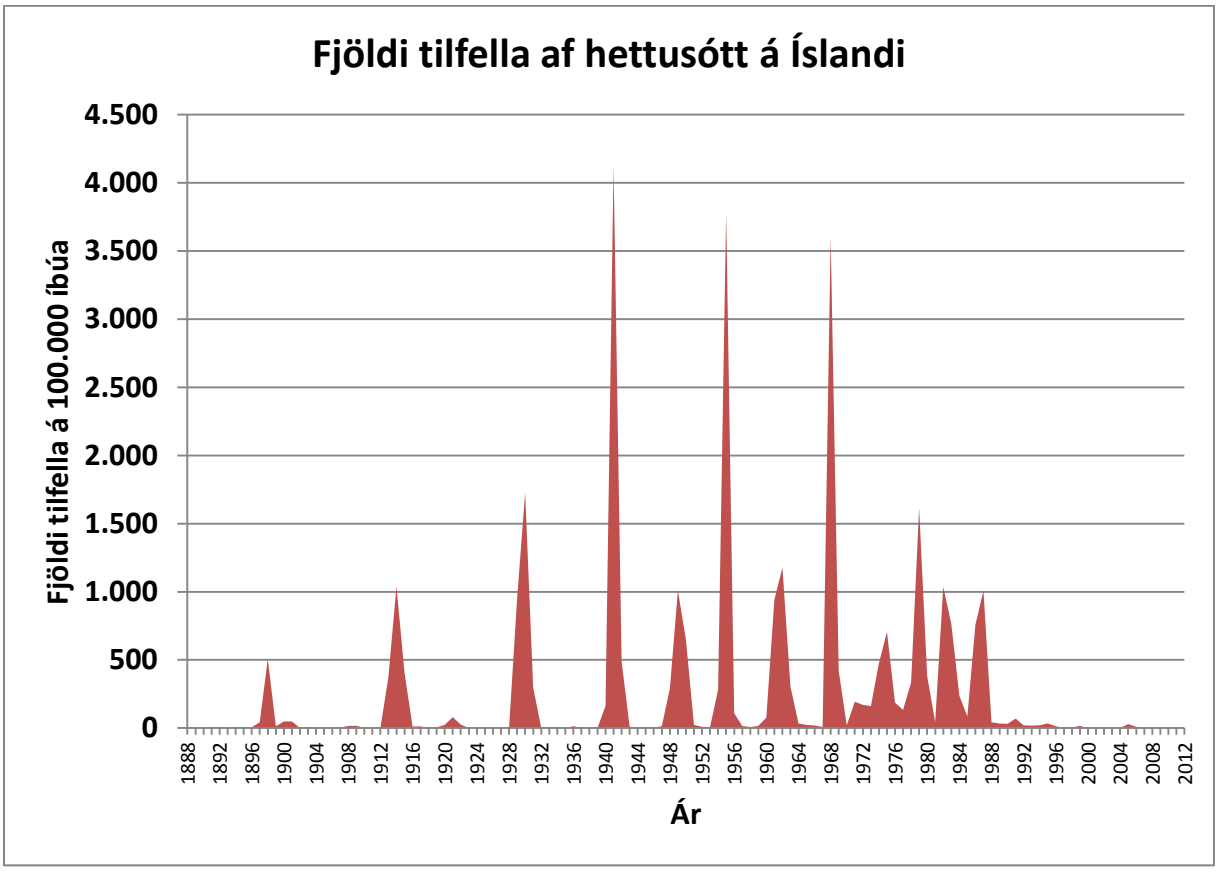
Barnaveiki

Barnaveiki var alvarlegt heilsufarslegt vandamál á Íslandi þar til bólusetning gegn sjúkdómnum hófst 1934[21]. Var þessum sjúkdómi endanlega bægt frá landinu um miðja 20. öldina, sjá mynd.



Hettusótt

Eftir að almenn bólusetning hófst hér á landi með þrígildu bóluefni gegn mislingum, rauðum hundum og hettusótt fjaraði sjúkdómurinn smám saman út og var nánast horfinn í lok 20. aldar.

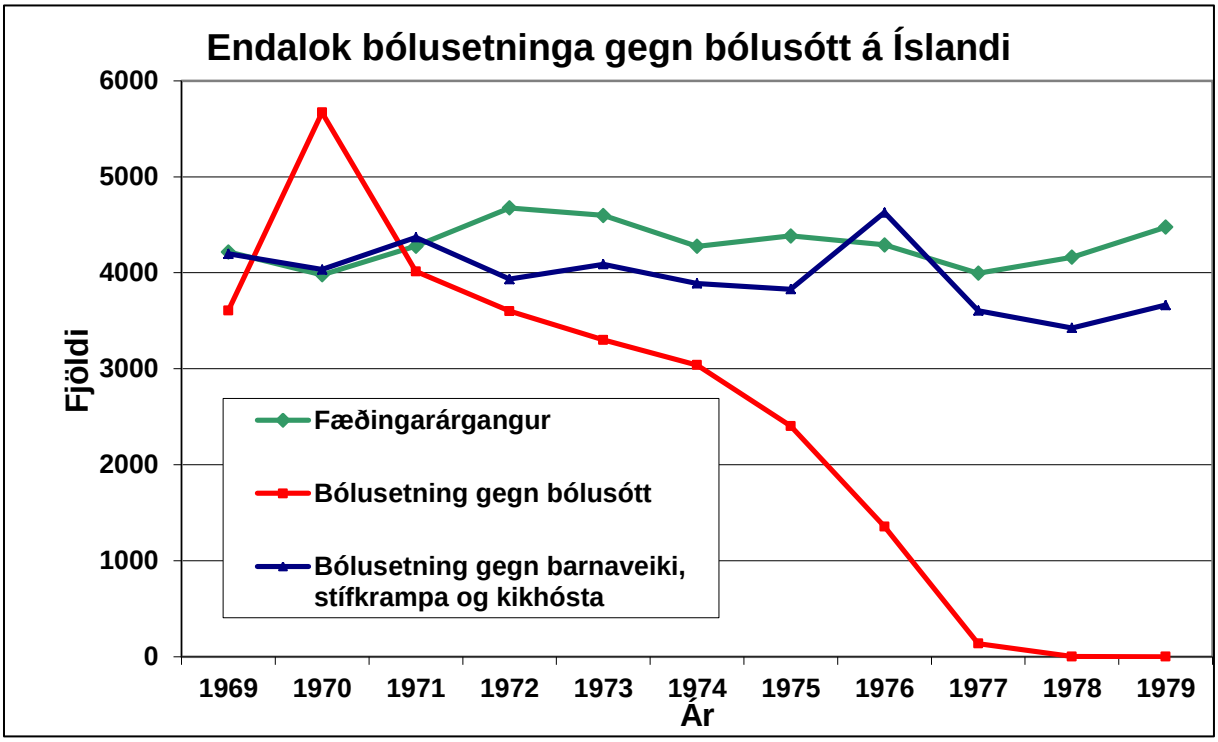


Í lok maí 2005 braust út hópsýking af völdum hettusóttar hér á landi en hingað til lands barst hettusóttin frá Englandi. Hópsýkingin náði hámarki hér á landi í desember 2005, en það árið greindust 85 einstaklingar. Flestir sem greindust voru 20–24 ára. Því ákvað sóttvarnalæknir að hvetja alla einstaklinga fædda á árunum 1981 til og með 1985 að láta bólusetja sig gegn sjúkdómnum ef þeir höfðu ekki verið bólusettir áður. Dró þá aftur verulega úr sjúkdómnum og árin 2011 til 2014 greindust engin tilfelli fyrir utan eitt sem greindist 2013.

Bólusótt

Bólusótt er án efa sá smitsjúkdómur sem valdið hefur hvað mestum mannskaða á Íslandi, en hann reið yfir landið á öldum áður með jöfnu millibili tvisvar til þrisvar á öld og hafði alvarlegar afleiðingar í för með sér. Bólusóttin 1707–1709, sem kölluð var stórabóla, lék þjóðina grátt enda féll hátt í þriðjungur þjóðarinnar og flestir yngri en 50 ára. Árið 1796 hóf Edward Jenner kúabólusetningu gegn bólusótt, en hann sýndi fram á að kúabóla verndaði gegn bólusótt í mönnum og fjallaði fræðilega um það. Árið 1802 ákváðu dönsk heilbrigðisyfirvöld með kansellíbréfi að kúabólusetning skyldi tekin upp hér á landi og 1805 komu fyrstu reglur um framkvæmd þeirrar bólusetningar[22]. Í sögulegu samhengi hefur kúabólusetning verið eina skyldubólusetningin hér á landi.

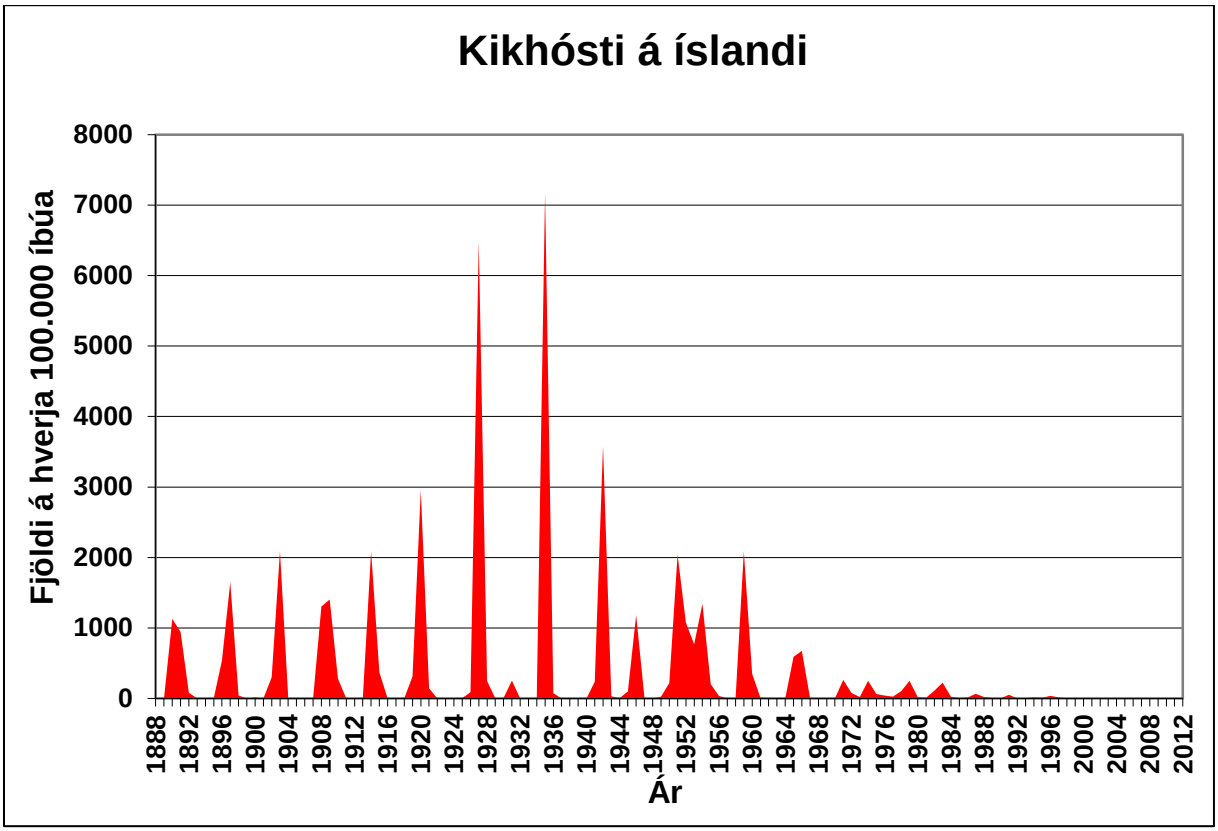
Verulega dró úr bólusetningum gegn bólusótt á Íslandi á 8. áratug 20. aldar. Skyldubólusetning var afnumin hér á landi með lögum um ónæmisaðgerðir frá 1978[23] þegar tekist hafði að útrýma þessum sjúkdómi í heiminum og var þeim þá einnig endanlega hætt hér á landi[24].



Árið 1970 virðist hafa verið gert sérstakt átak í bólusetningum gegn bólusótt en ekki er fjallað um það í heilbrigðisskýrslum Landlæknisembættisins. Líklegt má telja að hópsýking af völdum bólusóttar sem varð á sjúkrahúsi í Meschede í Vestur-Þýskalandi árið 1970[25] hafi leitt til aukinna bólusetninga gegn bólusótt hér á landi.

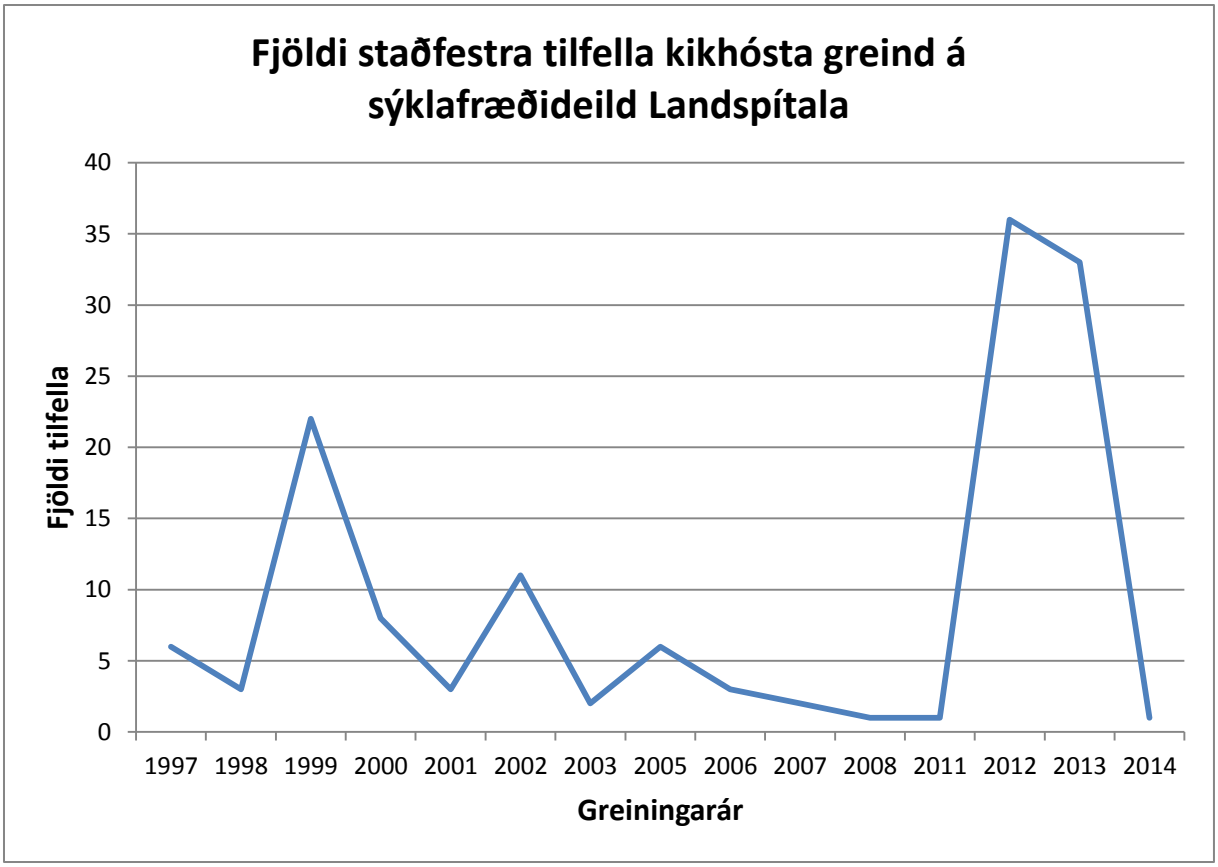
Kikhósti

Farið var að skrá fjölda tilfella af kikhósta í lok 19. aldar. Gekk sjúkdómurinn í faröldrum á Íslandi á 6–7 ára fresti og stóð jafnan yfir í 6–12 mánuði. Dánartíðnin af völdum kikhóstans var há í byrjun 20. aldar hjá yngstu börnunum en smám saman dró úr henni, frá 6% niður í 2% í faraldrinum 1959–60[26]. Eftir það hefur enginn látist úr kikhósta.



Bólusetning gegn kikhósta hófst á Íslandi 1927 með heilfrumubóluefni en erfitt var að meta árangurinn. Það má rekja til þess að bóluefnið var unnið úr kikhóstabakteríum eftir að faraldur var hafinn og því örðugt að stöðva útbreiðsluna. Árið 1942 var gerð rannsókn á virkni bóluefnisins hér á landi og birtust niðurstöður hennar í *Læknablaðinu*[27] og síðar í bandarísku læknablaði en þær bentu til að virkni bóluefnisins væri 87%[28]. Frá 1950 var öllum börnum boðin bólusetning gegn kikhósta en það var ekki fyrr en eftir faraldurinn 1959, sem reyndist þungur, að bólusetning varð almenn. Eftir það dró umtalsvert úr fjölda tilfella en styttra varð á milli lítilla faraldra sem komu á 3–5 ára fresti þar til þeir nánast hurfu. Heilfrumubóluefni var notað hér á landi þar til bólusetning með frumulausu bóluefni hófst árið 2000.

Á árunum 2012–2013 brast á lítill faraldur af kikhósta. Af einstaklingum með staðfestan kikhósta voru 12 yngri en 6 mánaða og tveir á aldrinum 6–12 mánaða. Fjórtán einstaklinganna voru fullbólusettir gegn kikhósta en 9 voru óbólusettir. Enginn lést af völdum kikhósta á árinu 2012–2014.

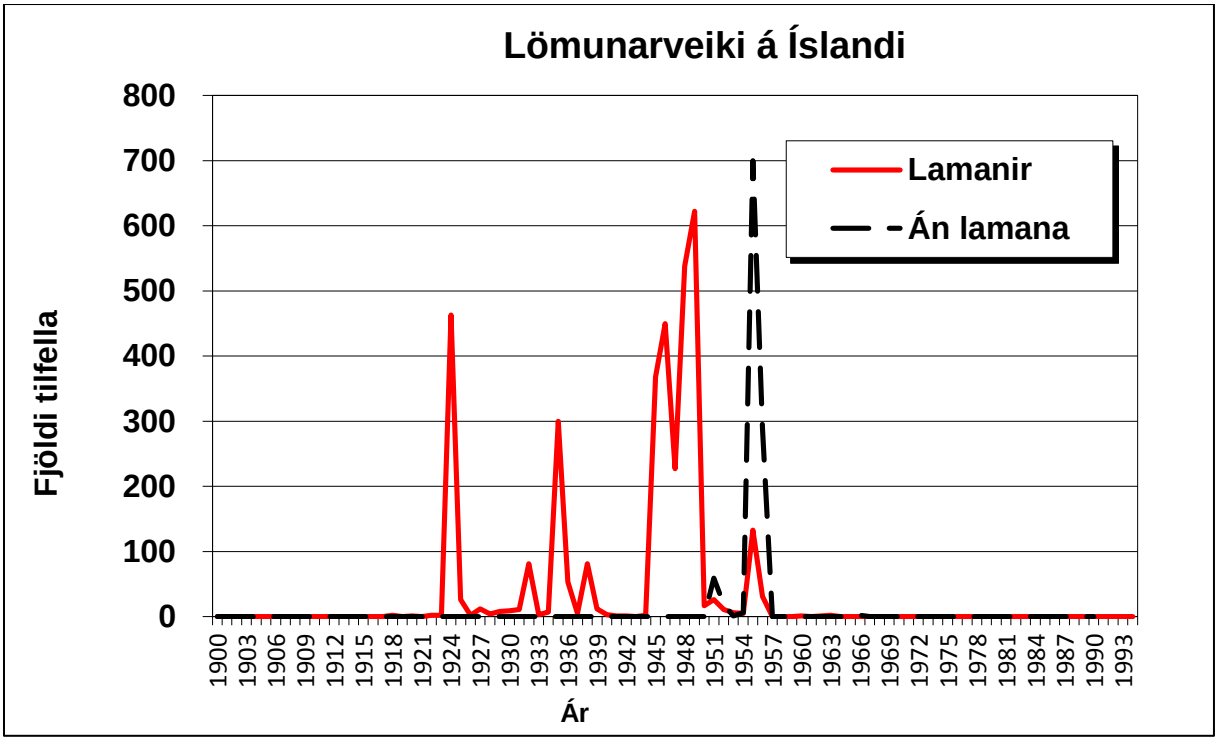

Fjöldi staðfestra tilfella kikhósta greind á sýklafræðideild Landspítala
Fjöldi tilfella
40
35
30
25
20
15
10
5
0
1997 1998 1999 2000 2001 2002 2003 2005 2006 2007 2008 2011 2012 2013 2014
Greiningarár

Lömunarveiki

Sögulegar heimildir um lömunarveiki á Íslandi

Fyrsti lömunarveikifaraldurinn reið óvænt yfir Ísland árið 1924[29]. Áður höfðu nokkrar minniháttar hópsýkingar af lömunarveiki verið skráðar, fyrst í Reykjavík árið 1904 og síðar utan Reykjavíkur árin 1905 og 1914–1915[30]. Stöku tilfelli voru svo greind árin 1918, 1920, og 1922–1923. Eftir að stóri faraldurinn reið yfir 1924 fylgdu sex stórir faraldrar, sá síðasti 1955. Síðustu níu innlendu tilfellin (tvö þeirra með lömun) greindust hér á landi árið 1960 en þau tilheyrðu sömu fjölskyldunni[31]. Síðasta tilfellið sem greindist hér á landi kom erlendis frá árið 1963[32]. Um var að ræða erlent barn, án lamana, sem kom frá Bandaríkjunum og var sýkt af lömunarveiki af gerð III. Við skimun fyrir lömunarveiki á flóttamönnum frá Kosovo árið 1999 greindust lömunarveikiveirur af gerð I og III sem voru vegna bólusetningar[33].

Lömunarveiki með lömun af völdum lifandi bóluefnis hefur aldrei greinst hér á landi.



Bólusetning gegn lömunarveiki á Íslandi

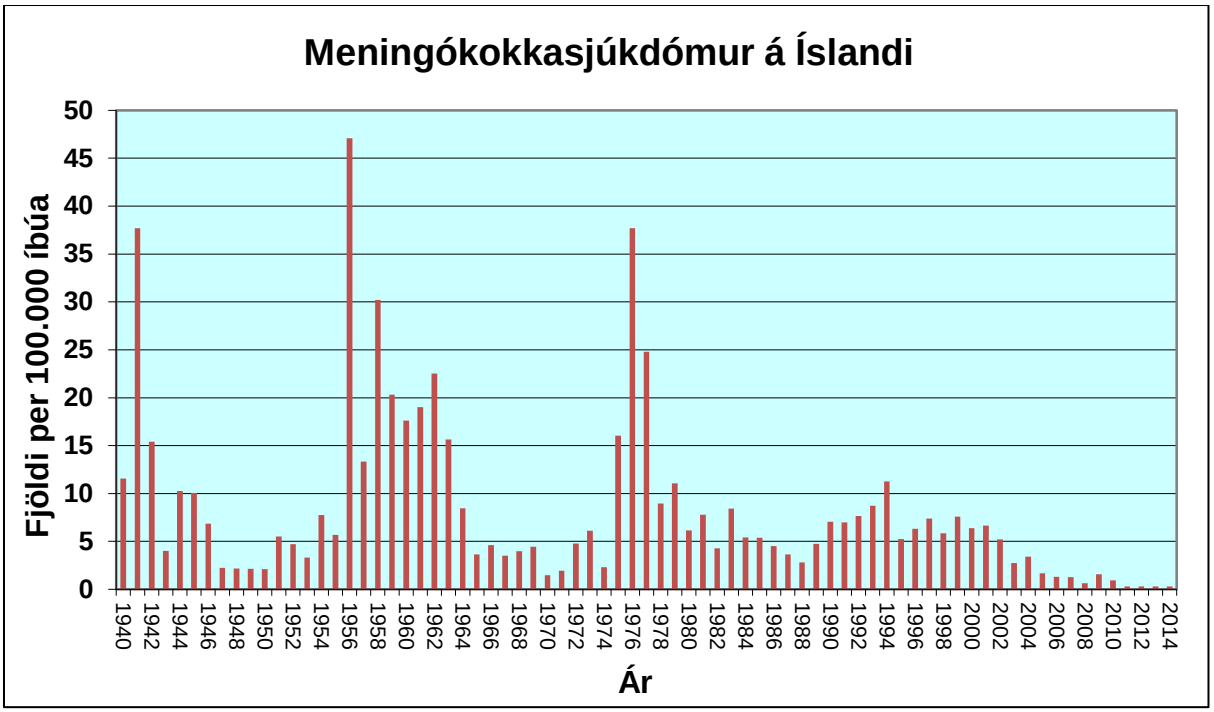
Bólusetning gegn lömunarveiki hófst á Íslandi árið 1956. Einungis hefur verið notað dautt bóluefni gegn lömunarveiki (*inactivated polio vaccine – IPV*). Var þátttaka mjög góð alla tíð eða nálægt 100% og Íslendingar vel varðir gegn sýkingu.

Vöktun á lömunarveiki á Íslandi

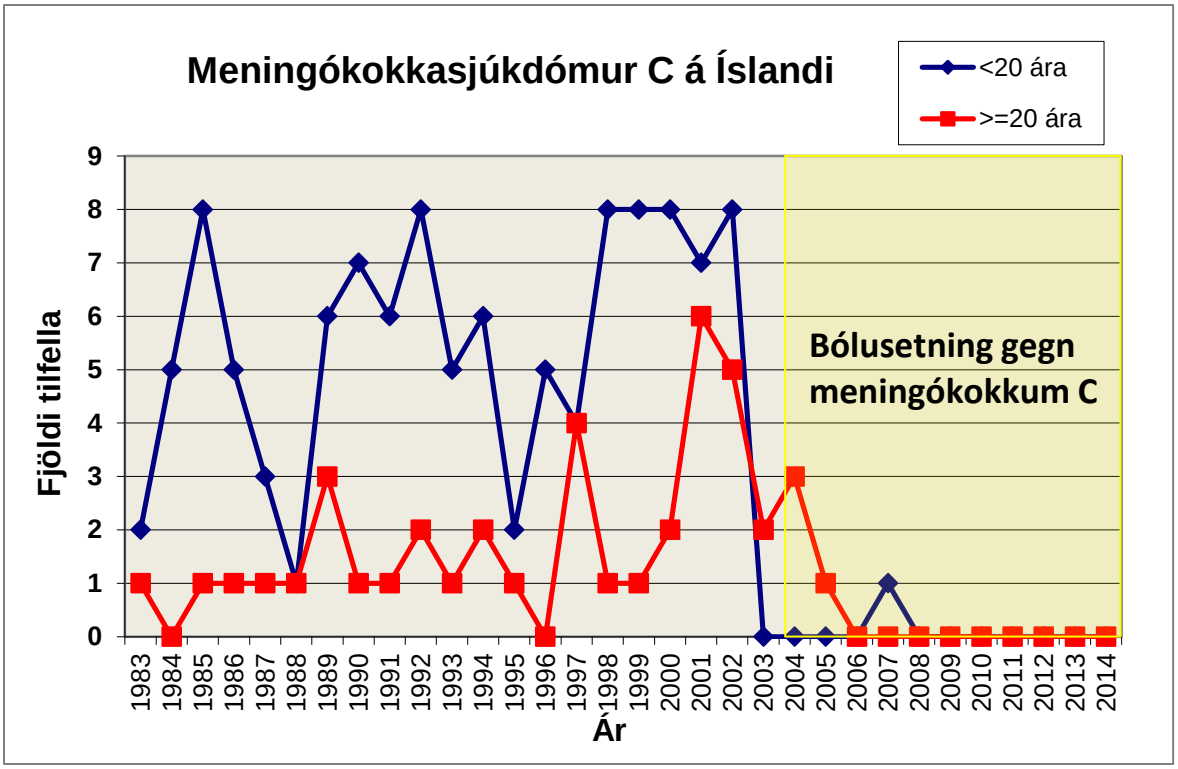
Víða um lönd er beitt vöktun á bráðum lömunum (*acute flaccid paralysis -AFP*) til að finna sýkingu af völdum lömunarveiki. Íslendingar hafa ekki beitt þeirri aðferð með kerfisbundnum hætti. Könnun sem gerð var yfir 15 ára tímabil (1982–1996) benti til þess að 1 barn af hverjum 7287 fæddum börnum greinist með lömun[34]. Ekkert þeirra tengdist lömunarveiki. Aðferðin við vöktun á Íslandi byggist á veirugreiningu á saursýnum, en tíðnin á þeirri rannsókn samsvarar einni rannsókn á hverja 1500 íbúa. Sýni sem gætu talist grunsamleg eru send til frekari greiningar í Finnlandi. Nefnd Evrópudeildar WHO um útrýmingu á lömunarveiru telur þessa aðferð ásættanlega hér á landi[35].

Meningókokkasjúkdómur

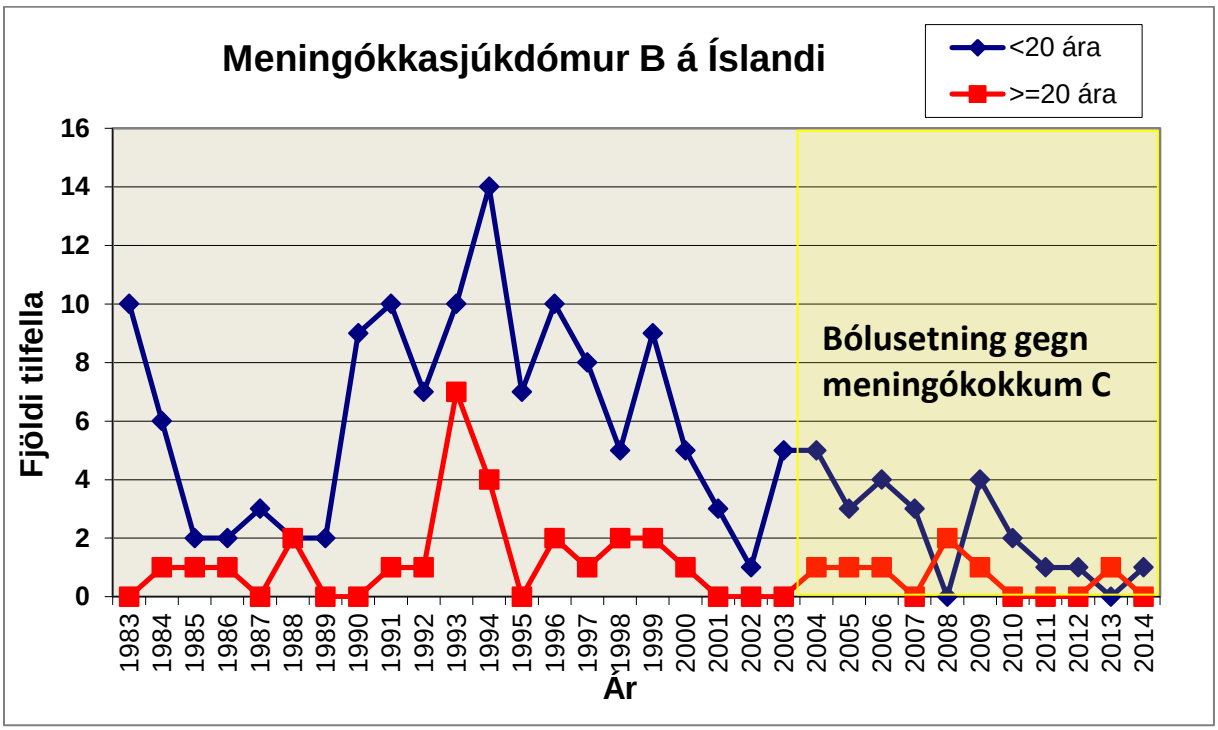
Algengustu sermisgerðir meningókokka sem valda sjúkdómi hér á landi hafa verið B og C. Sermisgerð B olli stórum faröldrum hér á landi á 20. öld en sermisgerð C var einnig algeng.



Eftir að almenn ungbarnabólusetning gegn meningókokkasjúkdómi C hófst hér á landi árið 2002 hefur sjúkdómurinn nánast horfið.

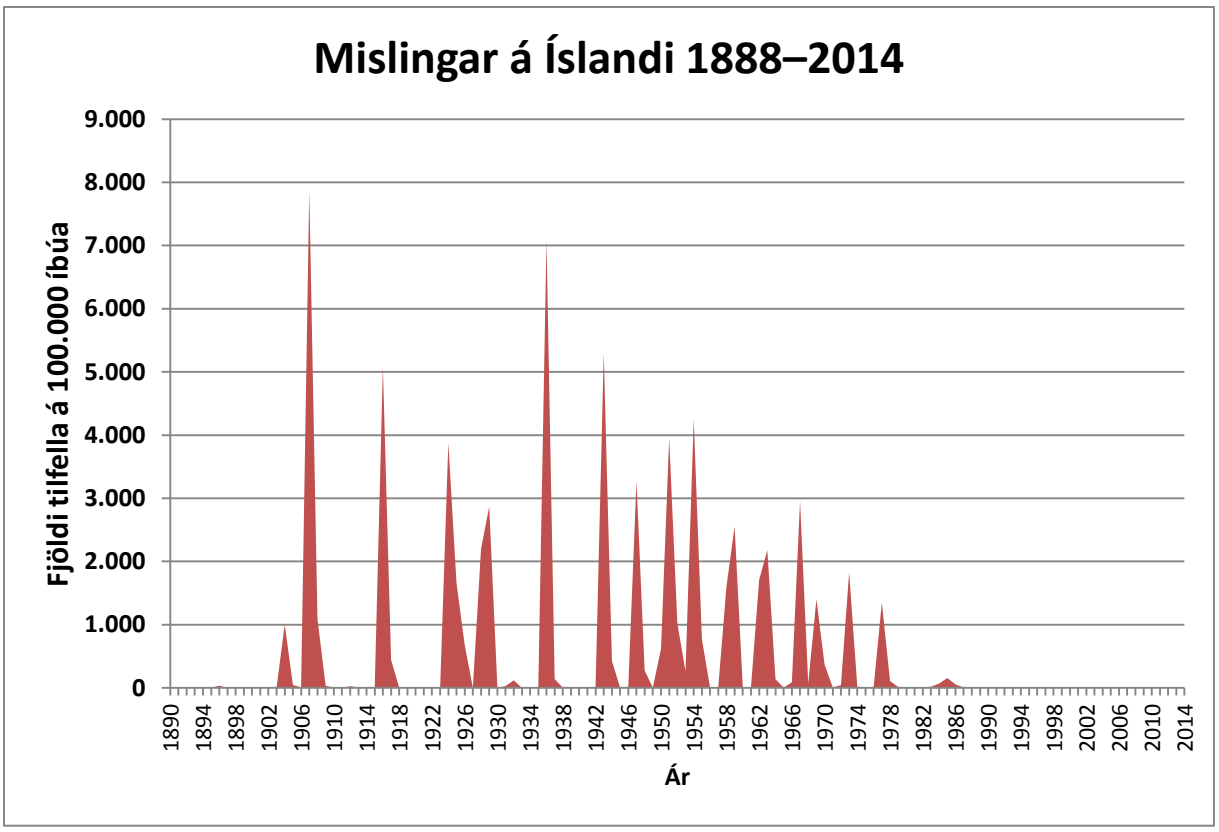


Áhyggjur manna um að meningókokkasjúkdómur B mundi ryðja sér til rúms hafa ekki gengið eftir, frekar hefur dregið úr nýgengi hans eftir að bólusetning gegn meningókokkasjúkdómi C hófst. Full ástæða er til að vera á varðbergi gegn þessum sjúkdómi.



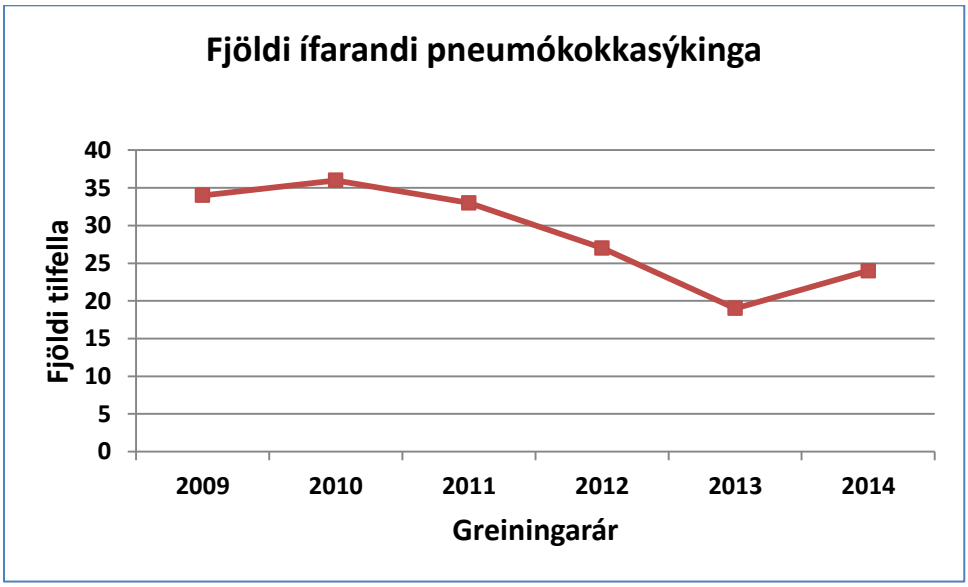
Mislingar

Mislingar hafa verið skæðir á Íslandi einkum á 19. öld og fram eftir 20. öld. Mjög dró úr nýgengi mislinga eftir að skipulegar bólusetningar hófust gegn sjúkdómnum við 2 ára aldur árið 1976. Síðar var bólusetningin gefin með bóluefnum gegn rauðum hundum og hettusótt við 18 mánaða aldur árið 1989. Árið 1994 var ákveðið að endurbólusetja 9 ára gömul börn en um mitt ár 2001 var endurbólusetningin færð til 12 ára aldurs. Síðast greindist mislingatilfelli hér á landi árið 1996 þar til eitt 13 mánaða gamalt barn greindist árið 2014 með sjúkdóminn. Barnið hafði smitast á Filipseyjum eftir að hafa verið í heimsókn þar. Engin tilfelli greindust hér á landi meðal þeirra sem voru í tengslum við barnið.

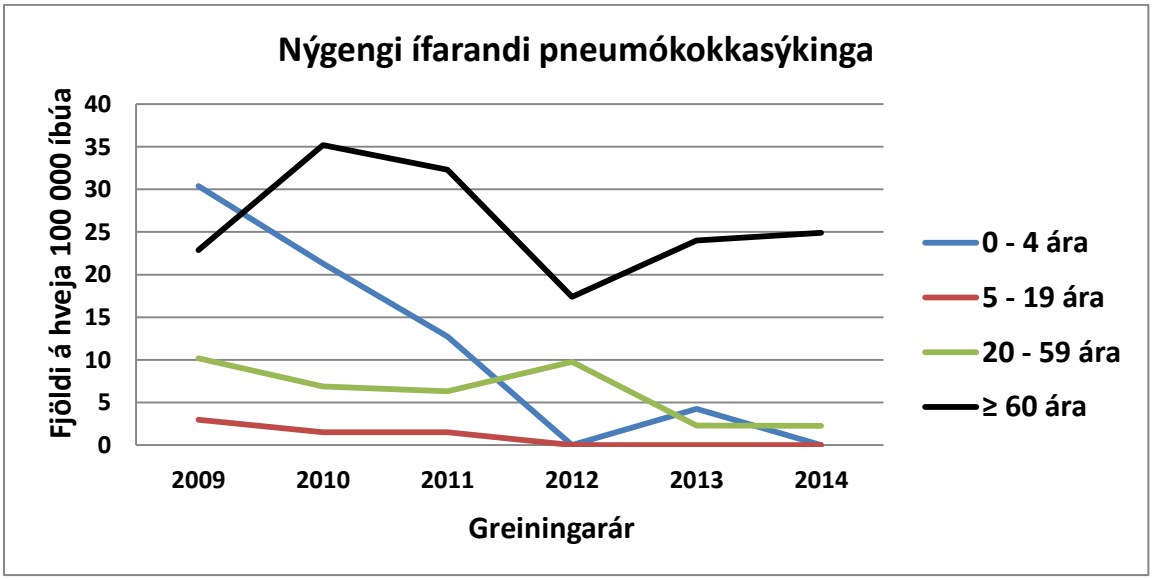


Pneumókokkasýking (ífarandi)

Ífarandi pneumókkasýkingar voru gerðar tilkynningarskyldar árið 2009 í aðdraganda bólusetninga með tengdu pneumókokkabóluefni en almennar ungbarnabólusetningar gegn sjúkdómnum hófust vorið 2011. Jafnt og þétt hefur dregið úr nýgengi ífarandi pneumókokkasýkinga eftir að bólusetning gegn pneumókokkum meðal ungra barna. Á árinu 2011 greindust 33 einstaklingar hér á landi með ífarandi pneumókokkasýkingar og átta létust. Á árinu 2012 greindust 27 einstaklingar með ífarandi sýkingar af völdum pneumókokka og fjórir þeirra létust. Enginn þeirra var yngi en 20 ára. Árið 2013 geindust 19 einstaklingar og fjórir þeirra létust, allir yfir 64 ára. Árið 2014 geindust 24 einstaklingar og þrír þeirra létust, allir yfir 75 ára en enginn einstaklingur yngri en 20 ára greindist.



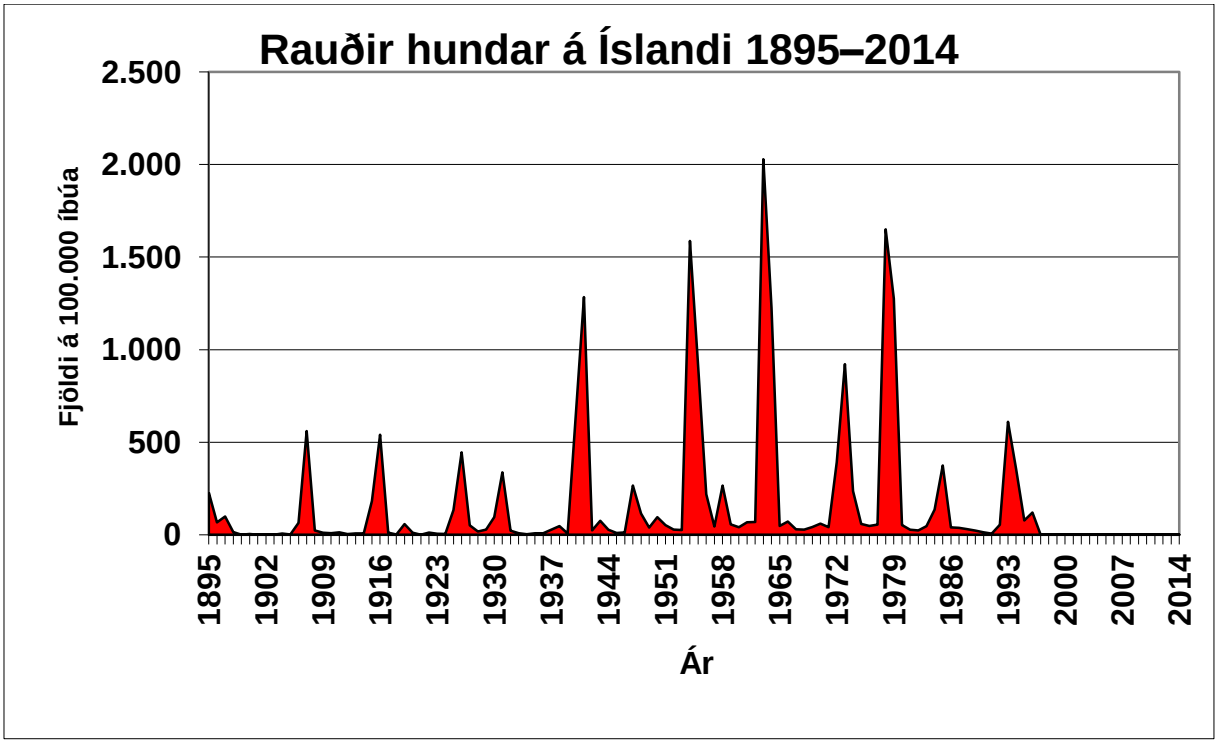
Dregið hefur úr nýgengi ífarandi pneumókokkasýkinga, einkum í aldurshópnum undir 60 ára aldri en nýgengið hefur staðið nokkuð í stað hjá 60 ára og eldri. Líklegt má telja að þennan árangur megi rekja til bólusetninga gegn pneumókokkum sem hófust árið 2011 hér á landi.



Rauðir hundar

Rauðir hundar gengu í faröldrum alla 20. öldina og ollu tíðum fósturskaða[36]. Árið 1977 hófst átak sem miðaði að því að koma í veg fyrir sýkingu af völdum rauðra hunda hjá þunguðum konum og þannig koma í veg fyrir fósturskaða af völdum sjúkdómsins. Hafin var rannsókn á ónæmisástandi gegn rauðum hundum með sérstöku tilliti til verndunar næmra kvenna á barneignaraldri (12– 40 ára) með bólusetningum. Þessum bólusetningum var ekki ætlað að útrýma rauðum hundum eða faröldrum af völdum þeirra. Þeim var ætlað að ná til þeirra stúlkna sem ekki fengu náttúrulegt ónæmi gegn sjúkdómnum og hindra þannig skaða af völdum meðfæddra rauðra hunda[37].

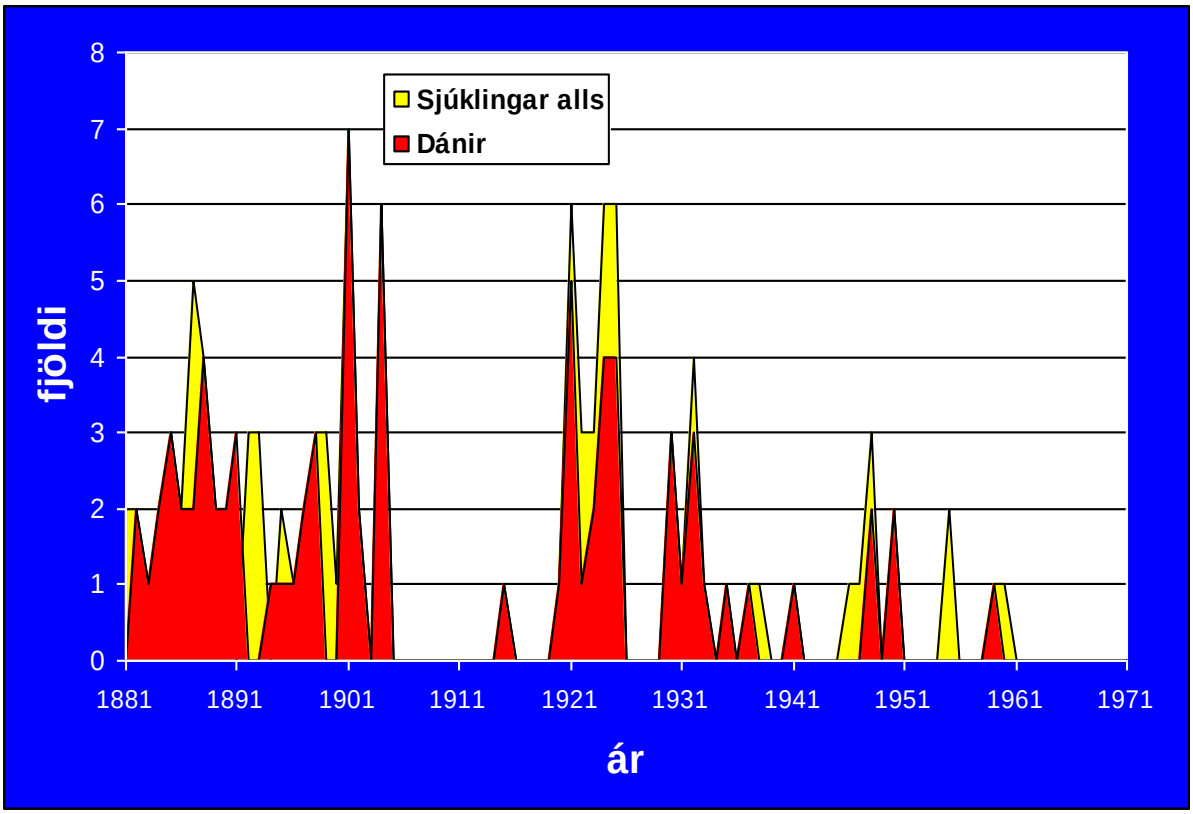
Árið 1989 hófst almenn ungbarnabólusetning gegn rauðum hundum, mislingum og hettusótt við 18 mánaða aldur. Árið 1997 var ákveðið að endurbólusetja börn 9 ára að aldri. Var þetta gert til að binda fyrr enda á rauðu hunda faraldur sem hófst 1992 og gekk meðal óbólusettra einstaklinga. Síðustu tilfellin af rauðum hundum greindust árið 1996 þar til tveir fullorðnir einstaklingar greindust með sjúkdóminn á árinu 2012. Báðir voru með einkennandi sjúkdóm og hafði annar líklega smitast erlendis. Báðir voru óbólusettir.



Stífkrampi

Stífkrampi var alvarlegt vandamál hér á landi áður fyrr og var valdur að hárri dánartíðni ungbarna (ginklofi), einkum í Vestmannaeyjum á 19. öld[38]. Bólusetning gegn stífkrampa hófst hér á landi árið 1952 og var orðin almenn á Íslandi frá 1955. Engin tilfelli höfðu verið skráð hér á landi frá 1960 (en þó er getið um eitt óskráð tilfelli 1970) þar til sjúkdómurinn greindist í 79 ára gömlum bónda árið 2008 hér á landi[39].

Stífkrampi á Íslandi frá 1881–1971



Framkvæmd bólusetninga

Stöðugt er unnið að þróun og framkvæmd bólusetninga og áhrifa þeirra. Einn liður í því er að fullgera miðlægan gagnagrunn um bólusetningar sem nýtist við að fylgjast með hlutfalli þeirra sem eru bólusettir.

Samkvæmt lögum um ónæmisaðgerðir nr. 36/1950 skyldi börnum boðin bólusetning („skyldi gera kost bólusetninga“) gegn barnaveiki, kikhósta og „öðrum sóttum er til greina koma hér á landi ef virk ónæmisaðgerð verður kunn.“ Bólusetning gegn bólusótt var þá skylda. Eftir því sem fram leið bættust við bólusetningar s.s. gegn lömunarveiki, stífkrampa, haemophilus influenzae gerð b í hinni almennu ungbarnabólusetningu 3, 5 og 12 mánaða gamalla barna, bólusetning gegn rauðum hundum, mislingum og hettusótt 18 mánaða og 12 ára barna og bólusetning gegn meningókokkasjúkdómi C við 6 og 8 mánaða aldur. Síðast bættist við bólusetning gegn pneumókokkasýkingum sem hófst á Íslandi í apríl 2011. Er þess vænst að alvarlegum pneumókokkasýkingum í börnum muni fækka um allt að 70%, miðeyrnabólgu um allt að 25%, lungnabólgu um allt að 30% og að draga megi úr sýklalyfjaávísunum til barna um allt að 25%.

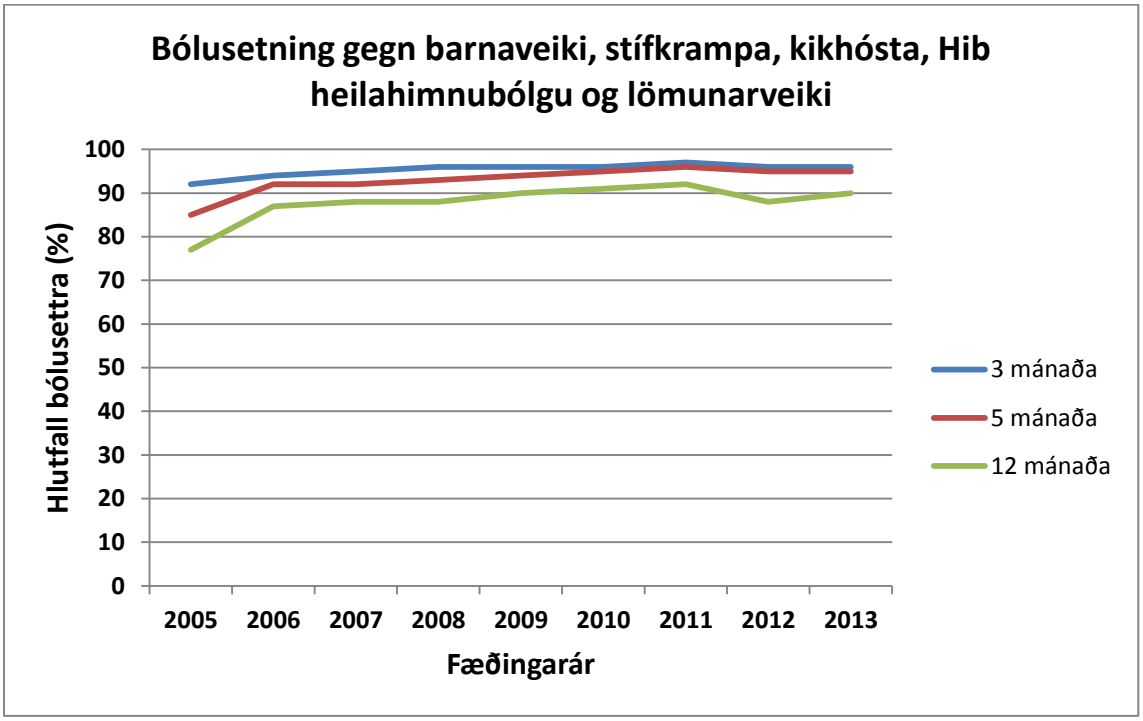
Þann 1. september 2011 hófst almenn bólusetning á Íslandi gegn HPV (*Human Papilloma Virus*). Veturinn 2011 til 2012 voru 12 og 13 ára stúlkur (fæddar 1998 og 1999) bólusettar en upp frá því eru 12 ára stúlkur bólusettar árlega. Á Íslandi greinast árlega hundruð kvenna með forstigsbreytingar leghálskrabbameins og um 17 konur með leghálskrabbamein. Með bólusetningunni má búast við að koma megi í veg fyrir um 40–50% forstigsbreytinga og 60–70% leghálskrabbameins. Þar sem leghálskrabbamein myndast oftast 20–30 árum eftir sýkingu af völdum HPV munu líða 10–30 ár þar til árangur bólusetningarinnar kemur í ljós. Því er lögð áhersla á nauðsyn þess að konur haldi áfram að mæta í krabbameinsleit eins og opinberar leiðbeiningar segja til um.

Um bólusetningar er fjallað í reglugerð nr. 221/2001 með síðari breytingum, sbr. reglugerð nr. 904/2013.

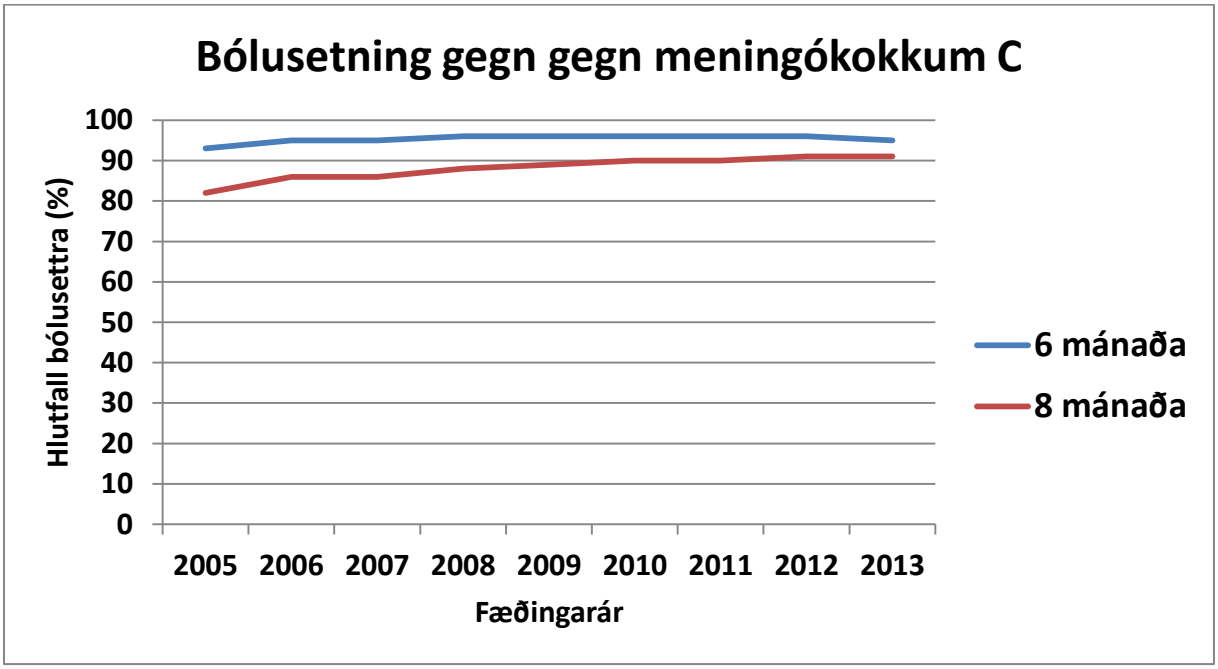
Þátttaka í bólusetningum

Bólusetning barna

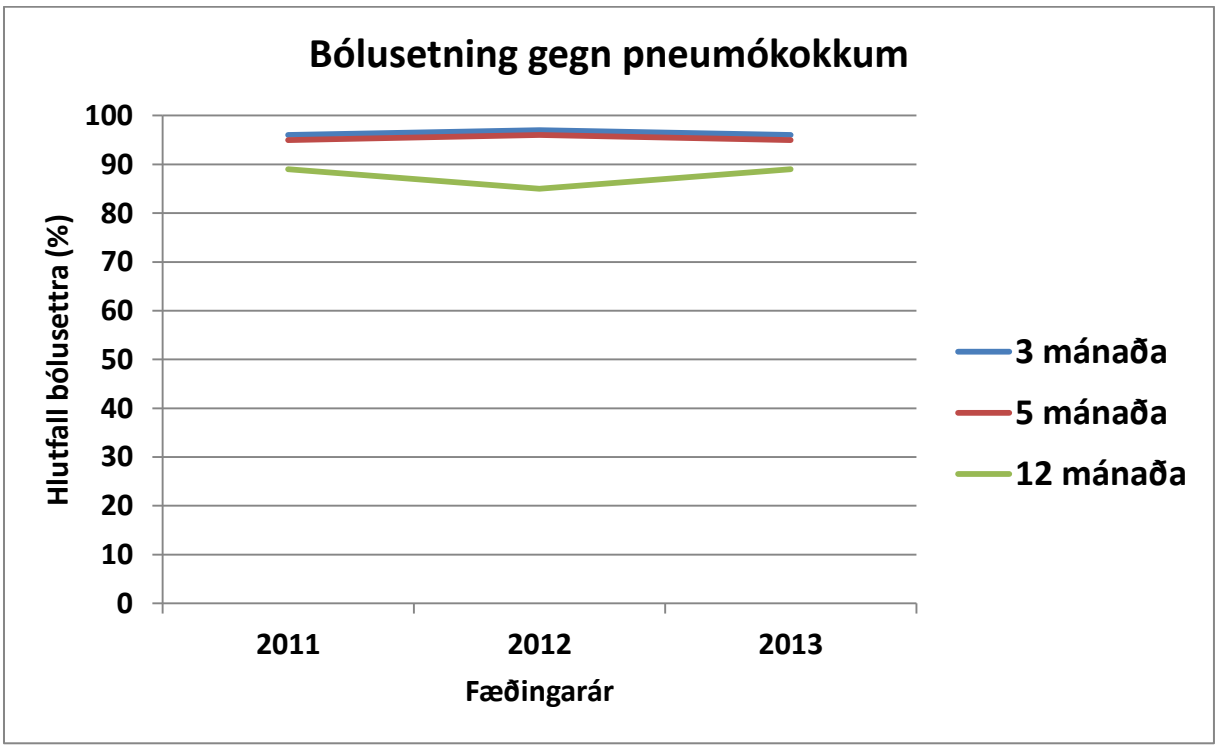
Bólusetning gegn barnaveiki, stífkrampa, heamophilus influenzae gerð b (Hib) og lömunarveiki:



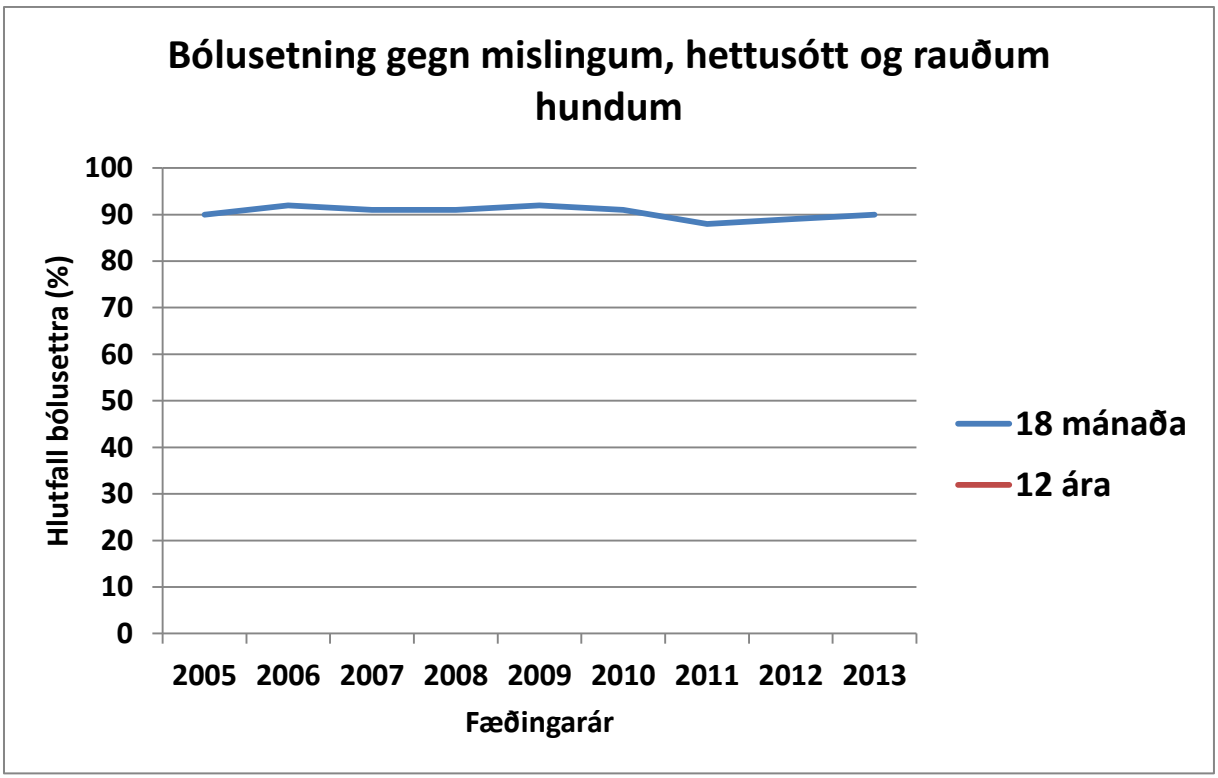
Bólusetning gegn meningókokkasjúkdómi C:



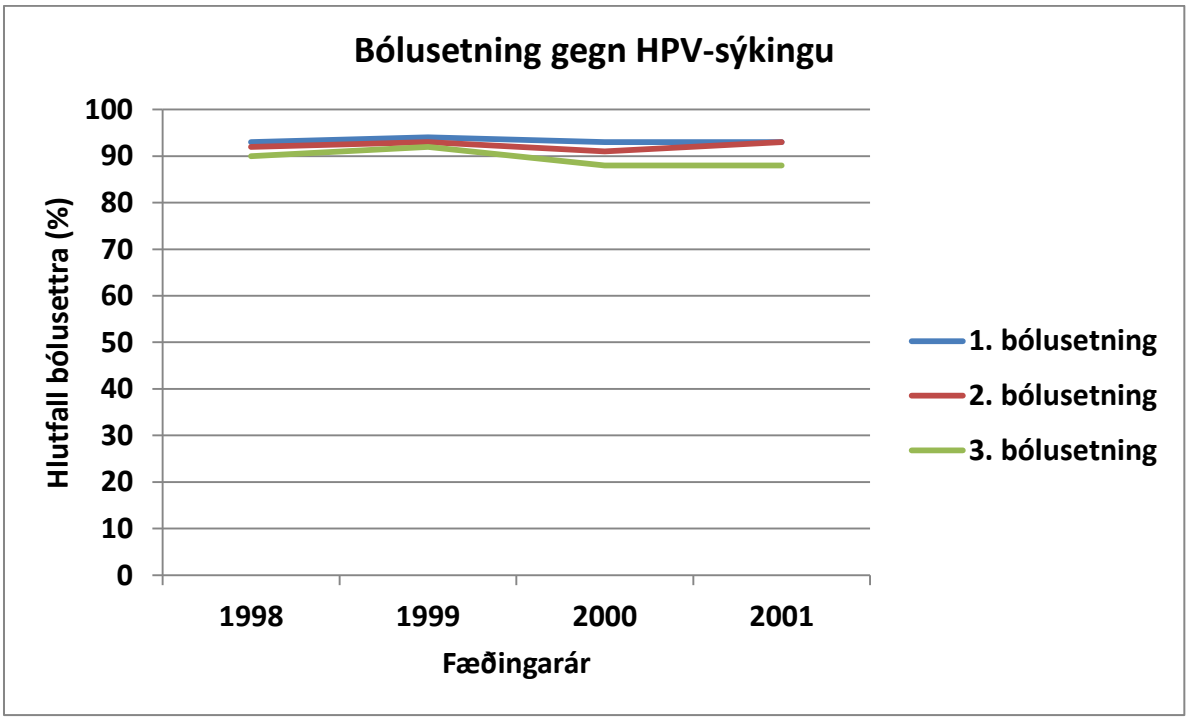
Bólusetning gegn pneumókokkasjúkdómi:



Bólusetning gegn mislingum, hettusótt og rauðum hundum:



Bólusetning gegn vörtuveirum (HPV) og leghálskrabbameini:



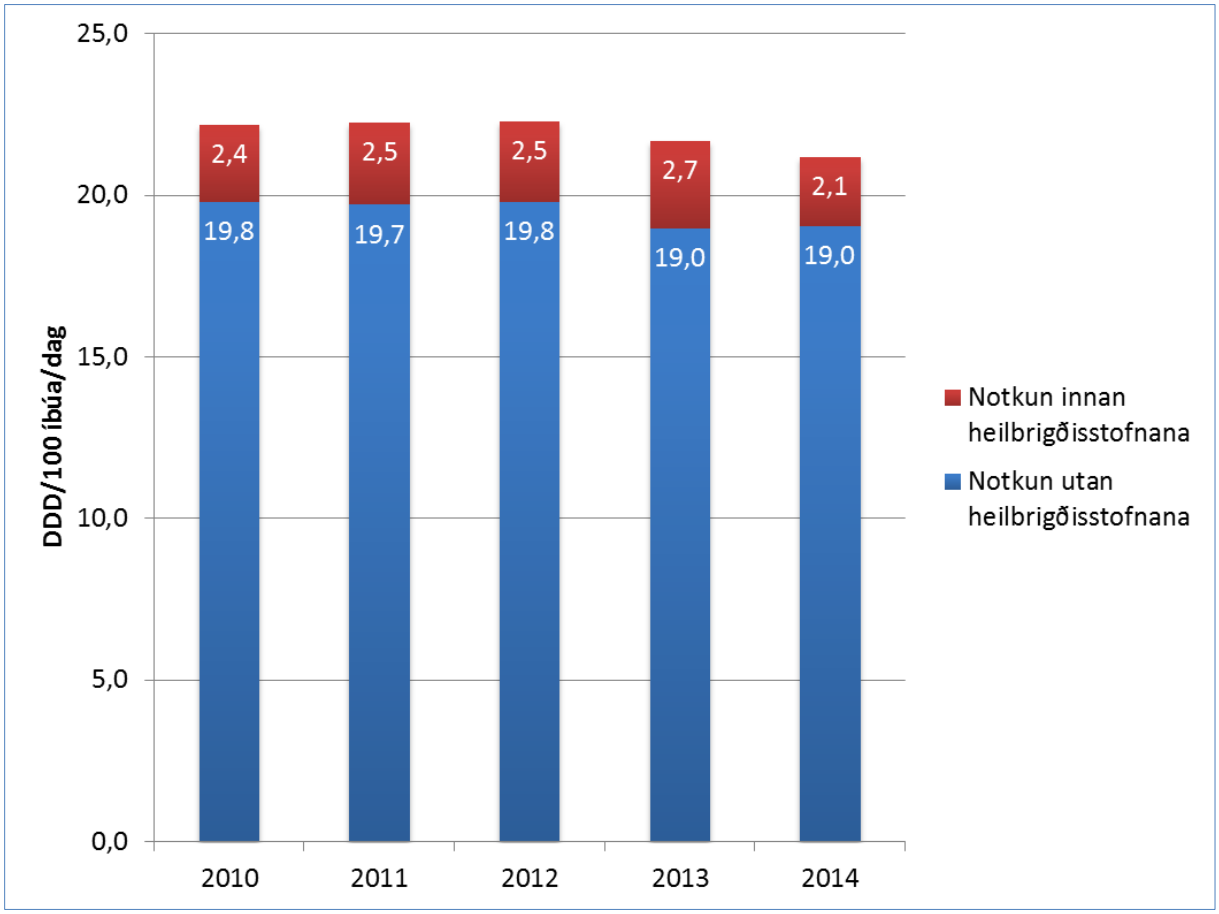
Sýklalyfjanotkun og sýklalyfjaónæmi

Í skýrslu sóttvarnalæknis og samstarfsaðila um sýklalyfjanotkun og sýklalyfjaónæmi baktería í mönnum og dýrum á Íslandi 2014 (http://www.landlaeknir.is/utgefid-efni/skjal/item27204/) er ítarlega gerð grein fyrir notkun sýklalyfja og ónæmi sýkla fyrir sýklalyfjum. Helstu niðurstöður eru eftirfarandi:

Sýklalyfjanotkun

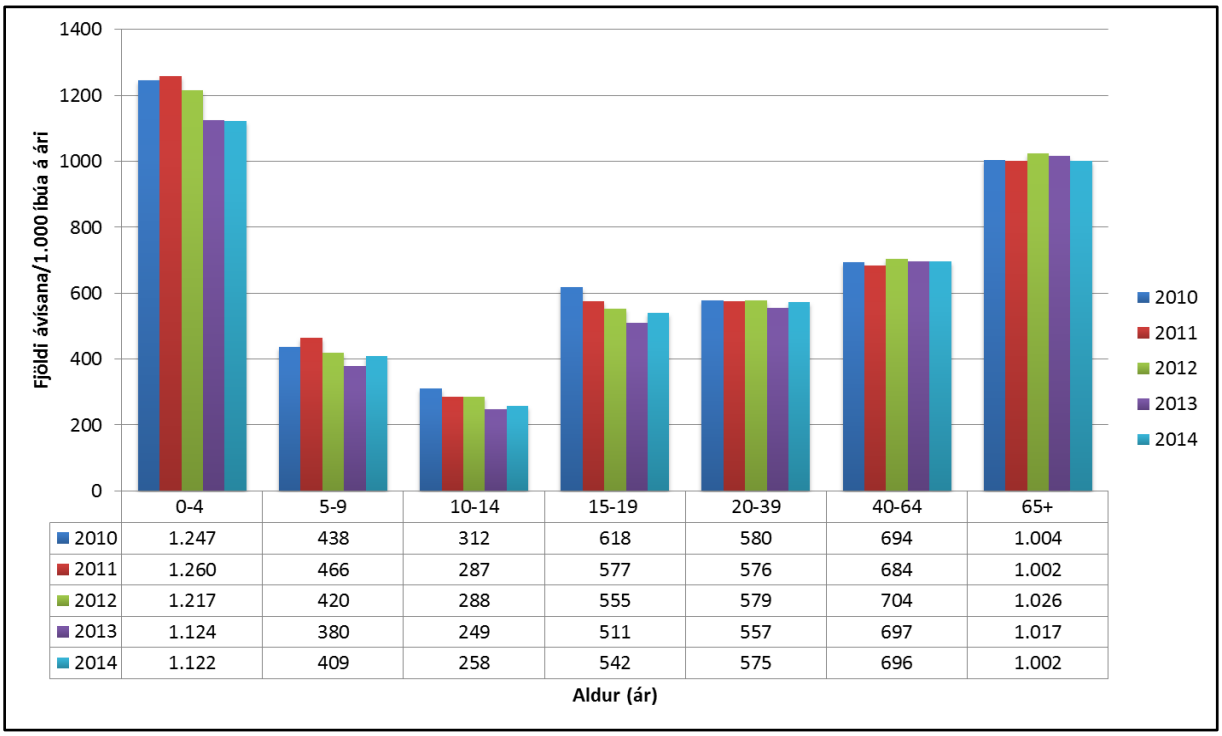
Notkun sýklalyfja hjá mönnum hefur lítið breyst frá árinu 2010 en hefur þó minnkað lítillega frá árinu 2012. Notkun sýklalyfja samkvæmt sölutölum er áfram hæst á Íslandi miðað við hin Norðurlöndin en er um miðbik ef miðað er við öll Evrópulönd. Hins vegar er sýklalyfjanotkun hjá dýrum ein sú minnsta hér á landi innan Evrópu og hefur hún minnkað stöðugt frá 2010.

Notkun sýklalyfja innan og utan heilbrigðisstofnana árin 2010–2014:



Þó sýklalyfjanotkun hjá mönnum hér á landi hafi haldist nokkuð óbreytt á undanförnum árum þá hefur notkun einstakra sýklalyfja og sýklalyfjaflokka breyst sem og notkunin hjá mismunandi aldurshópum. Notkun sýklalyfja hjá börnum yngri en 5 ára hefur minnkað stöðugt frá árinu 2011 (11%) en á því ári hófst almenn bólusetning gegn pneumókokkum hjá börnum. Leiða má líkum að því að bólusetningin hafi dregið marktækt úr tíðni eyrnabólgu og öndunarfærasýkinga og þannig dregið úr sýklalyfjanotkun en sýklalyfjanotkun hjá ungum börnum er hlutfallslega mest allra aldurshópa.

Notkun sýklalyfja (J01), mæld í fjölda ávísana, utan heilbrigðisstofnana 2010–2014, eftir aldri:



	0-4	5-9	10-14	15-19	20-39	40-64	65+
2010	1.247	438	312	618	580	694	1.004
2011	1.260	466	287	577	576	684	1.002
2012	1.217	420	288	555	579	704	1.026
2013	1.124	380	249	511	557	697	1.017
2014	1.122	409	258	542	575	696	1.002

Hins vegar hefur notkun azithromycins aukist jafnt og þétt í öllum aldurshópum á undanförnum árum þrátt fyrir áróður um takmarkað notagildi lyfsins einkum hjá ungum börnum. Áfram er mikil notkun hér á landi á tetracýklínlyfjum en sú notkun skýrir einna helst meiri notkun sýklalyfja hér á landi miðað við önnur lönd.

Sýklalyfjaónæmi

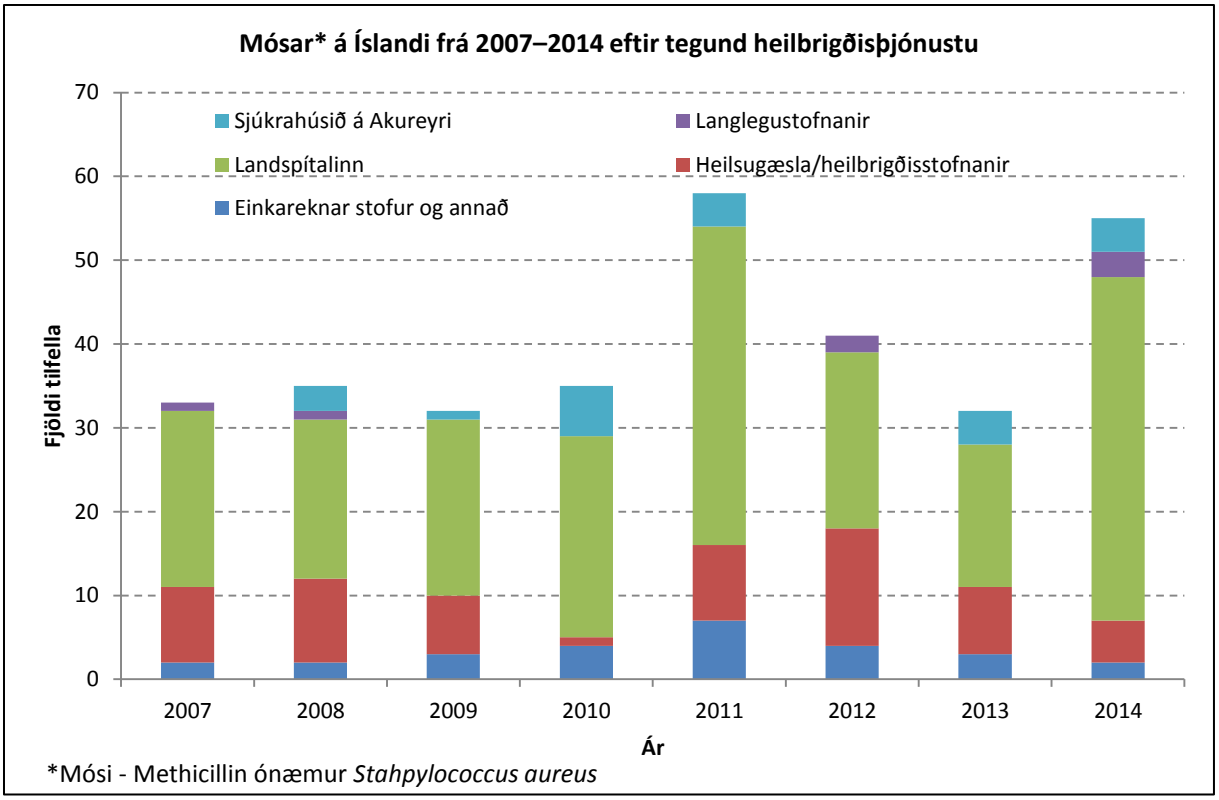
Sýklalyfjaónæmi hefur almennt haldist nokkuð óbreytt hér á landi á undaförnum árum þó það sé breytilegt eftir bakteríum. Salmonellusýkingar hjá mönnum hafa verið nokkuð svipaðar að fjölda til frá 2000 en tíðni kampýlóbaktersýkinga heldur aukist. Flestar þessara sýkinga má rekja til erlends smits og er sýklalyfjaónæmi algengara í þeim sýkingum. Sýklalyfjaónæmi pneumókokka hefur minnkað hér á landi frá 2011 sem kann að stafa af almennri bólusetningu hjá börnum sem hófst 2011. Á tímabilinu 2011 til 2014 þá minnkaði ónæmi fyrir penicillini úr 40% í rúmlega 20% en hins vegar jókst ónæmi fyrir ceftríaxóni úr 0% í 5%.

Hvað E. coli bakteríur varðar, hefur ónæmi fyrir hinum ýmsu sýklalyfjum haldist nokkuð óbreytt en það veldur hins vegar áhyggjum að um 6% allra E. coli stofna mynda nú breiðvirka beta-laktamasa (ESBL). Jafnfram hefur ónæmi enterókokka fyrir ampicillini aukist í 12% en er enn einungis 1% fyrir vancomycini. Á árinu 2014 greindust 55 einstaklingar með methicillin ónæma stafýlókokka (MÓSA) og er það aukning miðað við undanfarin ár.

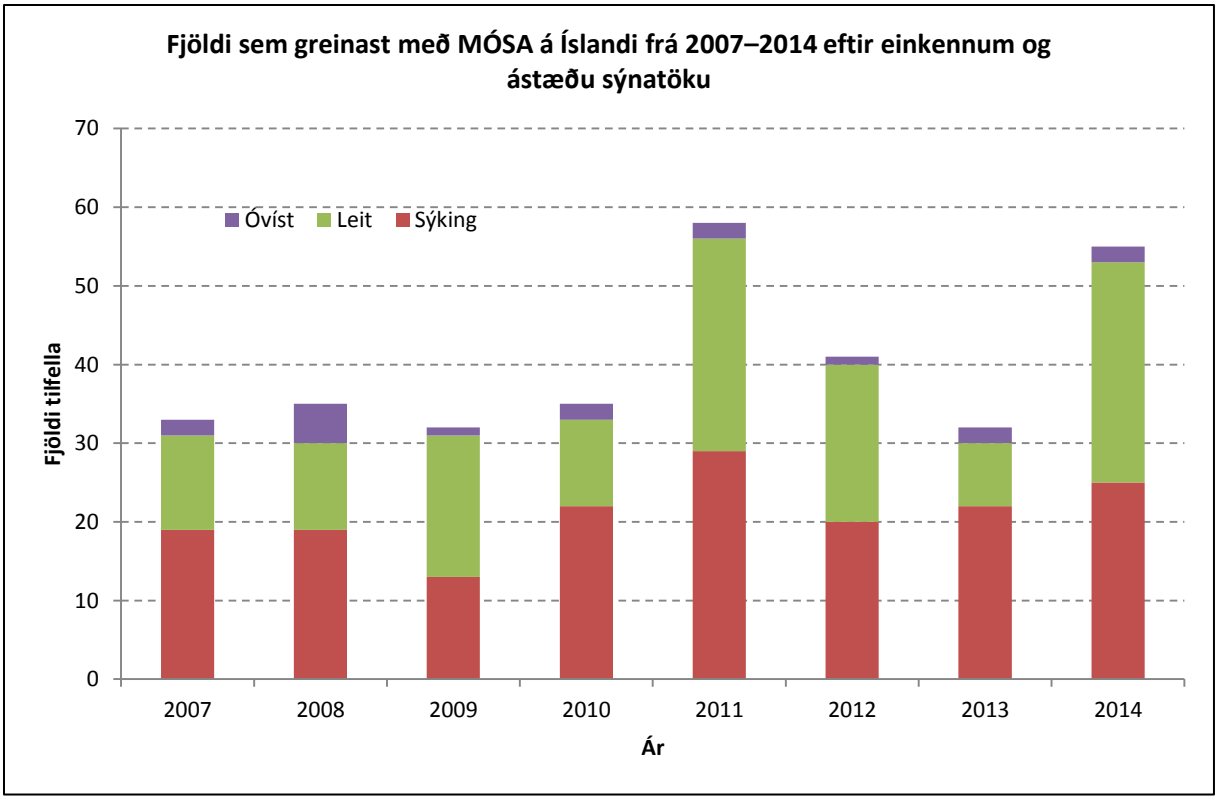
Meticillin ónæmur Staphylococcus aureus (MÓSA)

Árið 2013 komu út leiðbeiningar sóttvarnalæknis „Forvarnir og aðgerðir gegn methicillin ónæmum *Staphylococcus aureus* (MÓSA)“ sem voru gerðar í samvinnu við sýkingavarnadeild og sýkladeild Landspítala. Leiðbeiningarnar voru skrifaðar til að móta samræmda stefnu á Íslandi í þeim tilgangi að draga úr útbreiðslu á ónæmum bakteríum innan heilbrigðisþjónustunnar.

Fjöldi þeirra sem greindust með sýkingar af völdum mósa hefur haldist nokkuð stöðugur sl. ár. Flestir sem greinast með mósa á Íslandi greinast við sýnatöku á Landspítalanum. Árið 2014 voru tvær sýkingahrinur af völdum mósa á deild A7 og ein á deild B7, sem þurfti að bregðast með mósaleit og eflingu sýkingavarna. Hluti þeirra sem greinast með mósa á Landspítalanum eru ekki inniliggjandi heldur greinast við sýnatökur á slysadeildinni eða göngudeildum. Einnig greinist töluvert af mósa í heilsugæslunni og á heilbrigðisstofnunum úti á landi. Hlutfallslega fáar greiningar koma frá langlegustofnunum, en víða erlendis hefur mósi náð fótfestu á þessum stofnunum og valdið sýkingum sem getur verið erfitt að meðhöndla.

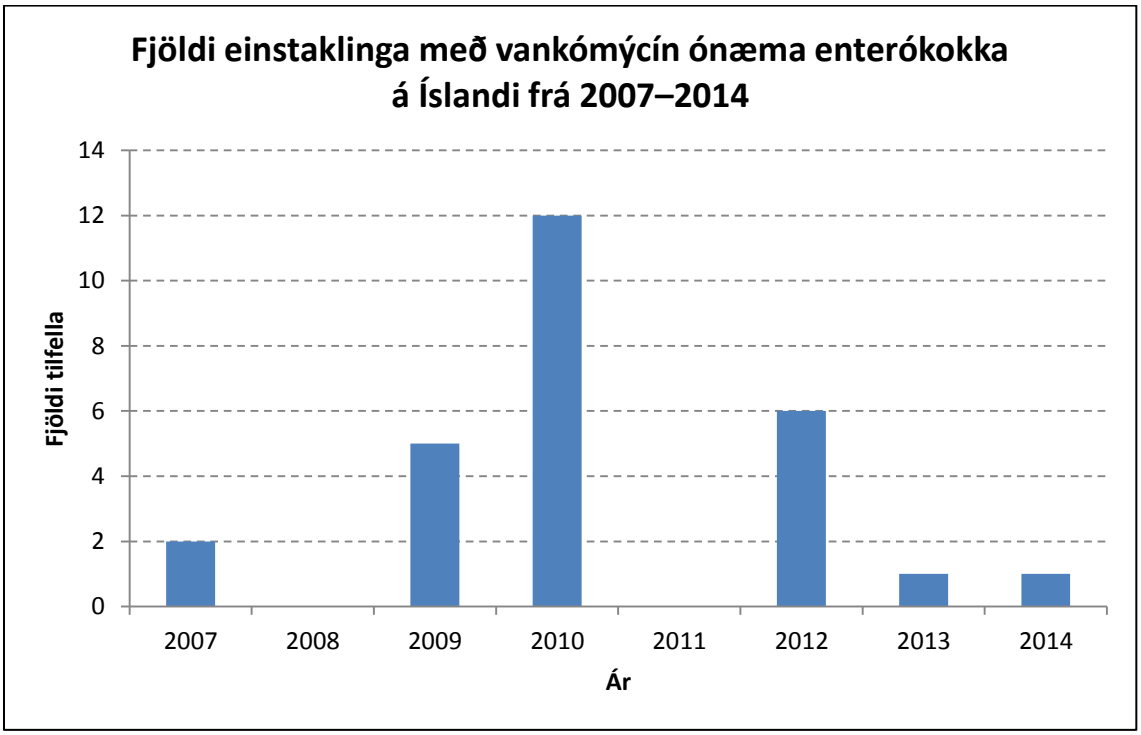


*Mósi - Methicillin ónæmur *Stahpylococcus aureus*



Vankómýsín ónæmir enterókokkar

Vankómýsin ónæmir enterókokkar (VRE) greindust fyrst á Íslandi árið 2007, en fjöldi tilfella eftir það hefur sveiflast mjög. Sýkingahrinur af völdum VRE gengu yfir á Landspítalanum á árunum 2009 og 2010. Fyrstu tilfellin greindust í venjulegum sjúklingasýnum og fleiri greindust þegar farið var í umfangsmikla VRE leit. Enginn greindist með VRE árið 2011 en árið 2012 varð vart við aðra sýkingahrinu á Landspítalanum. Eitt tilfelli greindist á árinu 2013 og annað árið 2014.

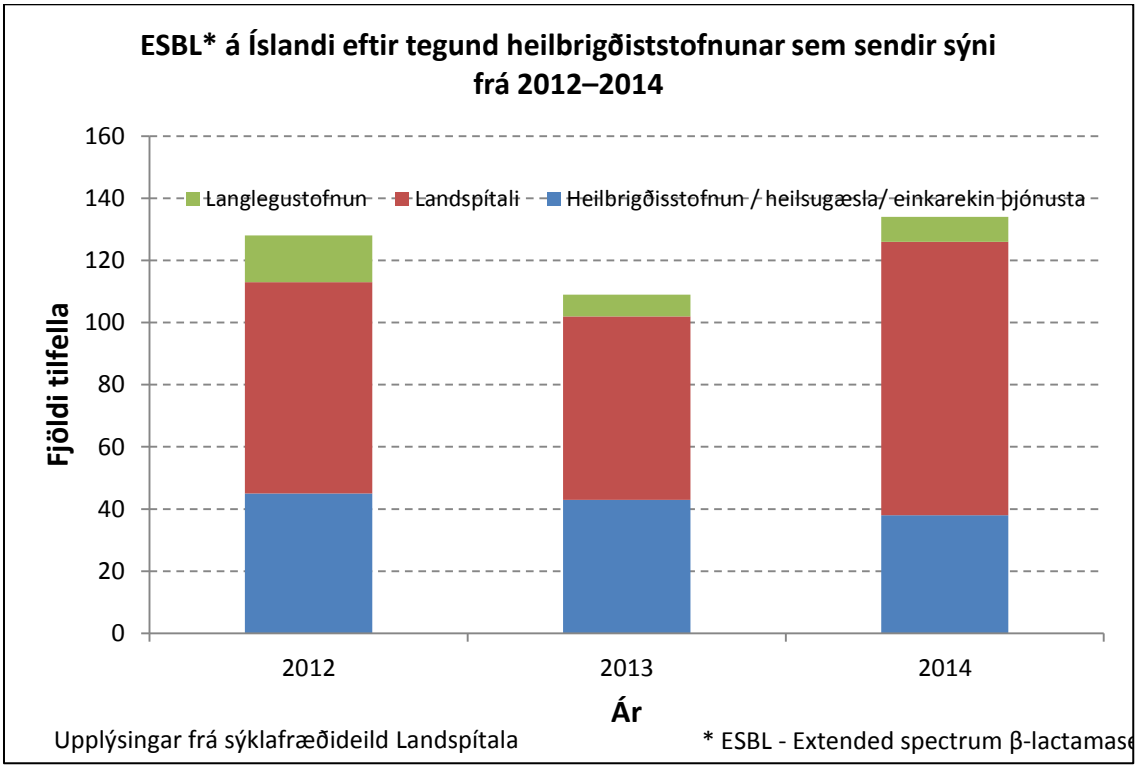


Breiðvirkir betalaktamasar (ESBL)

Margar Gram neikvæðar bakteríur framleiða ensím sem kallast β-laktamasar sem eru algeng orsök ónæmis en þau rjúfa β-laktam hring β-laktam lyfja og gerir þau óvirk. Þessi ensím geta verið þröngvirk og virkað á eitt eða fá lyf eða breiðvirk og virkað á mörg β-laktam lyf. Bakteríur, sem framleiða þessi ensím geta verið ónæmar fyrir penicillíni, cephalósporinum og karbapenemum, og ónæmismynstrið er í samræmi við virkni þess ensíms sem myndast. Þrír helstu flokkar breiðvirkra β-laktamasa (BBL) eru ESBL (Extended Spectrum β-lactamases – ESBL), AmpC og karbapenemasar. Árið 2014 komu út leiðbeiningar sóttvarnalæknis sem voru gerðar í samvinnu við sýkingavarnadeild og sýkladeild Landspítala. Leiðbeiningarnar voru skrifaðar til að móta samræmda stefnu á Íslandi í þeim tilgangi að draga úr útbreiðslu á ónæmum bakteríum innan heilbrigðisþjónustunnar.

Gram neikvæðar bakteríur sem mynda karbapenemasa greindust ekki á Íslandi á árunum 2013 og 2014, en töluvert er um Gram neikvæðar bakteríur sem mynda ESBL. Flestar greiningarnar voru frá sjúklingum á Landspítalanum, einnig greinist töluvert á heilbrigðisstofnunum og í heilsugæslunni. Fremur fáir greindust með ESBL myndandi bakteríur á langlegustofnunum. ESBL myndandi bakteríur virðast því ekki vera algengar á langlegustofnunum hérlendis. En víða erlendis hafa þessar bakteríur náð fótfestu á langlegustofnunum og valdið sýkingum sem getur verið erfitt að meðhöndla vegna sýklalyfjaónæmis.

Í ársbyrjun 2014 varð vart við E. coli á vökudeild Landspítalans sem var ESBL myndandi. Í kjölfarið fór í gang víðtæk leit meðal bæði inniliggjandi og fyrri skjólstæðinga deildarinnar, um 20 börn greindust með bakteríuna.

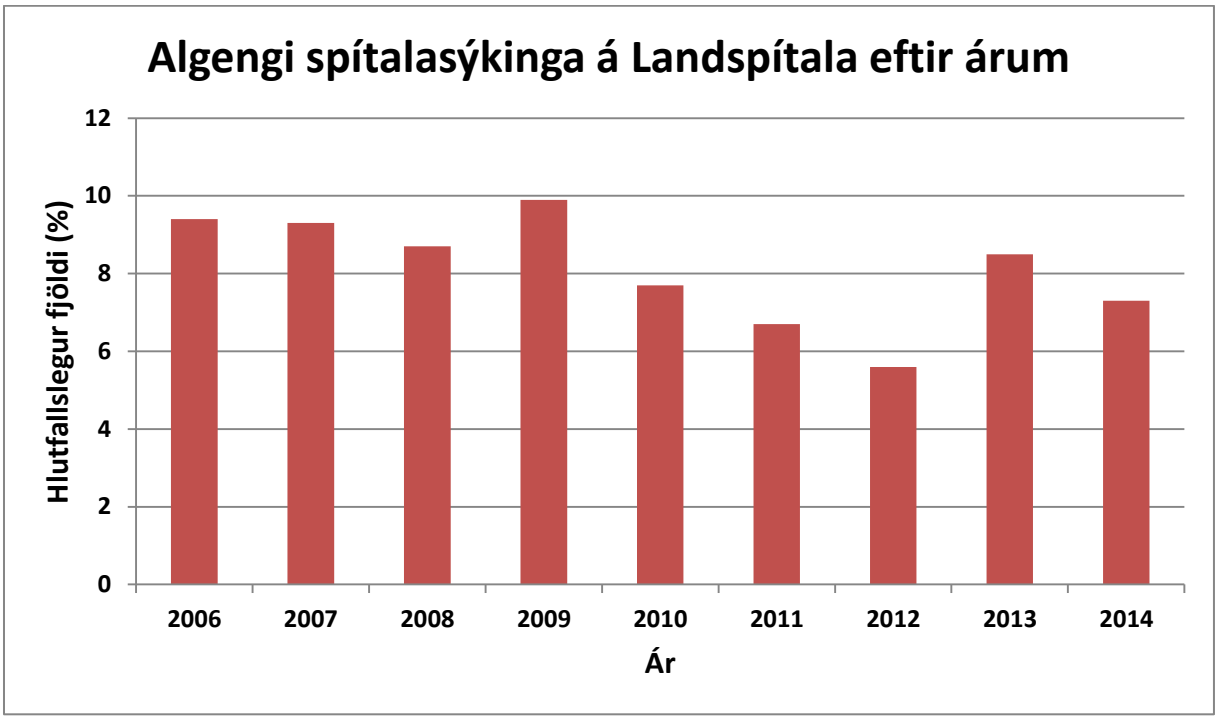


Sýkingar í tengslum við veitingu heilbrigðisþjónustu

Reglubundin skráning spítalasýkinga hefur farið fram á Landspítala og Sjúkrahúsi Akureyrar (FSA) um langt árabil. Sýkingavarnadeild Landspítala er með umfangsmikla algengisskráningu á spítalasýkingum innan spítalans annars vegar og nýgengisskráningu vegna valinna aðgerða s.s. keisaraskurða hins vegar.

Samkvæmt reglugerð um skýrslugerð vegna sóttvarna ber að senda sóttvarnalækni tilkynningar um sýkingar í tengslum við veitingu heilbrigðisþjónustu og er unnið að því að skilgreina hvað tilkynna skuli.

Á Landspítala (LSH) hefur algengi spítalasýkinga verið skráð á þriggja mánaða fresti frá árinu 2006. Skráð var á lyflækningadeildum í Fossvogi, á Hringbraut og á Grensás og öllum skurðlækningadeildum, nema barnaskurðlækningadeild. Meðaltal hlutfalls sjúklinga á LSH með spítalasýkingar fyrir hvert ár er sýnt á mynd. Heldur hefur dregið úr algengi spítalasýkinga sem hefur verið að meðaltali 8% undanfarin 9 ár.



Algengi spítalasýkinga á Sjúkrahúsi Akureyrar hefur haldist tiltölulega óbreytt undanfarin fjögur ár eða á bilinu 3,2–5,4%.

Atburðir af völdum eiturefna og geislavirkra efna

Eldgos í Holuhrauni

Mikil skjálftahrina hófst í Bárðarbungu um miðjan ágúst 2014 sem færðist til norðausturs, yfir Dyngjujökul og í átt að Holuhrauni. Aðfaranótt 31. ágúst hófst stórt gos í Holuhrauni. Ekkert teljandi öskufall fylgdi gosinu. Mikil gasmengun af völdum brennisteinsdíóxíðs fylgdi gosinu sem birtist eins og bláleit móða og sást víða á landinu einkum N-A lands. Hæst fór styrkur mengunarinnar í byggð þann 26. október en þá fór styrkur brennisteinsdíoxíðs (SO_2) á Höfn í Hornafirði í 21.000 µg/m³ (míkrógrömm á rúmmetra).

Könnun á heilsufarslegum afleiðingum mengunarinnar og viðbrögð við þeim hvíla á sóttvarnalækni. Kannanir beindust að tvennu. Annars vegar öflun upplýsinga um sjúkdómsgreiningar í heilbrigðisþjónustunni og hins vegar könnun á lungnastarfsemi vísindamanna og lögreglumanna sem starfa í námunda við gosstöðvarnar. Sóttvarnalæknir vann í samvinnu við Umhverfisstofnun, Vinnueftirlit ríkisins og almannavarnadeild ríkislögreglustjóra að leiðbeiningarskjali um hvernig brugðist skyldi við mismunandi styrk mengunarinnar.

Áhrif á heilsufar og ráðleggingar um viðbrögð við SO_2 frá eldgosum

Litirnir í töflunni miða við styrk SO_2 í 10–15 mínútur. Áhrif loftmengunar á heilsu eru háð þeim tíma sem fólk dvelur í menguninni. Heilsuverndarmörk fyrir klukkutíma eru 350 µg/m^3 og heilsuverndarmörk fyrir sólarhring eru 125 µg/m^3.

Styrkur SO_2 í 10-15 mín.		Lýsingar á loftgæðum og áhrifum á fólk	Ráðleggingar um viðbrögð	
µg/m^3	ppm		Öll börn. Einstaklingar með undirliggjandi sjúkdóma og viðkvæmir einstaklingar*	Heilbrigðir einstaklingar
		Góð		
0-350	**0-0,1**	Yfirleitt engin áhrif á heilsufar.	Geta fundið fyrir áhrifum.	Áhrif á heilsufar ólíkleg.
		Sæmileg		
350-600	**0,1-0,2**	Getur valdið óþægindum í öndunarfærum hjá viðkvæmum einstaklingum.	Farið með gát, fylgist með mælingum. Dragið úr áreynslu utandyra ef þið finnið fyrir einkennum. Slökkvið á loftræstingu.	Áhrif á heilsufar ólíkleg. Slökkvið á loftræstingu.
		Óholl fyrir viðkvæma		
600-2.600	**0,2-1,0**	Einkenni frá öndunarfærum líkleg hjá viðkvæmum einstaklingum. Lítil vandamál hjá heilbrigðum.	Forðist áreynslu utandyra. Slökkvið á loftræstingu.	Áhrif á heilsufar ólíkleg en gagnlegt að draga úr áreynslu utandyra. Slökkvið á loftræstingu.
		Óholl		
2.600-9.000	**1,0-3,0**	Einkenni frá öndunarfærum líkleg hjá öllum einstaklingum, einkum einstaklingum með undirliggjandi öndunarfærasjúkdóma.	Dveljið innandyra og lokið gluggum. Slökkvið á loftræstingu.	Forðist áreynslu utandyra. Þeir sem hafa tök á haldi sig innandyra, loki gluggum og slökkvi á loftræstingu.
2.600	**1,0**	Vinnuverndarmörk í 15 mín.	Öll vinna bönnuð nema með viðeigandi öndunargrímum.	Öll vinna bönnuð nema með viðeigandi öndunargrímum.
		Mjög óholl		
9.000-14.000	**3,0-5,0**	Allir líklegir til að finna fyrir miðlungs-eða alvarlegum einkennum frá öndunarfærum.	Dveljið innandyra og lokið gluggum. Slökkvið á loftræstingu. Fylgist með ráðleggingum yfirvalda.	Dveljið innandyra og lokið gluggum. Slökkvið á loftræstingu. Fylgist með ráðleggingum yfirvalda.
		Hættuástand		
> 14.000	**>5,0**	Alvarleg einkenni frá öndunarfærum líkleg.	Dveljið innandyra og lokið gluggum. Slökkvið á loftræstingu. Fylgist með ráðleggingum yfirvalda.	Dveljið innandyra og lokið gluggum. Slökkvið á loftræstingu. Fylgist með ráðleggingum yfirvalda.

*Öll börn. Fullorðnir með astma (sögu um ýl og/eða surg fyrir brjósti, eða greindan astma), berkjubólgu, lungnaþembu og hjarta- og æðasjúkdóma. Þessar leiðbeiningar gilda einnig um barnshafandi konur.

Vinnuverndarmörk

Fari styrkur SO_2 yfir mengunarmörkin 1.300 µg/m^3 að meðaltali yfir 8 klst. tímabil skal stytta vinnutímann í hlutfalli við styrk mengunarinnar eða starfsmenn noti viðeigandi öndunargrímur.
Fari styrkur SO_2 yfir mengunarmörkin 2.600 µg/m^3 að meðaltali á 15 mín. tímabili skal vinnu hætt eða starfsmenn noti viðeigandi öndunargrímur.
Sjá nánar á vef Vinnueftirlitsins.

Almennar ráðleggingar

- Lungna- og hjartasjúklingar hafi sín lyf tiltæk.
- Andið sem mest með nefi og forðist líkamlega áreynslu utandyra í mikilli mengun því það dregur úr SO_2 sem kemst niður í lungu.
- Dvöl innanhúss með lokaða glugga og slökkt á loftræstingu veitir verulega vörn fyrir menguninni.

Frekari ráðstafanir

Ef mengun er mikil og fólk finnur fyrir óþægindum jafnvel þó það dvelji innandyra er hægt að grípa til ráðstafana til að draga úr styrk SO_2 innanhúss með því að útbúa einfaldan hreinsibúað.

1. Takið 5 gr. af venjulegum matarsóda og leysið upp í 1 lítra af vatni.
2. Bleytið einhvers konar klút t.d. viskastykki, þunnt handklæði eða gamaldags gasbleiu í þessari lausn.
3. Vindið mesta vatnið úr þannig að ekki leki.
4. Festið þennan raka klút upp á einhvers konar grind, t.d. þurrkgrind fyrir þvott og festið á öllum hliðum t.d með þvottaklemmum.
5. Stillið grindinni upp í því herbergi sem ætlunin er að hreinsa loftið í.
6. Til að klúturinn haldi virkni sinni þarf hann að vera rakur og gott er að halda rakastiginu við með því að úða á hann vatni t.d. úr blómaúðabrúsa.
7. Til að auka virknina er gott að láta borðviftu blása á klútinn. **ATH!** viftan er rafmagnstæki, gætið þess að raki úr klútum eða frá úðabrúsanum komist ekki í viftuna. Viftan þarf að standa í öruggri fjarlægð frá klútnum, ekki nær en um það bil tvo metra. Alls ekki breiða klútinn yfir sjálfa viftuna.
8. Ef vifta er ekki til staðar gerir klúturinn samt gagn sérstaklega ef honum er komið fyrir nálægt ofnum, en loftflæði er meira við ofna en aðra staði í íbúðinni. **ATH!** Ekki er þörf á að breiða klútinn yfir ofninn, nóg er að hann standi á grind við hliðina á ofninum. Gætið varúðar við rafmagnsofna, aldrei má hindra loftflæði að þeim eða breiða neitt yfir þá.
9. Ef langvarandi mengun er til staðar þarf að skola klútinn undir rennandi vatni tvisvar á dag og setja hann aftur í matarsódalausnina.

Mikil mengun utandyra

Ef fólk þarf nauðsynlega að vera utandyra í mikilli mengun sem veldur óþægindum er gagnlegt að hafa blautan klút fyrir vitum en það dregur úr brennisteinsmengun í innöndunarlofti. Klútur vættur í matarsódalausn, eins og lýst er hér að ofan, er þó áhrifaríkari. Athugið að vatnið í klútnum gerir hann mun þéttari þannig að erfiðara er að anda í gegnum hann. Það getur reynst lasburða einstaklingum erfitt og jafnvel hættulegt.

Einnig er hægt að taka hefðbunda rykgrímu eins og fæst í byggingavöruverslunum og bleyta hana í matarsódalausn. Hins vegar eru rykgrímur það þéttar að vatnið sem bætist við eykur mótstöðu í grímunni og gerir það erfitt að anda í gegnum hana. Því þarf að láta hana þorna alveg sem tekur um sólarhring.
ATHUGIÐ: Blautir klútar eða rykgrímur sem áður hafa verið bleyttar í matarsódalausn duga aðeins í stuttan tíma (nokkrar mínútur) og hafa ekki sambærilega virkni og gasgrímur. Þetta eru því ekki úrræði sem hægt er að nota í langan tíma og alls ekki í mikilli nálægð við eldgosið. Þar duga einungis gasgrímur en þær eru áhrifaríkasta aðferðin til að draga úr SO_2 í innöndunarlofti. Gasgrímur eru hins vegar víða ekki tiltækar og ekki ráðlagðar nema þar sem mikillar mengunar verður vart svo sem nálægt eldstöð og þá samkvæmt sérstökum ráðleggingum yfirvalda.

Sóttvarnalæknir, Umhverfisstofnun, Vinnueftirlitið og almannavarnardeild ríkislögreglustjóra.

28. nóvember 2014

Reglugerð um bólusetningar nr. 221/2001 sbr. breytingu nr. 904/2013

1. gr.

Reglugerð þessi tekur til bólusetninga (ónæmisaðgerða) og framkvæmdar þeirra á Ís¬landi. Allar bólusetningar skal skrá. Sóttvarnalæknir er ábyrgur fyrir því að halda skrá um bólusetningar. Sóttvarnalæknir skipuleggur og samræmir bólusetningar um land allt.

2. gr.

Bólusetningar barna

Bólusetningum barna er ætlað að verja börn gegn alvarlegum smitsjúkdómum. Börnum með lögheimili hér á landi skal boðin bólusetning gegn eftirtöldum sjúkdómum þeim að kostnaðarlausu:

1. barnaveiki
2. hettusótt
3. H. influenzae b sjúkdómi
4. kikhósta
5. mænusótt
6. mislingum
7. rauðum hundum
8. stífkrampa
9. meningókokkasjúkdómi C
10. pneumókokkasjúkdómi
11. leghálskrabbameini af völdum HPV

3. gr.

Bólusetningar fullorðinna

Bólusetningum fullorðinna er ætlað að viðhalda endingu barnabólusetninga eða bæta slíka bólusetningu hafi hún ekki verið gerð á barnsaldri. Skal fullorðnum gefinn kostur á bólusetningum gegn eftirtöldum sjúkdómum:

1. stífkrampa
2. barnaveiki
3. kikhósta
4. lömunarveiki.

Öllum sem eru í sérstökum áhættuhópum, og sóttvarnalæknir tilgreinir, skal gefinn kostur á bólusetningum gegn pneumókokkasýkingum.

Öllum sem eru í sérstökum áhættuhópum, og sóttvarnalæknir tilgreinir, skal gefinn kostur á bólusetningum gegn árstíðabundinni inflúensu og er bóluefni þeim að kostnaðarlausu.

Greiðsluhlutdeild fullorðinna samkvæmt 1. og 2. mgr. skal fylgja lögum og reglugerðum um sjúkratryggingar.

4. gr.

Aðrar bólusetningar.

Bólusetningar vegna opinberra sóttvarnaráðstafana skv. 12. gr. sóttvarnalaga þegar hætta er alvarlegum farsóttum vegna eftirtalinna sjúkdóma eða þegar sérstök smithætta er fyrir hendi innanlands skal vera mönnum að kostnaðarlausu:

1. berklaveiki
2. lifrarbólgu A
3. lifrarbólgu B
4. meningókokkasjúkdómi
5. öðrum sjúkdómum sem unnt er og brýnt að beita virkri bólusetningu gegn.

5. gr.

Gefa skal kost á bólusetningum, sem hinn bólusetti greiðir sjálfur fyrir, gegn viðeigandi sjúkdómum vegna ferða fólks úr landi.

6. gr.

Bólusetningar samkvæmt þessari reglugerð annast heilsugæslustöðvar eða aðrir þeir sem sóttvarnalæknir ákveður að geti haft þær með höndum. Sóttvarnalæknir skal bjóða út innkaup á bóluefnum.

7. gr.

Heilsugæslustöðvar skulu í samráði við sóttvarnalækni gera almenningi kunnugt, hvernig bólusetningum er hagað.

8. gr.

Sóttvarnalæknir lætur heilsugæslustöðvum í té sérstakt skírteini sem afhent eru þeim sem bólusettir eru. Skal skrá í skírteinið allar bólusetningar sem viðkomandi gengst undir samkvæmt reglugerð þessari.

9. gr.

Sá sem bólusetur skal skrá bólusetninguna í sjúkraskrá. Þar skal koma fram hvaða bóluefni var gefið, hvenær það var gefið og hvort aukaverkanir hlutust af. Ef ekki er bólusett skv. 2. gr. skal skrá ástæðu þess.

10. gr.

Heilsugæslustöðvar, og aðrir þeir sem bólusetja, skulu senda sóttvarnalækni skýrslur um þær, sbr. 1 gr., a.m.k. árlega eða oftar samkvæmt ákvörðun hans. Senda skal sóttvarnalækni tilkynningar um hver var bólusettur, með hvaða bóluefni og hvenær, samkvæmt ákvörðun sóttvarnalæknis.

Tilkynna skal um aukaverkanir bólusetningar samkvæmt ákvörðun sóttvarnalæknis.

11. gr.

Reglugerð þessi, sem sett er með stoð í 18. gr., sbr. 17. gr. sóttvarnalaga nr. 19/1997, með síðari breytingu, öðlast þegar gildi.

Heilbrigðis- og tryggingamálaráðuneytinu, 9. mars 2001.

Ingibjörg Pálmadóttir

Davíð Á. Gunnarsson.

Almennar bólusetningar barna
á Íslandi 2014

Aldur við bólusetningu	Bólusetning gegn:
3 mán.	Kikhósta, barnaveiki, stífkrampa, Haemophilus influenzae af gerð b (Hib) og mænusótt í einni sprautu. Pneumókokkum í annarri sprautu.
5 mán.	Kikhósta, barnaveiki, stífkrampa, Haemophilus influenzae af gerð b (Hib) og mænusótt í einni sprautu. Pneumókokkum í annarri sprautu.
6 mán.	Meningókokkum C
8 mán.	Meningókokkum C
12 mán.	Kikhósta, barnaveiki, stífkrampa, Haemophilus influenzae af gerð b (Hib) og mænusótt í einni sprautu. Pneumókokkum í annarri sprautu.
18 mán.	Mislingum, hettusótt og rauðum hundum í einni sprautu.
4 ára	Barnaveiki, stífkrampa og kikhósta í einni sprautu.
12 ára	Mislingum, hettusótt og rauðum hundum í einni sprautu. Leghálskrabbameini (HPV) eingöngu fyrir stúlkur. Þrjár sprautur gefnar á 6–12 mán. tímabili.
14 ára	Barnaveiki, stífkrampa og kikhósta ásamt mænusótt í einni sprautu.

Reglugerð nr. 221/2012 um skýrslugerð vegna sóttvarna sbr. breytingu nr. 816/2012

I. KAFLI

Um skráningarskyldu

1. gr.

Sóttvarnalæknir er ábyrgur fyrir því að haldin sé sjúkdómaskrá sem tekur til smitsjúkdóma, sjúkdómsvalda þeirra, sjúkdóma af völdum eiturefna og geislavirkra efna, óvenjulegra og óvæntra atburða sem geta haft alvarlegar heilsufarslegar afleiðingar meðal þjóða heims, sýklalyfjanotkunar og bólusetninga (ónæmisaðgerða), sbr. reglugerð um bólusetningar á Íslandi. Gæta skal fyllsta trúnaðar um allar einkalífsupplýsingar sem fram koma í smitsjúkdómaskrá og gilda um skrána sömu reglur og aðrar sjúkraskrár. Ýtrustu varúðar skal gætt við meðferð, vörslu og sendingu upplýsinga um tilkynningarskylda sjúkdóma.

Til að halda skrá um sýklalyfjanotkun kallar sóttvarnalæknir eftir upplýsingum úr lyfjagagnagrunni landlæknis og frá sjúkrastofnunum. Þær upplýsingar mega ekki bera með sér önnur persónuauðkenni en aldur, kyn og búsetu samkvæmt póstnúmeri þeirra sem lyfjunum hefur verið ávísað á, sérgrein læknis, sjúkrastofnun og deild þar sem sjúkrastofnun er deildaskipt. Upplýsingar um sýklalyfjanotkun skulu vera ópersónugreinanlegar. Forstöðumönnum heilbrigðisstofnana er skylt að senda sóttvarnalækni upplýsingar um magn sýklalyfja sem notað er á viðkomandi stofnun, skipt eftir deildum þar sem það á við.

Sóttvarnalæknir gefur nánari fyrirmæli um tilhögun skráningar og tilkynningar í smitsjúkdómaskrá og skrá um sýklalyfjanotkun, meðal annars um hvaða ráðstafanir skuli viðhafðar til að tryggja öryggi persónuupplýsinga varðandi tilkynningarskylda sjúkdóma.

2. gr.

Þeir sjúkdómar, sjúkdómsvaldar og atburðir sem sóttvarnalög fjalla um eru skráningarskyldir og geti þeir ógnað almannaheill eru þeir jafnframt tilkynningarskyldir.

Með skráningarskyldu er átt við skyldu til að senda sóttvarnalækni ópersónugreindar upplýsingar en með tilkynningarskyldu er átt við skyldu til að senda persónugreindar upplýsingar um sjúkdómstilvik.

3. gr.

Læknum er skylt að skrá upplýsingar um skráningar- og tilkynningarskylda sjúkdóma á þar til gerð eyðublöð eða með rafrænum hætti samkvæmt nánari fyrirmælum sóttvarnalæknis, sbr. 1. gr. Sama gildir um forstöðumenn rannsóknastofa, sjúkradeilda og annarra heilbrigðisstofnana. Skrá um smitsjúkdóma skal senda sóttvarnalækni mánaðarlega eða oftar ef hann telur þörf á því.

Læknum og hjúkrunarfræðingum er skylt að skrá í sjúkraskrá samkvæmt nánari fyrirmælum sóttvarnalæknis, sbr. 1. gr., allar bólusetningar sem þeir framkvæma. Læknar tilkynna sóttvarnalækni um bólusetningar sem gerðar hafa verið.

II. KAFLI

Skráningarskyldir sjúkdómar

4. gr.

Skráningarskyldir sjúkdómar eru:

adenóveirusýking
afbrigðilegar berklasýkingar
barkakýlisbólga
berkjubólga
berkjulungnabólga
bráður niðurgangur
calicíveirusýking (nóróveirusýking)
clostridium difficile sýking
efri loftvegasýking
enteróveirusýking
eyrnabólga
flatlús
hálsbólga
heilabólga (encephalitis/meningoencephalitis)
heilahimnubólga af völdum sýkla
heilahimnubólga af óþekktum toga
hlaupabóla
höfuðlús
inflúensa
kláðamaur
kynfæravörtur (condyloma genitalis)
lungnabólga
Lyme sjúkdómur (borreliosis)
matareitrun af völdum sýkla eða eiturefna þeirra
metapneumóveirusýking
njálgur
parainflúensa
psittacosis
ristill (herpes zoster)
rótaveirusýking
RS veirusýking
skarlatssótt
skútabólga
speldisbólga (epiglottitis)
sýkingar af völdum fjölónæmra sýkla
þvagrásarbólga af óþekktri orsök
veirusýking, ótilgreind

III. KAFLI

Tilkynningarskyldir sjúkdómar, sjúkdómsvaldar þeirra og atburðir sem ógna heilsu manna

5. gr.

Tilkynningarskyldir sjúkdómar eru:

alnæmi (AIDS)
anisakíusýking
bandormslirfusýki (cysticercosis)
barnaveiki
berklar
blæðandi veiruhitasóttir
bólusótt
bótúlismi
breiðvirkir betalaktamasamyndandi sýklar
bráð sjúkdómseinkenni af völdum eiturefna og geislavirkra efna
Córónaveirulungnabólga (SARS/heilkenni alvarlegrar bráðrar lungnabólgu - HABL)
Creutzfeldt Jacob veiki og afbrigði hennar
enteróhemórrhagísk E. coli sýking
giardíasýking
gulusótt
hettusótt
hérasótt (tularemia)
HIV-sýking
holdsveiki
hundaæði
huldusótt (Q-fever)
inflúensa A sem valdið getur heimsfaraldri
ífarandi hemophilus influenzea, sjúkdómur gerð b
ífarandi meningókokkasjúkdómur
ífarandi pneumókokkasýkingar í blóði, lið, beini og heilahimnu
Jersiníusýking (Y. enterocolitica, Y. psudotuberculosis)
kampýlóbaktersýking
kikhósti
klamýdíusýking
kólera og kólerulíkar sýkingar (vibriosis og líkir sýkingavaldar)
launsporasýking (cryprtósporidium sýking)
legíónellusýking
lekandi
leptóspirusýking
lifrarbólga A
lifrarbólga B (bráð, viðvarandi)
lifrarbólga C
lifrarbólga vegna annarra veira
listeríusýking
lömunarveiki
malaría

meticillín ónæmur staphylokoccus aureus (MÓSA)
miltisbrandur
mislingar
óvæntir atburðir sem ógnað geta heilsu manna (óvænt aukning sjúkdómstilvika eða dauðsfalla)
rauðir hundar (einnig meðfæddir)
salmonellusýking
sárasótt (einnig meðfædd eða nýburasýking)
shígellusýking
stífkrampi
sullaveiki
svarti dauði
sýkingar í tengslum við veitingu heilbrigðisþjónustu
toxóplasmasýking
taugaveiki/taugaveikibróðir
tríkínusýking
vanómýcín ónæmir enterókokkar
vesturnílarveirusótt
öldusótt (brucellosis)

6. gr.

Tilkynningu um tilkynningarskyldan sjúkdóm, sjúkdómsvald eða óvænta atburði sem ógnað geta heilsu manna skal senda sóttvarnalækni án tafar eða samkvæmt nánari fyrirmælum hans. Sóttvarnalækni er heimilt að fela göngudeildum smitsjúkdóma og rannsóknarstofum, sbr. ákvæði reglugerðar um sóttvarnarráðstafanir, að halda skrá yfir tilkynningarskyld sjúkdómstilfelli og sjúkdómsvalda.
Á eyðublaði skal meðal annars koma fram:

1. Heiti sjúkdóms eða sjúkdómsvalds og greiningarnúmer samkvæmt alþjóðlegu sjúkdóma- og dánarmeinaskránni sem gildir hverju sinni.
2. Hvenær, hvernig og hvaða sjúkdómsgreining eða greining sjúkdómsvalds var staðfest.
3. Persónuauðkenni og kyn hins sýkta.
4. Í hvaða sóttvarnaumdæmi hinn sýkti býr, þ.e. dvalarstaður.
5. Nafn tilkynnanda, læknisnúmer, vinnustaður, undirskrift og dagsetning tilkynningar.

7. gr.

Bólusetningar eru tilkynningarskyldar, sbr. reglugerð um bólusetningar á Íslandi.

IV. KAFLI

Gildistaka.

8. gr.

Reglugerð þessi, sem sett er með stoð í 18. gr., sbr. 3. gr., sóttvarnalaga nr. 19/1997, öðlast þegar gildi. Jafnframt fellur úr gildi reglugerð nr. 420/2008.

Reglugerð þessi er sett með hliðsjón af ákvörðunum framkvæmdastjórnar nr. 2000/96/EB og 2009/312/EB.

Velferðarráðuneytinu, 23. febrúar 2012.

Guðbjartur Hannesson

Margrét Björnsdóttir

DECISIONS

COMMISSION IMPLEMENTING DECISION

of 8 August 2012

amending Decision 2002/253/EC laying down case definitions for reporting communicable diseases to the Community network under Decision No 2119/98/EC of the European Parliament and of the Council

(notified under document C(2012) 5538)

(Text with EEA relevance)

(2012/506/EU)

THE EUROPEAN COMMISSION,

HAS ADOPTED THIS DECISION:

Article 1

The Annex to Decision 2002/253/EC is replaced by the Annex to this Decision.

Article 2

This Decision is addressed to the Member States.

Done at Brussels, 8 August 2012.

For the Commission

John DALLI

Member of the Commission

ANNEX

1. **EXPLANATION OF THE SECTIONS USED IN THE DEFINITION AND CLASSIFICATION OF CASES**

Clinical criteria

Clinical criteria include common and relevant signs and symptoms of the disease which either individually or in combination constitutes a clear or indicative clinical picture of the disease. They give the general outline of the disease and do not necessarily indicate all the features needed for individual clinical diagnosis.

Laboratory criteria

Laboratory criteria are a list of laboratory methods that are used to confirm a case. Usually only one of the listed tests will be enough to confirm the case. If a combination of methods is needed to meet the laboratory confirmation, this is specified. The type of specimen to be collected for the laboratory tests is only specified when only certain specimen types are considered relevant for the confirmation of a diagnosis. Laboratory criteria for a probable case are included for some agreed exceptional cases. Those laboratory criteria consist of a list of laboratory methods which can be used to support the diagnosis of a case but which are not confirmatory.

Epidemiological criteria and epidemiological link

Epidemiological criteria are deemed to have been met when an epidemiological link can be established.

Epidemiological link, during the incubation period, means one of the following six:

— Human to human transmission: the fact that a person has had contact with a laboratory confirmed human case in such a way as to have had the opportunity to acquire the infection

— Animal to human transmission: the fact that a person has had contact with an animal with a laboratory confirmed infection/colonisation in such a way as to have had the opportunity to acquire the infection

— Exposure to a common source: the fact that a person has been exposed to the same common source or vehicle of infection, as a confirmed human case

— Exposure to contaminated food/drinking water: the fact that a person has consumed food or drinking water with a laboratory confirmed contamination or has consumed potentially contaminated products from an animal with a laboratory confirmed infection/colonisation

— Environmental exposure: the fact that a person has bathed in water or has had contact with a contaminated environmental source that has been laboratory confirmed

— Laboratory exposure: the fact that a person has worked in a laboratory where there is a potential for exposure

A person may be considered epidemiologically linked to a confirmed case if at least one case in the chain of transmission is laboratory confirmed. In case of an outbreak of faeco-oral or airborne transmitted infections, the chain of transmission does not necessarily need to be established to consider a case epidemiologically linked.

Transmission may occur by one or more of the following routes:

— Airborne: by projection of aerosol from an infected person onto the mucous membranes while coughing, spitting, singing or talking, or when microbial aerosols dispersed into the atmosphere are inhaled by others
— Contact: direct contact with an infected person (faecal-oral, respiratory droplets, skin or sexual exposure) or animal (e.g. biting, touching) or indirect contact to infected materials or objects (infected fomites, body fluids, blood)
— Vertical: from mother to child, often in utero, or as a result of the incidental exchange of body fluids usually during the perinatal period
— Vector transmission: indirect transmission by infected mosquitoes, mites, flies and other insects which transmit disease to humans through their bites
— Food or water: consumption of potentially contaminated food or drinking water.

Case classification

Cases are classified as 'possible', 'probable' and 'confirmed'. The incubation periods for diseases are given in the additional information to facilitate the assessment of the epidemiological link.

Possible case

A possible case means a case classified as possible for reporting purposes. It is usually a case meeting the clinical criteria as described in the case definition without epidemiological or laboratory evidence of the disease in question. The definition of a case as possible has high sensitivity and low specificity. It allows for detection of most cases but some false positives cases will be included into this category.

Probable case

A probable case means a case classified as probable for reporting purposes. It is usually a case with clinical criteria and an epidemiological link as described in the case definition. Laboratory tests for probable cases are specified only for some diseases.

Confirmed case

A confirmed case means a case classified as confirmed for reporting purposes. Confirmed cases are laboratory confirmed and may or may not fulfil the clinical criteria as described in the case definition. The definition of a case as confirmed is highly specific and less sensitive; therefore most of the collected cases will be true cases although some will be missed.

The clinical criteria of some diseases do not allude to the fact that many acute cases are asymptomatic, (e.g. hepatitis A, B and C, campylobacteriosis, salmonellosis) although these cases may still be important from a public health perspective on national level.

Confirmed cases fall in one of the three subcategories listed below. They will be assigned to one of those subcategories during the analysis of data using the variables collected within the context of the case information.

Laboratory-confirmed case with clinical criteria

The case meets the laboratory criteria for case confirmation and the clinical criteria included in the case definition.

Laboratory-confirmed case with unknown clinical criteria

The case meets the laboratory criteria for case confirmation but there is no information available regarding the clinical criteria (e.g. only laboratory report).

Laboratory-confirmed case without clinical criteria

The case meets the laboratory criteria for case confirmation but doesn't meet the clinical criteria in the case definition or is asymptomatic.

2. **CASE DEFINITIONS OF COMMUNICABLE DISEASES**

2.1. ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS) AND HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION

Clinical Criteria (AIDS)

Any person who has any of the clinical conditions as defined in the European AIDS case definition for:

— Adults and adolescents ≥ 15 years

— Children < 15 years of age

Laboratory Criteria (HIV)

— Adults, adolescents and children aged ≥ 18 months

At least one of the following three:

— Positive result of a HIV screening antibody test or a combined screening test (HIV antibody and HIV p24 antigen) confirmed by a more specific antibody test (e.g. Western blot)

— Positive result of 2 EIA antibody test confirmed by a positive result of a further EIA test

— Positive results on two separate specimens from at least one of the following three:

  — Detection of HIV nucleic acid (HIV-RNA, HIV-DNA)

  — Demonstration of HIV by HIV p24 antigen test, including neutralisation assay

  — Isolation of HIV

— Children aged < 18 months

Positive results on two separate specimens (excluding cord blood) from at least one of the following three:

— Isolation of HIV

— Detection of HIV nucleic acid (HIV-RNA, HIV-DNA)

— Demonstration of HIV by HIV p24 antigen test, including neutralisation assay in a child ≥ 1 month of age

Epidemiological Criteria NA

Case Classification

A. **Possible case** NA

B. **Probable case** NA

C. **Confirmed case**

— HIV infection

Any person meeting the laboratory criteria for HIV infection

— AIDS

Any person meeting the clinical criteria for AIDS and the laboratory criteria for HIV infection

2.2. ANTHRAX (*Bacillus anthracis*)

Clinical Criteria

Any personwith at least one of the following clinical forms:

Cutaneous anthrax

At least one the following two:

— Papular or vesicular lesion

— Depressed black eschar with surrounding oedema

Gastrointestinal anthrax

— Fever or feverishness

AND at least one of the following two:

— Severe abdominal pain

— Diarrhoea

Inhalational anthrax

— Fever or feverishness

AND at least one of the following two:

— Acute respiratory distress

— Radiological evidence of mediastinal widening

Meningeal/meningoencephalitic anthrax

— Fever

AND at least one of the following three:

— Convulsions

— Loss of consciousness

— Meningeal signs

Anthrax septicaemia

Laboratory Criteria

— Isolation of *Bacillus anthracis* from a clinical specimen

— Detection of *Bacillus anthracis* nucleic acid in a clinical specimen

Positive nasal swab without clinical symptoms does not contribute to a confirmed diagnosis of a case

Epidemiological Criteria

At least one of the following three epidemiological links:

— Animal to human transmission

— Exposure to a common source

— Exposure to contaminated food/drinking water

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.3. AVIAN INFLUENZA A/H5 OR A/H5N1 IN HUMANS

Clinical Criteria

Any person with one of the following two:

— Fever AND signs and symptoms of acute respiratory infection

— Death from an unexplained acute respiratory illness

Laboratory Criteria

At least one of the following three:

— Isolation of influenza A/H5N1 from a clinical specimen

— Detection of influenza A/H5 nucleic acid in a clinical specimen

— Influenza A/H5 specific antibody response (four-fold or greater rise or single high titre)

Epidemiological Criteria

At least one of the following four:

— Human to human transmission by having been in close contact (within 1 metre) to a person reported as probable or confirmed case

— Laboratory exposure: where there is a potential exposure to influenza A/H5N1

— Close contact (within 1 metre) with an animal with confirmed A/H5N1 infection other than poultry or wild birds (e.g. cat or pig)

— Reside in or have visited an area where influenza A/H5N1 is currently suspected or confirmed (1) AND at least one of the following two:

— Having been in close contact (within 1 metre) with sick or dead domestic poultry or wild birds (2) in the affected area

— Having been in a home or a farm where sick or dead domestic poultry have been reported in the previous month in the affected area

Case Classification

A. **Possible case**

Any person meeting the clinical and the epidemiological criteria

B. **Probable case**

Any person with a positive test for influenza A/H5 or A/H5N1 performed by a laboratory which is not a National Reference Laboratory participating in the EU Community Network of Reference Laboratories for human influenza (CNRL)EN L 262/6 Official Journal of the European Union 27.9.2012

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(1) See World Organisation for Animal Health — OIE — and European Commission (SANCO) Animal Disease Notification System (ADNS), available at: http://www.oie.int/eng/en_index.htm, and http://ec.europa.eu/food/animal/diseases/adns/index_en.htm#)

(2) This does not include seemingly well birds that have been killed, for example by hunting.

C. **Nationally confirmed case**

Any person with a positive test for influenza A/H5 or A/H5N1 performed by a National Reference Laboratory participating in the EU Community Network of Reference Laboratories for human influenza (CNRL)

D. **WHO confirmed case**

Any person with a laboratory confirmation by a WHO Collaborating Centre for H5

2.4. BOTULISM (*Clostridium botulinum*)

Clinical Criteria

Any person with at least one of the following clinical forms:

Food-borne and wound botulism

At least one of the following two:

— Bilateral cranial nerve impairment (e.g. diplopia, blurred vision, dysphagia, bulbar weakness)

— Peripheral symmetric paralysis

Infant botulism

Any infant with at least one of the following six:

— Constipation

— Lethargy

— Poor feeding

— Ptosis

— Dysphagia

— General muscle weakness

The type of botulism usually encountered in infants (< 12 months of age) can affect children also over 12 months of age and occasionally adults, with altered gastrointestinal anatomy and microflora

Laboratory Criteria

At least one of the following two:

— Isolation of *Clostridium botulinum* for infant botulism (stool) or wound botulism (wound) (isolation of *Clostridium botulinum* in stool of adults not relevant for the diagnosis of food-borne botulism)

— Detection of botulinum toxin in a clinical specimen

Epidemiological Criteria

At least one of the following two epidemiological links:

— Exposure to a common source (e.g. food, sharing of needles or other devices)

— Exposure to contaminated food/drinking water

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.5. BRUCELLOSIS (*Brucella* spp.)

Clinical Criteria

Any person with Fever

And at least one of following seven:

— Sweating (profuse, malodorous, specially nocturnal)
— Chills
— Arthralgia
— Weakness
— Depression
— Headache
— Anorexia

Laboratory Criteria

At least one of the following two:
— Isolation of *Brucella* spp. from a clinical specimen
— *Brucella* specific antibody response (Standard Agglutination Test, Complement Fixation, ELISA)

Epidemiological Criteria

At least one of the following four epidemiological links:
— Exposure to contaminated food/drinking water
— Exposure to products from a contaminated animal (milk or milk products)
— Animal to human transmission (contaminated secretions or organs e.g. vaginal discharge, placenta)
— Exposure to a common source

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.6. CAMPYLOBACTERIOSIS (*Campylobacter* spp.)

Clinical Criteria

Any person with at least one of the following three:
— Diarrhoea
— Abdominal pain
— Fever

Laboratory Criteria

— Isolation of *Campylobacter* spp. from stool or blood
Differentiation of *Campylobacter* spp. should be performed if possible

Epidemiological Criteria

At least one of the following five epidemiological links:
— Animal to human transmission
— Human to human transmission
— Exposure to a common source
— Exposure to contaminated food/drinking water
— Environmental exposure

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.7. CHLAMYDIAL INFECTION (*Chlamydia trachomatis*), INCLUDING LYMPHOGRANULOMA VENEREUM (LGV)

Clinical Criteria

Any person with at least one of the following clinical forms:

Chlamydial infection non-LGV

At least one of the following six:

— Urethritis

— Epididymitis

— Acute salpingitis

— Acute endometritis

— Cervicitis

— Proctitis

In newborn children at least one of the following two:

— Conjunctivitis

— Pneumonia

LGV

At least one of the following five:

— Urethritis

— Genital ulcer

— Inguinal lymphadenopathy

— Cervicitis

— Proctitis

Laboratory Criteria

Chlamydial infection non-LGV

At least one of the following three:

— Isolation of *Chlamydia trachomatis* from a specimen of the ano-genital tract or from the conjunctiva

— Demonstration of *Chlamydia trachomatis* by DFA test in a clinical specimen

— Detection of *Chlamydia trachomatis* nucleic acid in a clinical specimen

LGV

At least one of the following two:

— Isolation of *Chlamydia trachomatis* from a specimen of the ano-genital tract or from the conjunctiva

— Detection of *Chlamydia trachomatis* nucleic acid in a clinical specimen

AND

— Identification of serovar (genovar) L1, L2 or L3

Epidemiological Criteria

An epidemiological link by human to human transmission (sexual contact or vertical transmission)

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the laboratory criteria

2.8. CHOLERA (*Vibrio cholerae*)

Clinical Criteria

Any person with at least one of the following two:

— Diarrhoea

— Vomiting

Laboratory Criteria

— Isolation of *Vibrio cholerae* from a clinical specimen

AND

— Demonstration of O1 or O139 antigen in the isolate

AND

— Demonstration of cholera-enterotoxin or the cholera-enterotoxin gene in the isolate

Epidemiological Criteria

At least one of the following four epidemiological links:

— Exposure to a common source

— Human to human transmission

— Exposure to contaminated food/drinking water

— Environmental exposure

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.9. CREUTZFELDT-JAKOB DISEASE, VARIANT (vCJD)

Preconditions

— Any person with a progressive neuropsychiatric disorder with a duration of illness of at least six months

— Routine investigations do not suggest an alternative diagnosis

— No history of exposure to human pituitary hormones or human dura mater graft

— No evidence of a genetic form of transmissible spongiform encephalopathy

Clinical Criteria

Any person with at least four of the following five:

— Early psychiatric symptoms (3)

— Persistent painful sensory symptoms (4)

— Ataxia

— Myoclonus or chorea or dystonia

— Dementia

Diagnostic Criteria

Diagnostic criteria for case confirmation:

— Neuropathological confirmation: spongiform change and extensive prion protein deposition with florid plaques throughout the cerebrum and cerebellum

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(3) Depression, anxiety, apathy, withdrawal, delusions.

(4) This includes both frank pain and/or dysaesthesia.

Diagnostic criteria for a probable or a possible case:

— EEG does not show the typical appearance (5) of sporadic CJD (6) in the early stages of the illness

— Bilateral pulvinar high signal on MRI brain scan

— A positive tonsil biopsy (7)

Epidemiological Criteria

An epidemiological link by human to human transmission (e.g. blood transfusion)

Case Classification

A. **Possible case**

Any person fulfilling the preconditions

AND

— meeting the clinical criteria

AND

— a negative EEG for sporadic CJD (8)

B. **Probable case**

Any person fulfilling the preconditions

AND

— meeting the clinical criteria

AND

— a negative EEG for sporadic CJD (9)

AND

— a positive MRI brain scan

OR

— Any person fulfilling the preconditions

AND

— a positive tonsil biopsy

C. **Confirmed case**

Any person fulfilling the preconditions

AND

meeting the diagnostic criteria for case confirmation

(5) The typical appearance of the EEG in sporadic CJD consists of generalised periodic complexes at approximately one per second. These may occasionally be seen in the late stages of vCJD.

(6) See footnote 5.

(7) Tonsil biopsy is not recommended routinely nor in cases with EEG appearances typical of sporadic CJD, but may be useful in suspect cases in which the clinical features are compatible with vCJD and MRI does not show pulvinar high signal.

(8) See footnote 5.

(9) See footnote 5.

2.10. CRYPTOSPORIDIOSIS (*Cryptosporidium* spp.)

Clinical Criteria

Any person with at least one of the following two:

— Diarrhoea

— Abdominal pain

Laboratory Criteria

At least one of the following four:

— Demonstration of *Cryptosporidium* oocysts in stool

— Demonstration of *Cryptosporidium* in intestinal fluid or small-bowel biopsy specimens

— Detection of *Cryptosporidium* nucleic acid in stool

— Detection of *Cryptosporidium* antigen in stool

Epidemiological Criteria

One of the following five epidemiological links:

— Human to human transmission

— Exposure to a common source

— Animal to human transmission

— Exposure to contaminated food/drinking water

— Environmental exposure

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.11. DIPHTHERIA (*Corynebacterium diphtheriae, Corynebacterium ulcerans* and *Corynebacterium pseudotuberculosis*)

Clinical Criteria

Any person with at least one of the following clinical forms:

Classic Respiratory Diphtheria:

An upper respiratory tract illness with laryngitis or nasopharyngitis or tonsillitis

AND

an adherent membrane/pseudomembrane

Mild Respiratory Diphtheria:

An upper respiratory tract illness with laryngitis or nasopharyngitis or tonsillitis

WITHOUT

an adherent membrane/pseudomembrane.

Cutaneous Diphtheria:

Skin lesion

Diphtheria of other sites:

Lesion of conjunctiva or mucous membranes

Laboratory Criteria

Isolation of toxin-producing *Corynebacterium diphtheriae, Corynebacterium ulcerans* or *Corynebacterium pseudotuberculosis* from a clinical specimen.

Epidemiological Criteria

At least one of the following epidemiological links:

— Human to human transmission

— Animal to human transmission

Case Classification

A. **Possible case**

Any person meeting the clinical criteria for classical respiratory diphtheria

B. **Probable case**

Any person meeting the clinical criteria for diphtheria (Classic Respiratory Diphtheria, Mild Respiratory Diphtheria, Cutaneous Diphtheria, Diphtheria of other sites) with an epidemiological link to a human confirmed case or with an epidemiological link to animal to human transmission

C. **Confirmed case**

Any person meeting the laboratory criteria AND at least one of the clinical forms

2.12. ECHINOCOCCOSIS (*Echinococcus* spp.)

Clinical Criteria

Not relevant for surveillance purposes

Diagnostic Criteria

At least one of the following five:

— Histopathology or parasitology compatible with *Echinococcus multilocularis* or *granulosus* (e.g. direct visualisation of the protoscolex in cyst fluid)

— Detection of *Echinoccocus granulosus* pathognomonic macroscopic morphology of cyst(s) in surgical specimens

— Typical organ lesions detected by imaging techniques (e.g. computerised tomography, sonography, MRI) AND confirmed by a serological test

— *Echinococcus* spp. specific serum antibodies by high-sensitivity serological test AND confirmed by a high specificity serological test

— Detection of *Echinococcus multilocularis* or *granulosus* nucleic acid in a clinical specimen

Epidemiological Criteria NA

Case Classification

A. **Possible case** NA

B. **Probable case** NA

C. **Confirmed case**

Any person meeting the diagnostic criteria

2.13. GIARDIASIS (*Giardia lamblia*)

Clinical Criteria

Any person with at least one of the following four:

— Diarrhoea

— Abdominal pain

— Bloating

— Signs of malabsorption (e.g. steatorrhoea, weight loss)

Laboratory Criteria

At least one of the following two:

— Demonstration of *Giardia lamblia* cysts or trophozoites in stool, duodenal fluid or small-bowel biopsy

— Demonstration of *Giardia lamblia* antigen in stool

Epidemiological Criteria

At least one of the following four epidemiological links:

— Exposure to contaminated food/drinking water

— Human to human transmission

— Exposure to a common source

— Environmental exposure

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.14. GONORRHOEA (*Neisseria gonorrhoeae*)

Clinical Criteria

Any person with at least one of the following eight:

— Urethritis

— Acute salpingitis

— Pelvic inflammatory disease

— Cervicitis

— Epididymitis

— Proctitis

— Pharyngitis

— Arthritis

OR

Any newborn child with conjunctivitis

Laboratory Criteria

At least one of the following four:

— Isolation of *Neisseria gonorrhoeae* from a clinical specimen

— Detection of *Neisseria gonorrhoeae* nucleic acid in a clinical specimen

— Demonstration of *Neisseria gonorrhoeae* by a non-amplified nucleic acid probe test in a clinical specimen

— Microscopic detection of intracellular gram negative diploccocci in a urethral male specimen

Epidemiological Criteria

An epidemiological link by human to human transmission (sexual contact or vertical transmission)

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the laboratory criteria

2.15. HAEMOPHILUS INFLUENZAE, INVASIVE DISEASE (*Haemophilus influenzae*)

Clinical Criteria

Not relevant for surveillance purposes

Laboratory Criteria

At least one of the following two:

— Isolation of *Haemophilus influenzae* from a normally sterile site

— Detection of *Haemophilus influenzae* nucleic acid from a normally sterile site

Epidemiological Criteria NA

Case Classification

A. **Possible case** NA

B. **Probable case** NA

C. **Confirmed case**

Any person meeting the laboratory criteria

2.16. HEPATITIS A (Hepatitis A virus)

Clinical Criteria

Any person with a discrete onset of symptoms (e.g. fatigue, abdominal pain, loss of appetite, intermittent nausea and vomiting)

AND

At least one of the following three:

— Fever

— Jaundice

— Elevated serum aminotransferase levels

Laboratory Criteria

At least one of the following three:

— Detection of hepatitis A virus nucleic acid in serum or stool

— Hepatitis A virus specific antibody response

— Detection of hepatitis A virus antigen in stool

Epidemiological Criteria

At least one of the following four:

— Human to human transmission

— Exposure to a common source

— Exposure to contaminated food/drinking water

— Environmental exposure

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.17. HEPATITIS B (Hepatitis B virus)

Clinical Criteria

Not relevant for surveillance purposes

Laboratory Criteria

Positive results of at least one or more of the following tests or combination of tests:

— IgM hepatitis B core antibody (anti-HBc IgM)

— Hepatitis B surface antigen (HBsAg)

— Hepatitis B e antigen (HBeAg)

— Hepatitis B nucleic acid (HBV-DNA)

Epidemiological Criteria

Not relevant for surveillance purposes

Case Classification

A. **Possible case** NA

B. **Probable case** NA

C. **Confirmed case**

Any person meeting the laboratory criteria

2.18. HEPATITIS C (Hepatitis C virus)

Clinical Criteria

Not relevant for surveillance purposes

Laboratory Criteria

At least one of the following three:

— Detection of hepatitis C virus nucleic acid (HCV RNA)

— Detection of hepatitis C virus core antigen (HCV-core)

— Hepatitis C virus specific antibody (anti-HCV) response confirmed by a confirmatory (e.g. immunoblot) antibody test in persons older than 18 months without evidence of resolved infection)

Epidemiological Criteria NA

Case Classification

A. **Possible case** NA

B. **Probable case** NA

C. **Confirmed case**

Any person meeting the laboratory criteria

2.19. INFLUENZA (Influenza virus)

Clinical Criteria

Any person with at least one of the following clinical forms:

Influenza-like illness (ILI)

— Sudden onset of symptoms

AND

— at least one of the following four systemic symptoms:

— Fever or feverishness

— Malaise

— Headache

— Myalgia

AND

— At least one of the following three respiratory symptoms:

— Cough

— Sore throat

— Shortness of breath

Acute respiratory infection (ARI)

— Sudden onset of symptoms

AND

— At least one of the following four respiratory symptoms:

— Cough

— Sore throat

— Shortness of breath

— Coryza

AND

— A clinician's judgement that the illness is due to an infection

Laboratory Criteria

At least one the following four:

— Isolation of influenza virus from a clinical specimen

— Detection of influenza virus nucleic acid in a clinical specimen

— Identification of influenza virus antigen by DFA test in a clinical specimen

— Influenza specific antibody response

Sub typing of the influenza isolate should be performed, if possible

Epidemiological Criteria

An epidemiological link by human to human transmission

Case Classification

A. **Possible case**

Any person meeting the clinical criteria (ILI or ARI)

B. **Probable case**

Any person meeting the clinical criteria (ILI or ARI) and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical (ILI or ARI) and the laboratory criteria

2.20. INFLUENZA A(H1N1)

Clinical criteria

Any person with one of the following three:

— fever > 38 °C AND signs and symptoms of acute respiratory infection

— pneumonia (severe respiratory illness)

— death from an unexplained acute respiratory illness

Laboratory criteria

At least one of the following tests:

— RT-PCR

— viral culture (requiring BSL 3 facilities)

— four-fold rise in novel influenza virus A(H1N1) specific neutralising antibodies (implies the need for paired sera, from acute phase illness and then at convalescent stage 10-14 days later minimum)

Epidemiological criteria

At least one of the following three in the seven days before disease onset:

— a person who was a close contact to a confirmed case of novel influenza A(H1N1) virus infection while the case was ill

— a person who has travelled to an area where sustained human-to-human transmission of novel influenza A(H1N1) is documented

— a person working in a laboratory where samples of the novel influenza A(H1N1) virus are tested

Case classification

A. **Case under investigation**

Any person meeting the clinical and epidemiological criteria

B. **Probable case**

Any person meeting the clinical AND epidemiological criteria AND with a laboratory result showing positive influenza A infection of an unsubtypable type

C. **Confirmed case**

Any person meeting the laboratory criteria for confirmation

2.21. LEGIONNAIRES' DISEASE (*Legionella* spp.)

Clinical Criteria

Any person with pneumonia

Laboratory Criteria

Laboratory criteria for case confirmation

At least one of the following three:

— Isolation of *Legionella* spp. from respiratory secretions or any normally sterile site

— Detection of *Legionella pneumophila* antigen in urine

— Significant rise in specific antibody level to *Legionella pneumophila* serogroup 1 in paired serum samples

Laboratory criteria for a probable case

At least one of the following four:

— Detection of *Legionella pneumophila* antigen in respiratory secretions or lung tissue e.g. by DFA staining using monoclonal-antibody derived reagents

— Detection of *Legionella* spp. nucleic acid in respiratory secretions, lung tissue or any normally sterile site

— Significant rise in specific antibody level to *Legionella pneumophila* other than serogroup 1 or other *Legionella* spp. in paired serum samples

— Single high level of specific antibody to *Legionella pneumophila* serogroup 1 in serum

Epidemiological Criteria NA

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criterion AND at least one laboratory criterion for a probable case

C. **Confirmed case**

Any person meeting the clinical criterion AND at least one laboratory criterion for a confirmed case

2.22. LEPTOSPIROSIS (*Leptospira* spp.)

Clinical Criteria

Any person with

— Fever

OR

At least two of the following eleven:

— Chills

— Headache

— Myalgia

— Conjunctival suffusion

— Haemorrhages into skin and mucous membranes

— Rash

— Jaundice

— Myocarditis

— Meningitis

— Renal impairment

— Respiratory symptoms such as haemoptysis

Laboratory Criteria

At least one of the following four:

— Isolation of *Leptospira interrogans* or any other pathogenic *Leptospira* spp. from a clinical specimen

— Detection of *Leptospira interrogans* or any other pathogenic *Leptospira* spp. nucleic acid in a clinical specimen

— Demonstration of *Leptospira interrogans* or any other pathogenic *Leptospira* spp. by immunofluorescence in a clinical specimen

— *Leptospira interrogans* or any other pathogenic *Leptospira* spp. specific antibody response

Epidemiological Criteria

At least one of the following three epidemiological links:

— Animal to human transmission

— Environmental exposure

— Exposure to a common source

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.23. LISTERIOSIS (*Listeria monocytogenes*)

Clinical Criteria

Any person with at least one of the following three:

— Listeriosis of newborns defined as

Stillbirth

OR

At least one of the following five in the first month of life:

— Granulomatosis infantiseptica

— Meningitis or meningoencephalitis

— Septicaemia

— Dyspnoea

— Lesions on skin, mucosal membranes or conjunctivae

— Listeriosis in pregnancy defined as at least one of the following three:

— Abortion, miscarriage, stillbirth or premature birth

— Fever

— Influenza-like symptoms

— Other form of listeriosis defined as at least one of the following four:

— Fever

— Meningitis or meningoencephalitis

— Septicaemia

— Localised infections such as arthritis, endocarditis, and abscesses

Laboratory Criteria

At least one of the following two:

— Isolation of *Listeria monocytogenes* from a normally sterile site

— Isolation of *Listeria monocytogenes* from a normally non-sterile site in a foetus, stillborn, newborn or the mother at or within 24 hours of birth

Epidemiological Criteria

At least one of the following three epidemiological links:

— Exposure to a common source
— Human to human transmission (vertical transmission)
— Exposure to contaminated food/drinking water

Additional information
Incubation period 3-70 days, most often 21 days

Case Classification
A. **Possible case** NA
B. **Probable case**
Any person meeting the clinical criteria and with an epidemiological link
C. **Confirmed case**
Any person meeting the laboratory criteria
OR
Any mother with a laboratory confirmed listeriosis infection in her foetus, stillborn or newborn

2.24. MALARIA (*Plasmodium* spp.)

Clinical Criteria
Any person with fever OR a history of fever

Laboratory Criteria
At least one of the following three:
— Demonstration of malaria parasites by light microscopy in blood films
— Detection of *Plasmodium* nucleic acid in blood
— Detection of *Plasmodium* antigen
Differentiation of *Plasmodium* spp. should be performed if possible

Epidemiological Criteria NA

Case Classification
A. **Possible case** NA
B. **Probable case** NA
C. **Confirmed case**
Any person meeting the clinical and the laboratory criteria

2.25. MEASLES (Measles virus)

Clinical Criteria
Any person with fever
AND
— Maculo-papular rash
AND at least one of the following three:
— Cough
— Coryza
— Conjunctivitis

Laboratory Criteria
At least one of the following four:
— Isolation of measles virus from a clinical specimen
— Detection of measles virus nucleic acid in a clinical specimen
— Measles virus specific antibody response characteristic for acute infection in serum or saliva
— Detection of measles virus antigen by DFA in a clinical specimen using measles specific monoclonal antibodies

Laboratory results need to be interpreted according to the vaccination status. If recently vaccinated, investigate for wild virus

Epidemiological criteria

An epidemiological link by human to human transmission

Case Classification

A. **Possible case**

Any person meeting the clinical criteria

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person not recently vaccinated and meeting the clinical and the laboratory criteria

2.26. MENINGOCCOCAL DISEASE, INVASIVE (*Neisseria meningitidis*)

Clinical Criteria

Any person with at least one of the following symptoms:

— Meningeal signs

— Haemorrhagic rash

— Septic shock

— Septic arthritis

Laboratory Criteria

At least one of the following four:

— Isolation of *Neisseria meningitidis* from a normally sterile site, or from purpuric skin lesions

— Detection of *Neisseria meningitidis* nucleic acid from a normally sterile site, or from purpuric skin lesions

— Detection of *Neisseria meningitidis* antigen in CSF

— Detection of gram negative stained diplococcus in CSF

Epidemiological Criteria

An epidemiological link by human to human transmission

Case Classification

A. **Possible case**

Any person meeting the clinical criteria

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the laboratory criteria

2.27. MUMPS (Mumps virus)

Clinical Criteria

Any person with

— Fever

AND

At least one of the following three:

— Sudden onset of unilateral or bilateral tender swelling of the parotid or other salivary glands without other apparent cause

— Orchitis

— Meningitis

Laboratory Criteria

At least one of the following three:

— Isolation of mumps virus from a clinical specimen

— Detection of mumps virus nucleic acid

— Mumps virus specific antibody response characteristic for acute infection in serum or Saliva

Laboratory results need to be interpreted according to the vaccination status

Epidemiological Criteria

An epidemiological link by human to human transmission

Case Classification

A. **Possible case**

Any person meeting the clinical criteria

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person not recently vaccinated and meeting the laboratory criteria

In case of recent vaccination: any person with detection of wild-type mumps virus strain

2.28. PERTUSSIS (*Bordetella pertussis*)

Clinical Criteria

Any person with a cough lasting at least two weeks

AND at least one of the following three:

— Paroxysms of coughing

— Inspiratory 'whooping'

— Post-tussive vomiting

OR

Any person diagnosed as pertussis by a physician

OR

Apnoeic episodes in infants

Laboratory Criteria

At least one of the following three:

— Isolation of *Bordetella pertussis* from a clinical specimen

— Detection of *Bordetella pertussis* nucleic acid in a clinical specimen

— *Bordetella pertussis* specific antibody response

Epidemiological Criteria

An epidemiological link by human to human transmission

Case Classification

A. **Possible case**

Any person meeting the clinical criteria

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.29. PLAGUE (*Yersinia pestis*)

Clinical Criteria

Any person with at least one of the following clinical forms:

Bubonic plague:

— Fever

AND

— Sudden onset of painful lymphadenitis

Septicaemic plague:

— Fever

Pneumonic plague:

— Fever

AND

At least one of the following three:

— Cough

— Chest pain

— Haemoptysis

Laboratory Criteria

At least one of the following three:

— Isolation of *Yersinia pestis* from a clinical specimen

— Detection of *Yersinia pestis* nucleic acid from a clinical specimen (F1 antigen)

— *Yersinia pestis* anti-F1 antigen specific antibody response

Epidemiological Criteria

At least one of the following four epidemiological links:

— Human to human transmission

— Animal to human transmission

— Laboratory exposure (where there is a potential exposure to plague)

— Exposure to a common source

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the laboratory criteria

2.30. PNEUMOCOCCAL INVASIVE DISEASE(S) (*Streptococcus pneumoniae*)

Clinical Criteria

Not relevant for surveillance purposes

Laboratory Criteria

At least one of the following three:

— Isolation of *Streptococcus pneumoniae* from a normally sterile site

— Detection of *Streptococcus pneumoniae* nucleic acid from a normally sterile site

— Detection of *Streptococcus pneumoniae* antigen from a normally sterile

Epidemiological Criteria NA

Case Classification

A. **Possible case** NA

B. **Probable case** NA

C. **Confirmed case**

Any person meeting the laboratory criteria

2.31. POLIOMYELITIS (Polio virus)

Clinical Criteria

Any person < 15 years of age with Acute flaccid paralysis (AFP)

OR

Any person in whom polio is suspected by a physician

Laboratory Criteria

At least one of the following three:

— Isolation of a polio virus and intratypic differentiation — Wild polio virus (WPV)

— Vaccine derived poliovirus (VDPV) (for the VDPV at least 85 % similarity with vaccine virus in the nucleotide sequences in the VP1 section)

— Sabin-like poliovirus: intratypic differentiation performed by a WHO-accredited polio laboratory (for the VDPV a > 1 % up to 15 % VP1 sequence difference compared with vaccine virus of the same serotype)

Epidemiological Criteria

At least one of the following two epidemiological links:

— Human to human transmission

— An history of travel to a polio-endemic area or an area with suspected or confirmed circulation of poliovirus

Case Classification

A. **Possible case**

Any person meeting the clinical criteria

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.32. Q FEVER (*Coxiella burnetii*)

Clinical Criteria

Any person with at least one of the following three:

— Fever

— Pneumonia

— Hepatitis

Laboratory Criteria

At least one of the following three:

— Isolation of *Coxiella burnetii* from a clinical specimen

— Detection of *Coxiella burnetii* nucleic acid in a clinical specimen

— *Coxiella burnetii* specific antibody response (IgG or IgM phase II)

Epidemiological Criteria

At least one of the following two epidemiological links:

— Exposure to a common source

— Animal to human transmission

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.33. RABIES (Lyssa virus)

Clinical Criteria

Any person with an acute encephalomyelitis

AND

At least two of the following seven:

— Sensory changes referred to the site of a preceding animal bite

— Paresis or paralysis

— Spasms of swallowing muscles

— Hydrophobia

— Delirium

— Convulsions

— Anxiety

Laboratory Criteria

At least one of the following four:

— Isolation of Lyssa virus from a clinical specimen

— Detection of Lyssa virus nucleic acid in a clinical specimen (e.g. saliva or brain tissue)

— Detection of viral antigens by a DFA in a clinical specimen

— Lyssa virus specific antibody response by virus neutralisation assay in serum or CSF

Laboratory results need to be interpreted according to the vaccination or immunisation status

Epidemiological Criteria

At least one of the following three epidemiological links:

— Animal to human transmission (animal with suspected or confirmed infection)

— Exposure to a common source (same animal)

— Human to human transmission (e.g. transplantation of organs)

Case Classification

A. **Possible case**

Any person meeting the clinical criteria

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.34. RUBELLA (Rubella virus)

Clinical Criteria

Any person with sudden onset of generalised maculo-papular rash

AND

At least one of the following five:

— Cervical adenopathy

— Sub-occipital adenopathy

— Post-auricular adenopathy

— Arthralgia

— Arthritis

Laboratory Criteria

— Laboratory criteria for case confirmation

At least one of the following three:

— Isolation of rubella virus from a clinical specimen

— Detection of rubella virus nucleic acid in a clinical specimen

— Rubella virus specific antibody response (IgG) in serum or saliva

— Laboratory criteria for probable case

— Rubella virus specific antibody response (IgM (10))

Laboratory results need to be interpreted according to the vaccination status

Epidemiological Criteria

An epidemiological link by human to human transmission

Case Classification

A. **Possible case**

Any person meeting the clinical criteria

B. **Probable case**

Any person meeting the clinical criteria and with at least one of the following two:

— An epidemiological link

— Meeting the laboratory criteria for a probable case

C. **Confirmed case**

Any person not recently vaccinated and meeting the laboratory criteria for case confirmation

In case of recent vaccination, a person with detection of wild-type rubella virus strain

2.35. RUBELLA, CONGENITAL (Including Congenital Rubella Syndrome)

Clinical Criteria

Congenital rubella infection (CRI)

No clinical criteria can be defined for CRI

Congenital rubella syndrome (CRS)

Any infant < 1 year of age or any stillborn with:

At least two of the conditions listed in (A)

OR

One in category (A) and one in category (B)

(A)

— Cataract(s)

— Congenital glaucoma

— Congenital heart disease

— Loss of hearing

— Pigmentary retinopathy

(B)

— Purpura

— Splenomegaly

— Microcephaly

— Developmental delay

— Meningo-encephalitis

— Radiolucent bone disease

— Jaundice that begins within 24 hours after birth

_____

(10) When rubella in pregnancy is suspected, further confirmation of a positive rubella IgM results is required (e.g. a rubella specific IgG avidity test showing a low avidity). In certain situations, such as confirmed rubella outbreaks detection of rubella virus IgM can be considered confirmatory in non-pregnant cases.

Laboratory Criteria

At least one of the following four:

— Isolation of rubella virus from a clinical specimen

— Detection of Rubella virus nucleic acid

— Rubella virus specific antibody response (IgM)

— Persistence of rubella IgG between 6 and 12 months of age (at least two samples with similar concentration of rubella IgG)

Laboratory results need to be interpreted according to the vaccination status

Epidemiological Criteria

Any infant or any stillborn born to a woman with a laboratory confirmed rubella infection during pregnancy by human to human transmission (vertical transmission)

Case Classification Congenital Rubella

A. **Possible case** NA

B. **Probable case**

Any stillborn or infant either not tested OR with negative laboratory results with at least one of the following two:

— An epidemiological link AND at least one of the conditions listed in the category 'A' CRS clinical criteria

— Meeting the clinical criteria for CRS

C. **Confirmed case**

Any stillborn meeting the laboratory criteria

OR

Any infant meeting the laboratory criteria AND at least one of the following two:

— An epidemiological link

— At least one of the conditions listed in the category 'A' CRS clinical criteria

2.36. SALMONELLOSIS (*Salmonella* spp. other than *Salmonella typhi* and *Salmonella paratyphi*)

Clinical Criteria

Any person with at least one of the following four:

— Diarrhoea

— Fever

— Abdominal pain

— Vomiting

Laboratory Criteria

Isolation of *Salmonella* (other than *Salmonella typhi* and *Salmonella paratyphi*) from stool, urine, body site (e.g. infected wound) or any normally sterile body fluids and tissues (e.g. blood, CSF, bone, synovial fluid, etc.)

Epidemiological Criteria

At least one of the following five epidemiological links:

— Human to human transmission

— Exposure to a common source

— Animal to human transmission

— Exposure to contaminated food/drinking water

— Environmental exposure

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.37. SEVERE ACUTE RESPIRATORY SYNDROME — SARS (SARS-coronavirus, SARS-CoV)

Clinical Criteria

Any person with fever or a history of fever

AND

At least one of the following three:

— Cough

— Difficulty in breathing

— Shortness of breath

AND

At least one of the following four:

— Radiographic evidence of pneumonia

— Radiographic evidence of acute respiratory distress syndrome

— Autopsy findings of pneumonia

— Autopsy findings of acute respiratory distress syndrome

AND

No alternative diagnosis which can fully explain the illness

Laboratory Criteria

— Laboratory criteria for case confirmation

At least one of the following three:

— Isolation of virus in cell culture from any clinical specimen and identification of SARS-CoV using method such as RT-PCR

— Detection SARS-CoV nucleic acid in at least one of the following three:

  — At least two different clinical specimens (e.g. nasopharyngeal swab and stool)

  — The same clinical specimen collected on two or more occasions during the course of the illness (e.g. sequential nasopharyngeal aspirates)

  — Two different assays or repeat RT-PCR using a new RNA extract from the original clinical sample on each occasion of testing

— SARS-CoV specific antibody response by one of the following two:

  — Seroconversion by ELISA or IFA in acute and convalescent phase serum tested in parallel

  — Four-fold or greater rise in antibody titre between acute and convalescent phase sera tested in parallel

— Laboratory criteria for a probable case

  At least one of the following two:

  — A single positive antibody test for SARS-CoV

  — A positive PCR result for SARS-CoV on a single clinical specimen and assay

Epidemiological Criteria

At least one of the following three:

— Any person with at least one of the following three:

  — Employed in an occupation associated with an increased risk of SARS-CoV exposure (e.g. staff in a laboratory working with live SARS-CoV/SARS-CoV-like viruses or storing clinical specimens infected with SARS-CoV; persons with exposure to wildlife or other animals considered a reservoir of SARS- CoV, their excretions or secretions, etc.)

  — Close contact (11) of one or more persons with confirmed SARS or under investigation for SARS

    — History of travel to, or residence in, an area experiencing an outbreak of SARS

— Two or more health-care workers (12) with clinical evidence of SARS in the same health-care unit and with onset of illness in the same 10-day period

— Three or more persons (health-care workers and/or patients and/or visitors) with clinical evidence of SARS with onset of illness in the same 10-day period and epidemiologically linked to a healthcare facility

Case Classification for the inter-epidemic period

Also applies during an outbreak in a non-affected country or area

A. **Possible case**

Any person meeting the clinical criteria and with an epidemiological link

B. **Probable case**

Any person meeting the clinical criteria AND with an epidemiological link AND meeting the laboratory criteria for a probable case

C. **Nationally confirmed case**

Any person meeting the clinical and the laboratory criteria for case confirmation where the testing has been performed at a national reference laboratory

D. **Confirmed case**

Any person meeting the clinical and the laboratory criteria for case confirmation where the testing has been performed at a WHO SARS verification and reference laboratory

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(11) A close contact is a person who has cared for, lived with, or having had direct contact with the respiratory secretions, body fluids and/or excretions (e.g. faeces) of cases of SARS.

(12) In this context the term 'health-care worker' includes all hospital staff. The definition of the health care unit in which the cluster occurs will depend on the local situation. Unit size may range from an entire health care facility if small, to a single department or ward of a large tertiary hospital.

Case Classification during an outbreak

Applies during an outbreak in a country/area where at least one person has been laboratory confirmed by a WHO SARS verification and reference laboratory

A. **Possible case**

Any person meeting the clinical criteria

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link to a nationally confirmed or a confirmed case

C. **Nationally confirmed case**

Any person meeting the clinical and the laboratory criteria for case confirmation where the testing has been performed at a national reference laboratory

D. **Confirmed case**

One of the following three:

— Any person meeting the clinical and the laboratory criteria for case confirmation where the testing has been performed at a WHO SARS verification and reference laboratory

— Any nationally confirmed case with an epidemiological link to a chain of transmission where at least one case has been independently verified by a WHO SARS Reference and Verification Laboratory

— Any person meeting the clinical criteria and with laboratory criteria for probable case with an epidemiological link to a chain of transmission where at least one case has been independently verified by a WHO SARS Reference and Verification Laboratory

2.38. SHIGA TOXIN/VEROCYTO-TOXIN PRODUCING *ESCHERICHIA COLI* INFECTION (STEC/VTEC)

Clinical Criteria

STEC/VTEC diarrhoea

Any person with at least one of the following two:

— Diarrhoea

— Abdominal pain

HUS

Any person with acute renal failure and at least one of the following two:

— Microangiopatic haemolytic anaemia

— Thrombocytopenia

Laboratory Criteria

At least one of the following four:

— Isolation of an *Escherichia coli* strain that produces Shigatoxin (Stx) or harbours *stx1* or *stx2* gene(s)

— Isolation of non-sorbitol-fermenting (NSF) *Escherichia coli* O157 (without Stx or *stx* gene testing)

— Direct detection of *stx1* or *stx2* gene(s) nucleic acid (without strain isolation)

— Direct detection of free Stx in faeces (without strain isolation)

Only for HUS the following can be used as laboratory criterion to confirm STEC/VTEC:

— *Escherichia coli* serogroup-specific (LPS) antibody response

Isolation of an STEC/VTEC strain and additional characterisation by serotype, phage type, *eae* genes, and subtypes of *stx1/stx2* should be performed if possible

Epidemiological Criteria

At least one of the following five epidemiological links:

— Human to human transmission

— Exposure to a common source

— Animal to human transmission

— Exposure to contaminated food/drinking water

— Environmental exposure

Case Classification

A. **Possible case of STEC-associated HUS**

Any person meeting the clinical criteria for HUS

B. **Probable case of STEC/VTEC**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case of STEC/VTEC**

Any person meeting the clinical and the laboratory criteria

2.39. SHIGELLOSIS (*Shigella* spp.)

Clinical Criteria

Any person with at least one of the following four:

— Diarrhoea

— Fever

— Vomiting

— Abdominal pain

Laboratory Criteria

— Isolation of *Shigella* spp. from a clinical specimen

Epidemiological Criteria

At least one of the following five epidemiological links:

— Human to human transmission

— Exposure to a common source

— Animal to human transmission

— Exposure to contaminated food/drinking water

— Environmental exposure

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.40. SMALLPOX (Variola virus)

Clinical Criteria

Any person with at least one of the following two:

— Fever

AND

Vesicles or firm pustules rash at the same stage of development with a centrifugal distribution

— Atypical presentations defined as at least one of the following four:

— Haemorrhagic lesions

— Flat velvety lesions not progressing to vesicles

— Variola sine eruptione

— Milder type

Laboratory Criteria

— Laboratory criteria for case confirmation

At least one of the following two laboratory tests:

— Isolation of smallpox (Variola virus) from a clinical specimen followed by sequencing (designated P4 laboratories only)

— Detection of Variola virus nucleic acid in a clinical specimen followed by sequencing

Laboratory results need to be interpreted according to the vaccination status

— Laboratory criteria for a probable case

— Identification of orthopox virus particles by EM

Epidemiological Criteria

At least one of the following two epidemiological links:

— Human to human transmission

— Laboratory exposure (where there is a potential exposure to Variola virus)

Case Classification

A. **Possible case**

Any person meeting the clinical criteria

B. **Probable case**

Any person meeting the clinical criteria and with at least one of the following two:

— An epidemiological link to a confirmed human case by human to human transmission

— Meeting the laboratory criteria for a probable case

C. **Confirmed case**

Any person meeting the laboratory criteria for case confirmation

During an outbreak: any person meeting the clinical criteria and with an epidemiological link

2.41. SYPHILIS (*Treponema pallidum*)

Clinical Criteria

— Primary syphilis

Any person with one or several (usually painless) chancres in the genital, perineal, anal area or mouth or pharyngeal mucosa or elsewhere extragenitally

— Secondary syphilis

Any person with at least one of the following five:

— Diffuse maculo-papular rash often involving palms and soles

— Generalised lymphadenopathy

— Condyloma lata

— Enanthema

— Allopetia diffusa

— Early latent syphilis (< 1 year)

A history of symptoms compatible with those of the earlier stages of syphilis within the previous 12 months

— Late latent syphilis (> 1 year)

Any person meeting laboratory criteria (specific serological tests)

Laboratory Criteria

At least one of the following four laboratory tests:

— Demonstration of *Treponema pallidum* in lesion exudates or tissues by dark-field microscopic examination

— Demonstration of *Treponema pallidum* in lesion exudates or tissues by DFA test

— Demonstration of *Treponema* in lesion exudates or tissues by PCR

— Detection of *Treponema pallidum* antibodies by screening test (TPHA, TPPA or EIA) AND additionally detection of Tp-IgM antibodies (by IgM-ELISA, IgM immunoblot or 19S-IgM-FTA-abs) — confirmed by a second IgM assay

Epidemiological Criteria

— Primary/secondary syphilis

An epidemiological link by human to human (sexual contact)

— Early latent syphilis (< 1 year)

An epidemiological link by human to human (sexual contact) within the 12 previous months

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the laboratory criteria for case confirmation

2.42. SYPHILIS, CONGENITAL AND NEONATAL (*Treponema pallidum*)

Clinical Criteria

Any infant < 2 years of age with at least one of the following 10:

— Hepatospenomegaly

— Mucocutaneous lesions

— Condyloma lata

— Persistent rhinitis

— Jaundice

— Pseudoparalysis (due to periostitis and osteochondritis)

— Central nervous involvement

— Anaemia

— Nephrotic syndrome

— Malnutrition

Laboratory Criteria

— Laboratory criteria for case confirmation

At least one of the following three:

— Demonstration of *Treponema pallidum* by dark field microscopy in the umbilical cord, the placenta, a nasal discharge or skin lesion material

— Demonstration of *Treponema pallidum* by DFA-TP in the umbilical cord, the placenta, a nasal discharge or skin lesion material

— Detection of *Treponema pallidum* — specific IgM (FTA-abs, EIA)

AND a reactive non-treponemal test (VDRL, RPR) in the child's serum

— Laboratory criteria for a probable case

At least one of the following three:

— Reactive VDRL-CSF test result

— Reactive non-treponemal and treponemal serologic tests in the mother's serum

— Infant's non-treponemal antibody titre is four-fold or greater than the antibody titre in the mother's serum

Epidemiological Criteria

Any infant with an epidemiological link by human to human transmission (vertical transmission)

Case Classification

A. **Possible case** NA

B. **Probable case**

Any infant or child meeting the clinical criteria and with at least one of the following two:

— An epidemiological link

— Meeting the laboratory criteria for a probable case

C. **Confirmed case**

Any infant meeting the laboratory criteria for case confirmation

2.43. TETANUS (*Clostridium tetani*)

Clinical Criteria

Any person with at least two of the following three:

— Painful muscular contractions primarily of the masseter and neck muscles leading to facial spasms known as trismus and 'risus sardonicus'

— Painful muscular contractions of trunk muscles

— Generalised spasms, frequently position of opisthotonus

Laboratory Criteria

At least one of the following two:

— Isolation of *Clostridium tetani* from an infection site

— Detection of tetanus toxin in a serum sample

Epidemiological Criteria NA

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.44. TICK-BORNE ENCEPHALITIS (TBE virus)

Clinical Criteria

Any person with symptoms of inflammation of the CNS (e.g. meningitis, meningo-encephalitis, encephalomyelitis, encephaloradiculitis)

Laboratory Criteria (13)

— Laboratory criteria for case confirmation:

At least one of the following five:

— TBE specific IgM AND IgG antibodies in blood

— TBE specific IgM antibodies in CSF

— Sero-conversion or four-fold increase of TBE-specific antibodies in paired serum samples

— Detection of TBE viral nucleic acid in a clinical specimen,

— Isolation of TBE virus from clinical specimen

— Laboratory criteria for a probable case:

Detection of TBE-specific IgM-antibodies in a unique serum sample

Epidemiological Criteria

Exposure to a common source (unpasteurised dairy products)

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and the laboratory criteria for a probable case,

OR

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and laboratory criteria for case confirmation

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(13) Serological results should be interpreted according to the vaccination status and previous exposure to other flaviviral infections. Confirmed cases in such situations should be validated by serum neutralisation assay or other equivalent assays.

2.45. TOXOPLASMOSIS, CONGENITAL (*Toxoplasma gondii*)

Clinical Criteria

Not relevant for surveillance purposes

Laboratory Criteria

At least one of the following four:

— Demonstration of *Toxoplasma gondii* in body tissues or fluids

— Detection of *Toxoplasma gondii* nucleic acid in a clinical specimen

— *Toxoplasma gondii* specific antibody response (IgM, IgG, IgA) in a newborn

— Persistently stable IgG *Toxoplasma gondii* titres in an infant (< 12 months of age)

Epidemiological Criteria NA

Case Classification

A. **Possible case** NA

B. **Probable case** NA

C. **Confirmed case**

Any infant meeting the laboratory criteria

2.46. TRICHINELLOSIS (*Trichinella* spp.)

Clinical Criteria

Any person with at least three of the following six:

— Fever

— Muscle soreness and pain

— Diarrhoea

— Facial oedema

— Eosinophilia

— Subconjunctival, subungual and retinal haemorrhages

Laboratory Criteria

At least one of the following two:

— Demonstration of *Trichinella* larvae in tissue obtained by muscle biopsy

— *Trichinella* specific antibody response (IFA test, ELISA or Western Blot)

Epidemiological Criteria

At least one of the following two epidemiological links:

— Exposure to contaminated food (meat)

— Exposure to a common source

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical criteria and the laboratory criteria

2.47. TUBERCULOSIS (*Mycobacterium tuberculosis* complex)

Clinical Criteria

Any person with the following two:

— Signs, symptoms and/or radiological findings consistent with active tuberculosis in any site

AND

— A clinician's decision to treat the person with a full course of anti-tuberculosis therapy

OR

A case discovered post-mortem with pathological findings consistent with active tuberculosis that would have indicated anti-tuberculosis antibiotic treatment had the patient been diagnosed before dying

Laboratory Criteria

— Laboratory criteria for case confirmation

At least one of the following two:

- — Isolation of *Mycobacterium tuberculosis* complex (excluding *Mycobacterium bovis*-BCG) from a clinical specimen
- — Detection of *Mycobacterium tuberculosis* complex nucleic acid in a clinical specimen AND positive microscopy for acid-fast bacilli or equivalent fluorescent staining bacilli on light microscopy

— Laboratory criteria for a probable case

At least one of the following three:

- — Microscopy for acid-fast bacilli or equivalent fluorescent staining bacilli on light microscopy
- — Detection of *Mycobacterium tuberculosis* complex nucleic acid in a clinical specimen
- — Histological appearance of granulomata

Epidemiological Criteria NA

Case Classification

A. **Possible case**

Any person meeting the clinical criteria

B. **Probable case**

Any person meeting the clinical criteria and the laboratory criteria for a probable case

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria for case confirmation

2.48. TULARAEMIA (*Francisella tularensis*)

Clinical Criteria

Any person with at least one of the following clinical forms:

— *Ulceroglandular tularaemia*

— Cutaneous ulcer

AND

— Regional lymphadenopathy

— *Glandular tularaemia*

— Enlarged and painful lymph nodes without apparent ulcer

— *Oculoglandular tularaemia*

— Conjunctivitis

AND

— Regional lymphadenopathy

— *Oropharyngeal tularaemia*

— Cervical lymphadenopathy

AND at least one of the following three:

— Stomatitis

— Pharyngitis
— Tonsillitis
— *Intestinal tularaemia*
At least one of the following three:
— Abdominal pain
— Vomiting
— Diarrhoea
— *Pneumonic tularaemia*
— Pneumonia
— *Typhoidal tularaemia*
At least one of the following two:
— Fever without early localising signs and symptoms
— Septicaemia

Laboratory Criteria

At least one of the following three:
— Isolation of *Francisella tularensis* from a clinical specimen
— Detection of *Francisella tularensis* nucleic acid in a clinical specimen
— *Francisella tularensis* specific antibody response

Epidemiological Criteria

At least one of the following three epidemiological links:
— Exposure to a common source
— Animal to human transmission
— Exposure to contaminated food/drinking water

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.49. TYPHOID/PARATYPHOID FEVER (*Salmonella typhi/paratyphi*)

Clinical Criteria

Any person with at least one of the following two:
— Onset of sustained fever
— At least two of the following four:
— Headache
— Relative bradycardia
— Non-productive cough
— Diarrhoea, constipation, malaise or abdominal pain
Paratyphoid fever has the same symptoms as typhoid fever, however usually a milder course

Laboratory Criteria

— Isolation of *Salmonella typhi* or *paratyphi* from a clinical specimen

Epidemiological Criteria

At least one of the following three epidemiological links:
— Exposure to a common source
— Human to human transmission
— Exposure to contaminated food/drinking water

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.50. VIRAL HAEMORRHAGIC FEVERS (VHF)

Clinical Criteria

Any person with at least one of the following two:

— Fever

— Haemorrhagic manifestations in various forms that may lead to multi-organ failure

Laboratory Criteria

At least one of the following two:

— Isolation of specific virus from a clinical specimen

— Detection of specific virus nucleic acid in a clinical specimen and genotyping

Epidemiological Criteria

At least one of the following:

— Travel in the last 21 days to a region where VHF cases are known or believed to have occurred

— Exposure within the last 21 days to a probable or confirmed case of a VHF whose onset of illness was within the last six months

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

2.51. WEST NILE FEVER (West Nile virus infection, WNV)

Clinical Criteria

Any person with Fever

OR

At least one of the following two:

— Encephalitis

— Meningitis

Laboratory Criteria

— Laboratory test for case confirmation

At least one of the following four:

— Isolation of WNV from blood or CSF

— Detection of WNV nucleic acid in blood or CSF

— WNV specific antibody response (IgM) in CSF

— WNV IgM high titre AND detection of WNV IgG, AND confirmation by neutralisation

— Laboratory test for a probable case

WNV specific antibody response in serum

Laboratory results need to be interpreted according to flavivirus vaccination status

Epidemiological Criteria

At least one of the following two epidemiological links:

— Animal to human transmission (residing, having visited or having been exposed to mosquito bites in an area where WNV is endemic in horses or birds)

— Human to human transmission (vertical transmission, blood transfusion, transplants)

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria AND with at least one of the following two:

— an epidemiological link

— a laboratory test for a probable case

C. **Confirmed case**

Any person meeting the laboratory criteria for case confirmation

2.52. YELLOW FEVER (Yellow fever virus)

Clinical Criteria

Any person with Fever

AND

At least one of the following two:

— Jaundice

— Generalised haemorrhage

Laboratory Criteria

At least one of the following five:

— Isolation of yellow fever virus from a clinical specimen

— Detection of yellow fever virus nucleic acid

— Detection of yellow fever antigen

— Yellow fever specific antibody response

— Demonstration of typical lesions in post mortem liver histopathology

Laboratory results need to be interpreted according to flavivirus vaccination status

Epidemiological Criteria

Travel in the last 1 week to a region where yellow fever cases are known or believed to have occurred

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person not recently vaccinated meeting the clinical and the laboratory criteria

In case of recent vaccination, a person with detection of wild-type yellow fever virus strain

2.53. YERSINIOSIS (*Yersinia enterocolitica, Yersinia pseudotuberculosis*)

Clinical Criteria

Any person with at least one of the following five:

— Fever

— Diarrhoea

— Vomiting

— Abdominal pain (pseudoappendicitis)

— Tenesmus

Laboratory Criteria

— Isolation of human pathogenic *Yersinia enterocolitica* or *Yersinia pseudotuberculosis* from a clinical specimen

Epidemiological Criteria

At least one of the following four epidemiological links:

— Human to human transmission

— Exposure to a common source

— Animal to human transmission

— Exposure to contaminated food

Case Classification

A. **Possible case** NA

B. **Probable case**

Any person meeting the clinical criteria and with an epidemiological link

C. **Confirmed case**

Any person meeting the clinical and the laboratory criteria

3. CASE DEFINITIONS OF SPECIAL HEALTH ISSUES

3.1. GENERAL CASE DEFINITION OF NOSOCOMIAL INFECTION (OR 'HEALTHCARE-ASSOCIATED INFECTION')

A nosocomial infection associated to the current hospital stay is defined as infection that matches one of the case definitions AND

— the onset of symptoms was on Day 3 or later (day of admission = Day 1) of the current hospital admission OR

— the patient underwent surgery on day 1 or day 2 and develops symptoms of a Surgical Site Infection before day 3 OR

— an invasive device was placed on day 1 or day 2 resulting in an HAI before day 3

A nosocomial infection associated to a previous hospital stay is defined as infection that matches one of the case definitions

AND

— the patient presents with an infection but has been readmitted less than two days after a previous admission to an acute care hospital

OR

— the patient has been admitted with an infection that meets the case definition of a Surgical Site Infection i.e. the SSI occurred within 30 days of the operation (or in the case of surgery involving an implant was a deep or organ/space SSI that developed within a year of the operation) and the patient either has symptoms that meet the case definition and/or is on antimicrobial treatment for that infection

OR

— the patient has been admitted (or develops symptoms within two days) with *Clostridium difficile* infection less than 28 days from a previous discharge from an acute care hospital.

For the purpose of point prevalence surveys, an active nosocomial infection present on the day of the survey is defined as an infection for which signs and symptoms of the infection are present on the survey date or signs and symptoms were present in the past and the patient is (still) receiving treatment for that infection on the survey date. The presence of symptoms and signs should be verified until the start of the treatment in order to determine whether the treated infection matches one of the case definitions of nosocomial infection

3.1.1. *BJ: BONE AND JOINT INFECTION*

BJ-BONE: Osteomyelitis

Osteomyelitis must meet at least one of the following criteria:

— Patient has organisms cultured from bone

— Patient has evidence of osteomyelitis on direct examination of the bone during a surgical operation or histopathologic examination

— Patient has at least two of the following signs or symptoms with no other recognised cause: fever (> 38 °C), localised swelling, tenderness, heat, or drainage at suspected site of bone infection

AND at least one of the following:

- — organisms cultured from blood
- — positive blood antigen test (e.g. *Haemophilus.influenzae, Streptococcus pneumoniae*)
- — radiographic evidence of infection (e.g. abnormal findings on x-ray, CT scan, MRI, radiolabel scan [gallium, technetium, etc.]).

Note reporting instruction:

Report mediastinitis following cardiac surgery that is accompanied by osteomyelitis as surgical site infection-organ/space (SSI-O).

BJ-JNT: Joint or bursa

Joint or bursa infections must meet at least one of the following criteria:

- — Patient has organisms cultured from joint fluid or synovial biopsy
- — Patient has evidence of joint or bursa infection seen during a surgical operation or histopathologic examination
- — Patient has at least two of the following signs or symptoms with no other recognised cause: joint pain, swelling, tenderness, heat, evidence of effusion or limitation of motion

AND at least one of the following:

- — organisms and white blood cells seen on Gram's stain of joint fluid
- — positive antigen test on blood, urine, or joint fluid
- — cellular profile and chemistries of joint fluid compatible with infection and not explained by an underlying rheumatologic disorder
- — radiographic evidence of infection (e.g. abnormal findings on x-ray, CT scan, MRI, radiolabel scan [gallium, technetium, etc.])

BJ-DISC: Disc space infection

Vertebral disc space infection must meet at least one of the following criteria:

- — Patient has organisms cultured from vertebral disc space tissue obtained during a surgical operation or needle aspiration
- — Patient has evidence of vertebral disc space infection seen during a surgical operation or histopathologic examination
- — Patient has fever (> 38 °C) with no other recognised cause or pain at the involved vertebral disc space
- — AND radiographic evidence of infection, (e.g. abnormal findings on x-ray, CT scan, MRI, radiolabel scan [gallium, technetium, etc.]).

Patient has fever (> 38 °C) with no other recognised cause and pain at the involved vertebral disc space

- — AND positive antigen test on blood or urine (e.g. *Haemophilus influenzae, Streptococcus pneumoniae, Neisseria meningitidis*, or Group B *Streptococcus*).

3.1.2. *BSI: BLOODSTREAM INFECTION*

BSI: Laboratory-confirmed bloodstream infection

One positive blood culture for a recognised pathogen

OR

Patient has at least one of the following signs or symptoms: fever (> 38 °C), chills, or hypotension

AND Two positive blood cultures for a common skin contaminant (from two separate blood samples, usually within 48 hours)

Skin contaminants = coagulase-negative staphylococci, *Micrococcus* spp., *Propionibacterium acnes, Bacillus* spp., *Corynebacterium* spp.

Source of bloodstream infection:

— Catheter-related: the same micro-organism was cultured from the catheter or symptoms improve within 48 hours after removal of the catheter (C-PVC: peripheral catheter, C-CVC: central venous catheter (note: report C-CVC or C-PVC BSI as CRI3-CVC or CRI3-PVC respectively if microbiologically confirmed, see CRI3 definition)).

— Secondary to another infection: the same micro-organism was isolated from another infection site or strong clinical evidence exists that bloodstream infection was secondary to another infection site, invasive diagnostic procedure or foreign body

— Pulmonary (S-PUL)

— Urinary tract infection (S-UTI)

— Digestive tract infection (S-DIG)

— SSI (S-SSI): surgical site infection

— Skin and soft tissue (S-SST)

— Other (S-OTH)

— Unknown origin (UO): None of the above, bloodstream infection of unknown origin (verified during survey and no source found)

— Unknown (UNK): No information available about the source of the bloodstream infection or information missing

3.1.3. *CNS: CENTRAL NERVOUS SYSTEM INFECTION*

CNS-IC: Intracranial infection (brain abscess, subdural or epidural infection, encephalitis)

Intracranial infection must meet at least one of the following criteria:

— Patient has organisms cultured from brain tissue or dura

— Patient has an abscess or evidence of intracranial infection seen during a surgical operation or histopathologic examination

— Patient has at least two of the following signs or symptoms with no other recognised cause: headache, dizziness, fever (> 38 °C), localising neurologic signs, changing level of consciousness, or confusion

AND at least one of the following:

— organisms seen on microscopic examination of brain or abscess tissue obtained by needle aspiration or by biopsy during a surgical operation or autopsy

— positive antigen test on blood or urine

— radiographic evidence of infection, (e.g. abnormal findings on ultrasound, CT scan, MRI, radionuclide brain scan, or arteriogram)

— diagnostic single antibody titer (IgM) or four-fold increase in paired sera (IgG) for pathogen

AND if diagnosis is made antemortem, physician institutes appropriate antimicrobial therapy.

Note reporting instruction:

If meningitis and a brain abscess are present together, report the infection as IC

CNS-MEN: Meningitis or ventriculitis

Meningitis or ventriculitis must meet at least one of the following criteria:

— Patient has organisms cultured from cerebrospinal fluid (CSF)

— Patient has at least one of the following signs or symptoms with no other recognised cause: fever (> 38 °C), headache, stiff neck, meningeal signs, cranial nerve signs, or irritability

AND at least one of the following:

— increased white cells, elevated protein, and/or decreased glucose in CSF

— organisms seen on Gram's stain of CSF

— organisms cultured from blood

— positive antigen test of CSF, blood, or urine

— diagnostic single antibody titer (IgM) or four-fold increase in paired sera (IgG) for pathogen

AND if diagnosis is made antemortem, physician institutes appropriate antimicrobial therapy.

Note reporting instructions:

— Report CSF shunt infection as SSI if it occurs ≤ 1 year of placement; if later or after manipulation/access of the shunt, report as CNS-MEN

— Report meningoencephalitis as MEN

— Report spinal abscess with meningitis as MEN

CNS-SA: Spinal abscess without meningitis

An abscess of the spinal epidural or subdural space, without involvement of the cerebrospinal fluid or adjacent bone structures, must meet at least one of the following criteria:

— Patient has organisms cultured from abscess in the spinal epidural or subdural space

— Patient has an abscess in the spinal epidural or subdural space seen during a surgical operation or at autopsy or evidence of an abscess seen during a histopathologic examination

— Patient has at least one of the following signs or symptoms with no other recognised cause: fever (> 38 °C), back pain, focal tenderness, radiculitis, paraparesis, or paraplegia

AND at least one of the following:

— organisms cultured from blood

— radiographic evidence of a spinal abscess (e.g. abnormal findings on myelography, ultrasound, CT scan, MRI, or other scans [gallium, technetium, etc.])

AND if diagnosis is made antemortem, physician institutes appropriate antimicrobial therapy

Note reporting instruction:

Report spinal abscess with meningitis as meningitis (CNS-MEN)

3.1.4. *CRI: CATHETER-RELATED INFECTION* (14)

CRI1-CVC: Local CVC-related infection (no positive blood culture)

— quantitative CVC culture ≥ 10 3 CFU/ml or semi-quantitative CVC culture > 15 CFU

— AND pus/inflammation at the insertion site or tunnel

CRI1-PVC: Local PVC-related infection (no positive blood culture)

— quantitative PVC culture ≥ 10 3 CFU/ml or semi-quantitative PVC culture > 15 CFU

— AND pus/inflammation at the insertion site or tunnel

CRI2-CVC: General CVC-related infection (no positive blood culture)

— quantitative CVC culture ≥ 10 3 CFU/ml or semi-quantitative CVC culture > 15 CFU

— AND clinical signs improve within 48 hours after catheter removal

CRI2-PVC: General PVC-related infection (no positive blood culture)

— quantitative PVC culture ≥ 10 3 CFU/ml or semi-quantitative PVC culture > 15 CFU

— AND clinical signs improve within 48 hours after catheter removal

CRI3-CVC: microbiologically confirmed CVC-related bloodstream infection

— BSI occurring 48 hours before or after catheter removal

AND positive culture with the same micro-organism of either:

— quantitative CVC culture ≥ 10 3 CFU/ml or semi-quantitative CVC culture > 15 CFU

— quantitative blood culture ratio CVC blood sample/peripheral blood sample > 5

— differential delay of positive blood cultures: CVC blood sample culture positive two hours or more before peripheral blood culture (blood samples drawn at the same time)

— positive culture with the same micro-organism from pus from insertion site

CRI3-PVC: microbiologically confirmed PVC-related bloodstream infection

BSI occurring 48 hours before or after catheter removal

AND positive culture with the same micro-organism of either:

— quantitative PVC culture ≥ 10 3 CFU/ml or semi-quantitative PVC culture > 15 CFU

— positive culture with the same micro-organism from pus from insertion site

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(14) CVC = central vascular catheter, PVC = peripheral vascular catheter central vascular catheter colonisation should not be reported. A CRI3 (-CVC or -PVC) is also a bloodstream infection with source C- CVC or C-PVC respectively; however when a CRI3 is reported, the BSI should not be reported in the point prevalence survey; microbiologically confirmed catheter-related BSI should be reported as CRI3.

3.1.5. *CVS: CARDIOVASCULAR SYSTEM INFECTION*

CVS-VASC: Arterial or venous infection

Arterial or venous infection must meet at least one of the following criteria:

— Patient has organisms cultured from arteries or veins removed during a surgical operation

— AND blood culture not done or no organisms cultured from blood

— Patient has evidence of arterial or venous infection seen during a surgical operation or histopathologic examination

— Patient has at least one of the following signs or symptoms with no other recognised cause: fever (> 38 °C), pain, erythema, or heat at involved vascular site

— AND more than 15 colonies cultured from intravascular cannula tip using semiquantitative culture method

— AND blood culture not done or no organisms cultured from blood

— Patient has purulent drainage at involved vascular site

— AND blood culture not done or no organisms cultured from blood

Note reporting instructions:

Report infections of an arteriovenous graft, shunt, or fistula or intravascular cannulation site without organisms cultured from blood as CVS-VASC

CVS-ENDO: Endocarditis

Endocarditis of a natural or prosthetic heart valve must meet at least one of the following criteria:

— Patient has organisms cultured from valve or vegetation

— Patient has two or more of the following signs or symptoms with no other recognised cause: fever (> 38 °C), new or changing murmur, embolic phenomena, skin manifestations (e.g. petechiae, splinter haemorrhages, painful subcutaneous nodules), congestive heart failure, or cardiac conduction abnormality

AND at least one of the following:

— organisms cultured from two or more blood cultures

— organisms seen on Gram's stain of valve when culture is negative or not done

— valvular vegetation seen during a surgical operation or autopsy

— positive antigen test on blood or urine (e.g. *Haemophilus influenzae, Streptococcuspneumoniae, Neisseria meningitidis*, or Group B *Streptococcus*)

— evidence of new vegetation seen on echocardiogram

AND if diagnosis is made antemortem, physician institutes appropriate antimicrobial therapy

CVS-CARD: Myocarditis or pericarditis

Myocarditis or pericarditis must meet at least one of the following criteria:

— Patient has organisms cultured from pericardial tissue or fluid obtained by needle aspiration or during a surgical operation

— Patient has at least two of the following signs or symptoms with no other recognised cause: fever (> 38 °C), chest pain, paradoxical pulse, or increased heart size

AND at least one of the following:

— abnormal EKG consistent with myocarditis or pericarditis

— positive antigen test on blood (e.g. *Haemophilus influenzae, Streptococcus pneumoniae*)

— evidence of myocarditis or pericarditis on histologic examination of heart tissue

— four-fold rise in type-specific antibody with or without isolation of virus from pharynx or faeces

— pericardial effusion identified by echocardiogram, CT scan, MRI, or angiography

CVS-MED: Mediastinitis

Mediastinitis must meet at least one of the following criteria:

— Patient has organisms cultured from mediastinal tissue or fluid obtained during a surgical operation or needle aspiration

— Patient has evidence of mediastinitis seen during a surgical operation or histopathologic examination

— Patient has at least one of the following signs or symptoms with no other recognised cause: fever (> 38 °C), chest pain, or sternal instability

AND at least one of the following:

— purulent discharge from mediastinal area

— organisms cultured from blood or discharge from mediastinal area

— mediastinal widening on x-ray

Note reporting instruction:

Report mediastinitis following cardiac surgery that is accompanied by osteomyelitis as SSI-O

3.1.6. *EENT: EYE, EAR, NOSE, THROAT, OR MOUTH INFECTION*

EENT-CONJ: Conjunctivitis

Conjunctivitis must meet at least one of the following criteria:

— Patient has pathogens cultured from purulent exudate obtained from the conjunctiva or contiguous tissues, such as eyelid, cornea, meibomian glands, or lacrimal glands

— Patient has pain or redness of conjunctiva or around eye

AND at least one of the following:

— WBCs and organisms seen on Gram's stain of exudates

— purulent exudates

— positive antigen test (e.g. ELISA or IF for *Chlamydia trachomatis*, herpes simplex virus, adenovirus) on exudate or conjunctival scraping

— multinucleated giant cells seen on microscopic examination of conjunctival exudate or scrapings

— positive viral culture

— diagnostic single antibody titer (IgM) or four-fold increase in paired sera (IgG) for pathogen

Note reporting instructions:

— Report other infections of the eye as EYE

— Do not report chemical conjunctivitis caused by silver nitrate (AgNO3) as a health care-associated infection

— Do not report conjunctivitis that occurs as a part of a more widely disseminated viral illness (such as measles, chickenpox, or a URI)

EENT-EYE: Eye, other than conjunctivitis

An infection of the eye, other than conjunctivitis, must meet at least one of the following criteria:

— Patient has organisms cultured from anterior or posterior chamber or vitreous fluid

— Patient has at least two of the following signs or symptoms with no other recognised cause: eye pain, visual disturbance, or hypopyon

AND at least one of the following:

— physician diagnosis of an eye infection

— positive antigen test on blood (e.g. *Haemophilus influenzae, Streptococcus pneumoniae*)

— organisms cultured from blood

EENT-EAR: Ear mastoid

Ear and mastoid infections must meet at least one of the following criteria:

Otitis externa must meet at least one of the following criteria:

— Patient has pathogens cultured from purulent drainage from ear canal

— Patient has at least one of the following signs or symptoms with no other recognised cause: fever (> 38 °C), pain, redness, or drainage from ear canal

— AND organisms seen on Gram's stain of purulent drainage

Otitis media must meet at least one of the following criteria:

— Patient has organisms cultured from fluid from middle ear obtained by tympanocentesis or at surgical operation

— Patient has at least two of the following signs or symptoms with no other recognised cause: fever (> 38 °C), pain in the eardrum, inflammation, retraction or decreased mobility of eardrum, or fluid behind eardrumEN L 262/46 Official Journal of the European Union 27.9.2012

Otitis interna must meet at least one of the following criteria:

— Patient has organisms cultured from fluid from inner ear obtained at surgical operation

— Patient has a physician diagnosis of inner ear infection

Mastoiditis must meet at least one of the following criteria:

— Patient has organisms cultured from purulent drainage from mastoid

— Patient has at least two of the following signs or symptoms with no other recognised cause: fever (> 38 °C), pain, tenderness, erythema, headache, or facial paralysis

AND at least one of the following:

— organisms seen on Gram's stain of purulent material from mastoid

— positive antigen test on blood

EENT-ORAL: Oral cavity (mouth, tongue, or gums)

Oral cavity infections must meet at least one of the following criteria:

— Patient has organisms cultured from purulent material from tissues of oral cavity

— Patient has an abscess or other evidence of oral cavity infection seen on direct examination, during a surgical operation, or during a histopathologic examination

— Patient has at least one of the following signs or symptoms with no other recognised cause: abscess, ulceration, or raised white patches on inflamed mucosa, or plaques on oral mucosa

AND at least one of the following:

— organisms seen on Gram's stain

— positive KOH (potassium hydroxide) stain

— multinucleated giant cells seen on microscopic examination of mucosal scrapings

— positive antigen test on oral secretions

— diagnostic single antibody titer (IgM) or four-fold increase in paired sera (IgG) for pathogen

— physician diagnosis of infection and treatment with topical or oral antifungal therapy

Note reporting instruction:

Report health care-associated primary herpes simplex infections of the oral cavity as ORAL; recurrent herpes infections are not healthcare-associated

EENT-SINU: Sinusitis

Sinusitis must meet at least one of the following criteria:

— Patient has organisms cultured from purulent material obtained from sinus cavity

— Patient has at least one of the following signs or symptoms with no other recognised cause: fever (> 38 °C), pain or tenderness over the involved sinus, headache, purulent exudate, or nasal obstruction

AND at least one of the following:

— positive transillumination

— positive radiographic examination (including CT scan)

EENT-UR: Upper respiratory tract, pharyngitis, laryngitis, epiglottitis

Upper respiratory tract infections must meet at least one of the following criteria:

— Patient has at least two of the following signs or symptoms with no other recognised cause: fever (> 38 °C), erythema of pharynx, sore throat, cough, hoarseness, or purulent exudate in throat

AND at least one of the following:

— organisms cultured from the specific site

— organisms cultured from blood

— positive antigen test on blood or respiratory secretions

— diagnostic single antibody titer (IgM) or four-fold increase in paired sera (IgG) for pathogen

— physician diagnosis of an upper respiratory infection

Patient has an abscess seen on direct examination, during a surgical operation, or during a histopathologic examination

3.1.7. *GI: GASTROINTESTINAL SYSTEM INFECTION*

GI-CDI: *Clostridium difficile* infection

A *Clostridium difficile* infection (previously also referred to as *Clostridium difficile* associated diarrhoea or CDAD) must meet at least one of the following criteria:

— Diarrhoeal stools or toxic megacolon, and a positive laboratory assay for *Clostridium difficile* toxin A and/or B in stools

— Pseudomembranous colitis revealed by lower gastro-intestinal endoscopy

— Colonic histopathology characteristic of *Clostridium difficile* infection (with or without diarrhoea) on a specimen obtained during endoscopy, colectomy or autopsy

GI-GE: Gastroenteritis (excl. CDI)

Gastroenteritis must meet at least one of the following criteria:

— Patient has an acute onset of diarrhoea (liquid stools for more than 12 hours) with or without vomiting or fever (> 38 °C) and no likely non-infectious cause (e.g. diagnostic tests, therapeutic regimen other than antimicrobial agents, acute exacerbation of a chronic condition, or psychological stress)

— Patient has at least two of the following signs or symptoms with no other recognised cause: nausea, vomiting, abdominal pain, fever (> 38 °C), or headache

AND at least one of the following:

— an enteric pathogen is cultured from stool or rectal swab

— an enteric pathogen is detected by routine or electron microscopy

— an enteric pathogen is detected by antigen or antibody assay on blood or faeces

— evidence of an enteric pathogen is detected by cytopathic changes in tissue culture (toxin assay)

— diagnostic single antibody titer (IgM) or four-fold increase in paired sera (IgG) for pathogen

GI-GIT: Gastrointestinal tract (oesophagus, stomach, small and large bowel, and rectum) excluding gastroenteritis and appendicitis

Gastrointestinal tract infections, excluding gastroenteritis and appendicitis, must meet at least one of the following criteria:

— Patient has an abscess or other evidence of infection seen during a surgical operation or histopathologic examination

— Patient has at least two of the following signs or symptoms with no other recognised cause and compatible with infection of the organ or tissue involved: fever (> 38 °C), nausea, vomiting, abdominal pain, or tenderness

AND at least one of the following:

— organisms cultured from drainage or tissue obtained during a surgical operation or endoscopy or from a surgically placed drain

— organisms seen on Gram's or KOH stain or multinucleated giant cells seen on microscopic examination of drainage or tissue obtained during a surgical operation or endoscopy or from a surgically placed drain

— organisms cultured from blood

— evidence of pathologic findings on radiographic examination

— evidence of pathologic findings on endoscopic examination (e.g. *Candida* spp. esophagitis or proctitis)

GI-HEP: Hepatitis

Hepatitis must meet the following criterion:

Patient has at least two of the following signs or symptoms with no other recognised cause: fever (> 38 °C), anorexia, nausea, vomiting, abdominal pain, jaundice, or history of transfusion within the previous 3 months

AND at least one of the following:

— positive antigen or antibody test for hepatitis A, hepatitis B, hepatitis C, or delta hepatitis

— abnormal liver function tests (e.g. elevated ALT/AST, bilirubin)

— cytomegalovirus (CMV) detected in urine or oropharyngeal secretions

Note reporting instructions:

— Do not report hepatitis or jaundice of non-infectious origin (alpha-1 antitrypsin deficiency, etc.)

— Do not report hepatitis or jaundice that results from exposure to hepatotoxins (alcoholic or acetaminophen-induced hepatitis, etc.)

— Do not report hepatitis or jaundice that results from biliary obstruction (cholecystitis)

GI-IAB: Intraabdominal, not specified elsewhere including gallbladder, bile ducts, liver (excluding viral hepatitis), spleen, pancreas, peritoneum, subphrenic or subdiaphragmatic space, or other intraabdominal tissue or area not specified elsewhere

Intraabdominal infections must meet at least one of the following criteria:

— Patient has organisms cultured from purulent material from intraabdominal space obtained during a surgical operation or needle aspiration

— Patient has abscess or other evidence of intraabdominal infection seen during a surgical operation or histopathologic examination

— Patient has at least two of the following signs or symptoms with no other recognised cause: fever (> 38 °C), nausea, vomiting, abdominal pain, or jaundice

AND at least one of the following:

— organisms cultured from drainage from surgically placed drain (e.g. closed suction drainage system, open drain, T-tube drain)

— organisms seen on Gram's stain of drainage or tissue obtained during surgical operation or needle aspiration

— organisms cultured from blood and radiographic evidence of infection (e.g. abnormal findings on ultrasound, CT scan, MRI, or radiolabel scans [gallium, technetium, etc.] or on abdominal x-ray)

Note reporting instruction:

Do not report pancreatitis (an inflammatory syndrome characterised by abdominal pain, nausea, and vomiting associated with high serum levels of pancreatic enzymes) unless it is determined to be infectious in origin

3.1.8. *LRI: LOWER RESPIRATORY TRACT INFECTION, OTHER THAN PNEUMONIA*

LRI-BRON: Bronchitis, tracheobronchitis, bronchiolitis, tracheitis, without evidence of pneumonia

Tracheobronchial infections must meet at least one of the following criteria:

Patient has no clinical or radiographic evidence of pneumonia

AND patient has at least two of the following signs or symptoms with no other recognised cause: fever (> 38 °C), cough, new or increased sputum production, rhonchi, wheezing

AND at least one of the following:

— positive culture obtained by deep tracheal aspirate or bronchoscopy

— positive antigen test on respiratory secretions

Note reporting instruction:

Do not report chronic bronchitis in a patient with chronic lung disease as an infection unless there is evidence of an acute secondary infection, manifested by change in organism

LRI-LUNG: Other infections of the lower respiratory tract

Other infections of the lower respiratory tract must meet at least one of the following criteria:

— Patient has organisms seen on smear or cultured from lung tissue or fluid, including pleural fluid

— Patient has a lung abscess or empyema seen during a surgical operation or histopathologic examination

— Patient has an abscess cavity seen on radiographic examination of lung

Note reporting instruction:

Report lung abscess or empyema without pneumonia as LUNG

3.1.9. *NEO: SPECIFIC NEONATAL CASE DEFINITIONS*

NEO-CSEP: Clinical Sepsis

ALL of the 3 following criteria:

— Supervising physician started appropriate antimicrobial therapy for sepsis for at least five days.

— No detection of pathogens in blood culture or not tested

— No obvious infection at another site

AND two of the following criteria (without other apparent cause):

— Fever (> 38 °C) or temperature instability (frequent post-set of the incubator) or hypothermia (< 36,5 °C)

— Tachycardia (> 200/min) or new/increased bradycardia (< 80/min)

— Capillary refilling time (CRT) > 2 s

— New or increased apnoea (s) (> 20 s)

— Unexplained metabolic acidosis

— New-onset hyperglycaemia (> 140 mg/dl)

— Another sign of sepsis (skin colour (only if the CRT is not used), laboratory signs (CRP, interleukin), increased oxygen requirement (intubation), unstable general condition of the patient, apathy)

NEO-LCBI: Laboratory-confirmed BSI

— at least two of: temperature > 38 °C or < 36,5 °C or temperature instability, tachycardia or bradycardia, apnoea, extended capillary refilling time (CRT), metabolic acidosis, hyperglycaemia, other sign of BSI such as apathy

AND

— a recognised pathogen other than coagulase-negative staphylococci (CNS) cultured from blood or cerebrospinal fluid (CSF; this is included because meningitis in this age group is usually haematogenous, so positive CSF can be regarded as evidence of BSI even if blood cultures are negative or were not taken)

Note reporting instructions:

— in order to be consistent with BSI reporting in adults (including secondary BSI), the criterion 'the organism is not related to an infection at another site' was removed from the Neo-KISS definition for the purposes of the EU PPS

— report the origin of the neonatal BSI in the field BSI origin

— if both the case definitions for NEO-LCBI and NEO-CNSB are matched, report NEO-LCBI

NEO-CNSB: Laboratory-confirmed BSI with coagulase-negative staphylococci (CNS)

— at least two of: temperature > 38 °C or < 36,5 °C or temperature instability, tachycardia or bradycardia, apnoea, extended recapillarisation time, metabolic acidosis, hyperglycaemia, other sign of BSI such as apathy

— AND CNS is cultured from blood or catheter tip

— AND patient has one of: C-reactive protein > 2,0 mg/dl, immature/total neutrophil ratio (I/T ratio) > 0,2, leukocytes < 5/nl, platelets < 100/nl

Note reporting instructions:

— in order to be consistent with BSI reporting in adults (including secondary BSI), the criterion 'the organism is not related to an infection at another site' was removed from the Neo-KISS definition for the purposes of the EU PPS

— report the origin of the neonatal BSI in the field BSI origin

— if both the case definitions for NEO-LCBI and NEO-CNSB are matched, report NEO-LCBI

NEO-PNEU: Pneumonia

— respiratory compromise

— AND new infiltrate, consolidation or pleural effusion on chest X ray

— AND at least four of: temperature > 38 °C or < 36,5 °C or temperature instability, tachycardia or bradycardia, tachypnoea or apnoea, dyspnoea, increased respiratory secretions, new onset of purulent sputum, isolation of a pathogen from respiratory secretions, C-reactive protein > 2,0 mg/dl, I/T ratio > 0,2

NEO-NEC: Necrotising enterocolitis

— Histopathological evidence of necrotising enterocolitis

OR

— at least one characteristic radiographic abnormality (pneumoperitoneum, pneumatosis intestinalis, unchanging 'rigid' loops of small bowel) plus at least two of the following without other explanation: vomiting, abdominal distension, prefeeding residuals, persistent microscopic or gross blood in stools

3.1.10. *PN: PNEUMONIA*

Two or more serial chest X-rays or CT-scans with a suggestive image of pneumonia for patients with underlying cardiac or pulmonary disease. In patients without underlying cardiac or pulmonary disease one definitive chest X-ray or CT-scan is sufficient

AND at least one of the following symptoms

Fever > 38 °C with no other cause

Leucopoenia (< 4 000 WBC/mm 3) or leucocytosis (≥ 12 000 WBC/mm 3)

AND at least one of the following (or at least two if clinical pneumonia only = PN 4 and PN 5)

— New onset of purulent sputum, or change in character of sputum (colour, odour, quantity, consistency)

— Cough or dyspnoea or tachypnea

— Suggestive auscultation (rales or bronchial breath sounds), ronchi, wheezing

— Worsening gas exchange (e.g. O 2 desaturation or increased oxygen requirements or increased ventilation demand)

and according to the used diagnostic method

(a) **Bacteriologic diagnostic performed by:**

Positive quantitative culture from minimally contaminated LRT (15) specimen (PN 1)

— Broncho-alveolar lavage (BAL) with a threshold of ≥ 10 4 CFU/ml (16) or ≥ 5 % of BAL obtained cells contains intracellular bacteria on direct microscopic exam (classified on the diagnostic category BAL)

— Protected brush (PB Wimberley) with a threshold of ≥ 10 3 CFU/ml

— Distal protected aspirate (DPA) with a threshold of ≥ 10 3 CFU/ml

Positive quantitative culture from possibly contaminated LRT specimen (PN 2)

— Quantitative culture of LRT specimen (e.g. endotracheal aspirate) with a threshold of 10 6 CFU/ml

(b) **Alternative microbiology methods (PN 3)**

— Positive blood culture not related to another source of infection

— Positive growth in culture of pleural fluid

— Pleural or pulmonary abscess with positive needle aspiration

— Histologic pulmonary exam shows evidence of pneumonia

— Positive exams for pneumonia with virus or particular germs (e.g. *Legionella, Aspergillus*, mycobacteria, mycoplasma, *Pneumocystis jirovecii*)

— Positive detection of viral antigen or antibody from respiratory secretions (e.g. EIA, FAMA, shell vial assay, PCR)

— Positive direct exam or positive culture from bronchial secretions or tissue

— Seroconversion (e.g. influenza viruses, *Legionella, Chlamydia*)

— Detection of antigens in urine (*Legionella*)

(c) **Others**

— Positive sputum culture or non-quantitative LRT specimen culture (PN 4)

— No positive microbiology (PN 5)

Note: PN 1 and PN 2 criteria were validated without previous antimicrobial therapy

Intubation-associated pneumonia (IAP)

A pneumonia is defined as intubation-associated (IAP) if an invasive respiratory device was present (even intermittently) in the 48 hours preceding the onset of infection

Note: Pneumonia for which intubation was started on the day of onset without additional information on the sequence of the events is not considered as IAP

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(15) LRT = Lower Respiratory Tract.

(16) CFU = Colony Forming Units.

3.1.11. *REPR: REPRODUCTIVE TRACT INFECTION*

REPR-EMET: Endometritis

Endometritis must meet at least one of the following criteria:

— Patient has organisms cultured from fluid or tissue from endometrium obtained during surgical operation, by needle aspiration, or by brush biopsy

— Patient has at least two of the following signs or symptoms with no other recognised cause: fever (> 38 °C), abdominal pain, uterine tenderness, or purulent drainage from uterus

Note reporting instruction:

Report postpartum endometritis as a health care-associated infection unless the amniotic fluid is infected at the time of admission or the patient was admitted 48 hours after rupture of the membrane

REPR-EPIS: Episiotomy

Episiotomy infections must meet at least one of the following criteria:

— Postvaginal delivery patient has purulent drainage from the episiotomy

— Postvaginal delivery patient has an episiotomy abscess

REPR-VCUF: Vaginal cuff

Vaginal cuff infections must meet at least one of the following criteria:

— Posthysterectomy patient has purulent drainage from the vaginal cuff

— Posthysterectomy patient has an abscess at the vaginal cuff

— Posthysterectomy patient has pathogens cultured from fluid or tissue obtained from the vaginal cuff

Note reporting instruction:

Report vaginal cuff infections as SSI-O

REPR-OREP: Other infections of the male or female reproductive tract (epididymis, testes, prostate, vagina, ovaries, uterus, or other deep pelvic tissues, excluding endometritis or vaginal cuff infections)

Other infections of the male or female reproductive tract must meet at least one of the following criteria:

— Patient has organisms cultured from tissue or fluid from affected site

— Patient has an abscess or other evidence of infection of affected site seen during a surgical operation or histopathologic examination

— Patient has two of the following signs or symptoms with no other recognised cause: fever (> 38 °C), nausea, vomiting, pain, tenderness, or dysuria

AND at least one of the following:

— organisms cultured from blood

— physician diagnosis

Note reporting instructions:

— Report endometritis as EMET

— Report vaginal cuff infections as VCUF

3.1.12. *SSI: SURGICAL SITE INFECTION*

Note: All definitions are to be assumed to be confirmed for the purposes of surveillance reporting.

Superficial incisional (SSI-S)

Infection occurs within 30 days after the operation AND infection involves only skin and subcutaneous tissue of the incision AND at least one of the following:

— Purulent drainage with or without laboratory confirmation, from the superficial incision

— Organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision

— At least one of the following signs or symptoms of infection: pain or tenderness, localised swelling, redness, or heat AND superficial incision is deliberately opened by surgeon, unless incision is culture-negative

— Diagnosis of superficial incisional SSI made by a surgeon or attending physician

Deep incisional (SSI-D)

Infection occurs within 30 days after the operation if no implant is left in place or within one year if implant is in place AND the infection appears to be related to the operation AND infection involves deep soft tissue (e.g. fascia, muscle) of the incision AND at least one of the following:

— Purulent drainage from the deep incision but not from the organ/space component of the surgical site

— A deep incision spontaneously dehisces or is deliberately opened by a surgeon when the patient has at least one of the following signs or symptoms: fever (> 38 °C), localised pain or tenderness, unless incision is culture-negative

— An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiological examination

— Diagnosis of deep incisional SSI made by a surgeon or attending physician

Organ/Space (SSI-O)

Infection occurs within 30 days after the operation if no implant is left in place or within one year if implant is in place AND the infection appears to be related to the operation AND infection involves any part of the anatomy (e.g. organs and spaces) other than the incision which was opened or manipulated during an operation AND at least one of the following:

— Purulent drainage from a drain that is placed through a stab wound into the organ/space

— Organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space

— An abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiological examination

— Diagnosis of organ/space SSI made by a surgeon or attending physician

3.1.13. *SST: SKIN AND SOFT TISSUE INFECTION*

SST-SKIN: Skin infection

Skin infections must meet at least one of the following criteria:

— Patient has purulent drainage, pustules, vesicles, or boils

— Patient has at least two of the following signs or symptoms with no other recognised cause: pain or tenderness, localised swelling, redness, or heat

AND at least one of the following:

— organisms cultured from aspirate or drainage from affected site; if organisms are normal skin flora (e.g. diphtheroids [*Corynebacterium* spp.], *Bacillus* [not *B.anthracis*] spp., *Propionibacterium* spp., coagulase-negative staphylococci [including *Staphylococcusepidermidis*], viridans group streptococci, *Aerococcus* spp., *Micrococcus* spp.), they must be a pure culture

— organisms cultured from blood

— positive antigen test performed on infected tissue or blood (e.g. herpes simplex, varicella zoster, *Haemophilus influenzae, Neisseria meningitidis*)

— multinucleated giant cells seen on microscopic examination of affected tissue

— diagnostic single antibody titer (IgM) or four-fold increase in paired sera (IgG) for pathogen

Note reporting instructions:

— Report infected decubitus ulcers as DECU

— Report infected burns as BURN

— Report breast abscesses or mastitis as BRST

SST-ST: Soft tissue (necrotising fascitis, infectious gangrene, necrotising cellulitis, infectious myositis, lymphadenitis, or lymphangitis)

Soft tissue infections must meet at least one of the following criteria:

— Patient has organisms cultured from tissue or drainage from affected site

— Patient has purulent drainage at affected site

— Patient has an abscess or other evidence of infection seen during a surgical operation or histopathologic examination

— Patient has at least two of the following signs or symptoms at the affected site with no other recognised cause: localised pain or tenderness, redness, swelling, or heat

AND at least one of the following:

— organisms cultured from blood

— positive antigen test performed on blood or urine (e.g. *Haemophilus influenzae, Streptococcus pneumoniae, Neisseria meningitidis*, Group B *Streptococcus, Candida* spp.)

— diagnostic single antibody titer (IgM) or four-fold increase in paired sera (IgG) for pathogen

Note reporting instructions:

— Report infected decubitus ulcers as DECU

— Report infection of deep pelvic tissues as OREP

SST-DECU: Decubitus ulcer, including both superficial and deep infections

Decubitus ulcer infections must meet the following criterion:

— Patient has at least two of the following signs or symptoms with no other recognised cause: redness, tenderness, or swelling of decubitus wound edges

AND at least one of the following:

— organisms cultured from properly collected fluid or tissue

— organisms cultured from blood

SST-BURN: Burn

Burn infections must meet at least one of the following criteria:

— Patient has a change in burn wound appearance or character, such as rapid eschar separation, or dark brown, black, or violaceous discoloration of the eschar, or oedema at wound margin

AND histologic examination of burn biopsy shows invasion of organisms into adjacent viable tissue

Patient has a change in burn wound appearance or character, such as rapid eschar separation, or dark brown, black, or violaceous discoloration of the eschar, or oedema at wound margin

AND at least one of the following:

— organisms cultured from blood in the absence of other identifiable infection

— isolation of herpes simplex virus, histologic identification of inclusions by light or electron microscopy, or visualisation of viral particles by electron microscopy in biopsies or lesion scrapings

Patient with a burn has at least two of the following signs or symptoms with no other recognised cause: fever (> 38 °C) or hypothermia (< 36 °C), hypotension, oliguria (< 20 cc/hr), hyperglycaemia at previously tolerated level of dietary carbohydrate, or mental confusion

AND at least one of the following:

— histologic examination of burn biopsy shows invasion of organisms into adjacent viable tissue

— organisms cultured from blood

— isolation of herpes simplex virus, histologic identification of inclusions by light or electron microscopy, or visualisation of viral particles by electron microscopy in biopsies or lesion scrapings

SST-BRST: Breast abscess or mastitis

A breast abscess or mastitis must meet at least one of the following criteria:

— Patient has a positive culture of affected breast tissue or fluid obtained by incision and drainage or needle aspiration

— Patient has a breast abscess or other evidence of infection seen during a surgical operation or histopathologic examination

— Patient has fever (> 38 °C) and local inflammation of the breast

AND physician diagnosis of breast abscess

3.1.14. *SYS: SYSTEMIC INFECTION*

SYS-DI: Disseminated infection

Disseminated infection is infection involving multiple organs or systems, without an apparent single site of infection, usually of viral origin, and with signs or symptoms with no other recognised cause and compatible with infectious involvement of multiple organs or systems

Note reporting instructions:

— Use this code for viral infections involving multiple organ systems (e.g. measles, mumps, rubella, varicella, erythema infectiosum). These infections often can be identified by clinical criteria alone. Do not use this code for healthcare-associated infections with multiple metastatic sites, such as with bacterial endocarditis; only the primary site of these infections should be reported

— Do not report fever of unknown origin (FUO) as DI

— Report viral exanthemas or rash illness as DI

SYS-CSEP: Clinical sepsis in adults and children

Patient has at least one of the following

— clinical signs or symptoms with no other recognised cause

— fever (> 38 °C)

— hypotension (systolic pressure < 90 mm/Hg)

— or oliguria (20 cm 3 (ml)/hr)

And blood culture not done or no organisms or antigen detected in blood

And no apparent infection at another site

And physician institutes treatment for sepsis

Note reporting instructions:

— Do not use this code unless absolutely needed

— For CSEP in neonates, use NEO-CSEP case definition (see below)

3.1.15. *UTI: URINARY TRACT INFECTION*

UTI-A: microbiologically confirmed symptomatic UTI

Patient has at least one of the following signs or symptoms with no other recognised cause: fever (> 38 °C), urgency, frequency, dysuria, or suprapubic tenderness

AND

patient has a positive urine culture, that is, ≥ 10 5 microorganisms per ml of urine with no more than two species of microorganisms.

UTI-B: not microbiologically confirmed symptomatic UTI

Patient has at least two of the following with no other recognised cause: fever (> 38 °C), urgency, frequency, dysuria, or suprapubic tenderness

AND

at least one of the following:

— Positive dipstick for leukocyte esterase and/or nitrate

— Pyuria urine specimen with ≥ 10 4 WBC/ml or ≥ 3 WBC/high-power field of unspun urine

— Organisms seen on Gram stain of unspun urine

— At least two urine cultures with repeated isolation of the same uropathogen (gram-negative bacteria or *Staphylococcus saprophyticus*) with ≥ 10 2 colonies/ml urine in non-voided specimens

— ≤ 10 5 colonies/ml of a single uropathogen (gram-negative bacteria or *Staphylococcus saprophyticus*) in a patient being treated with effective antimicrobial agent for a urinary infection

— Physician diagnosis of a urinary tract infection

— Physician institutes appropriate therapy for a urinary infection

Asymptomatic bacteriuria should not be reported, but bloodstream infections secondary to asymptomatic bacteriuria are reported as BSI with source (origin) S-UTI

A urinary tract infection (UCA-UTI) is defined as catheter-associated if an indwelling urinary catheter was present (even intermittently) in the seven days preceding the onset of infection

3.2. GENERIC CASE DEFINITION OF ANTIMICROBIAL RESISTANCE

Definition

A microorganism is defined as clinically susceptible, clinically intermediate or clinically resistant to an antimicrobial agent according to the EUCAST clinical breakpoints, i.e. clinical MIC breakpoints and their inhibition zone diameter correlates (17)

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(17) http://www.eucast.org/clinical_breakpoints/

Clinically Susceptible (S)

— a micro-organism is defined as susceptible by a level of antimicrobial activity associated with a high likelihood of therapeutic success

— a micro-organism is categorised as susceptible (S) by applying the appropriate breakpoint in a defined phenotypic test system

— this breakpoint may be altered with legitimate changes in circumstances

Clinically Intermediate (I)

— a micro-organism is defined as intermediate by a level of antimicrobial agent activity associated with uncertain therapeutic effect. It implies that an infection due to the isolate may be appropriately treated in body sites where the drugs are physically concentrated or when a high dosage of drug can be used; it also indicates a buffer zone that should prevent small, uncontrolled, technical factors from causing major discrepancies in interpretations

— a micro-organism is categorised as intermediate (I) by applying the appropriate breakpoints in a defined phenotypic test system

— these breakpoints may be altered with legitimate changes in circumstances

Clinically Resistant (R)

— a micro-organism is defined as resistant by a level of antimicrobial activity associated with a high likelihood of therapeutic failure

— a micro-organism is categorised as resistant (R) by applying the appropriate breakpoint in a defined phenotypic test system

— this breakpoint may be altered with legitimate changes in circumstances

Clinical breakpoints are presented as S≤x mg/L; I>x, ≤y mg/L; R>y mg/L

Microorganisms and corresponding antimicrobial agents (bug-drug combinations) relevant for surveillance in humans are defined in the relevant surveillance protocols.

Tilkynningarskyldir sjúkdómar 2013–2014				
Ár	**2013**	**2013**	**2014**	**2014**
Sjúkdómar og sjúkdómsvaldar	**Fjöldi**	**á 100.000**	**Fjöldi**	**á 100.000**
Alnæmi (AIDS)	1	0	0	0
Anisakíusýking	0	0	0	0
Bandormslirfusýki (cysticercosis)	0	0	0	0
Barnaveiki	0	0	0	0
Berklar	12	4	9	3
Blæðandi veiruhitasóttir	0	0	0	0
Bólusótt	0	0	0	0
Bótúlismi	0	0	0	0
Bráð sjúkdómseinkenni af völdum eiturefna og geislavirkra efna	0	0	0	0
Breiðvirkir betalaktamasamyndandi sýklar (ESBL)	109	34	134	41
Creutzfeldt Jakobs veiki/afbrigði	0	0	0	0
Enterohemorrhagisk E. coli sýking	3	1	3	1
Giardiasis	20	6	20	6
Gulusótt (yellow fever)	0	0	0	0
HABL	0	0	0	0
Hemofilus influenzea sýking b	0	0	0	0
Hettusótt	1	0	0	0
Hérasótt (tularemia)	0	0	0	0
HIV sýking (human immunod. virus)	11	3	10	3
Holdsveiki	0	0	0	0
Huldusótt (Q-fever)	0	0	0	0
Hundaæði	0	0	0	0
Inflúensa A(H1N1) 2009	98	30	112	34
Inflúensa A(H3)	78	24	17	5
Inflúensulík einkenni	3191	991	1464	450
Ífarandi Hemophilus influensae sýking	1	0	4	1
Ífarandi pneumókokkasýkingar	19	6	24	7
Jersiníusýking (Y. enterocolitica, Y. pseudotuberculosis)	-	-	3	1
Kampýlóbaktersýking	101	31	142	44
Kikhósti	31	10	1	0
Klamydíusýking (Chl. trachomatis)	2179	677	1845	567

Tilkynningarskyldir sjúkdómar 2013–2014				
Ár	**2013**	**2013**	**2014**	**2014**
Sjúkdómar og sjúkdómsvaldar	**Fjöldi**	**á 100.000**	**Fjöldi**	**á 100.000**
Kólera og kólerulíkar sýkingar	0	0	0	0
Launsporasýking (cryptósporidium sýking)	6	2	1	0
Legíónellusýking	1	0	4	1
Lekandi	19	6	29	9
Leptóspirusýking	0	0	0	0
Lifrarbólga A	0	0	0	0
Lifrarbólga B (bráð, viðvarandi)	16	5	28	9
Lifrarbólga C	64	20		0
Lifrarbólga E	0	0	0	0
Lifrarbólga vegna annarra veira	0	0	0	0
Listeríusýking	1	0	4	1
Lömunarveiki	0	0	0	0
Malaría	0	0	4	1
Meningókokkasjúkdómur	1	0	1	0
Methicillin ónæmur stafýlokokkus aureus, MÓSA	32	10	55	17
Miltisbrandur	0	0	0	0
Mislingar	0	0	1	0
Óvæntir atburðir sem ógnað geta heilsu manna	0	0	0	0
Rauðir hundar	0	0	0	0
Salmonellusýking	49	15	41	13
Sárasótt *	3	1	24	7
Sígellusýking	0	0	2	1
Stífkrampi	0	0	0	0
Sullaveiki	0	0	0	0
Svarti dauði	0	0	0	0
Toxóplasmasýking	0	0	0	0
Taugaveiki/taugaveikibróðir	0	0	0	0
Tríkínusýking	0	0	0	0
Vankomýcín ónæmur enterókokkur	1	0	1	0
Vesturnílarveirusótt	0	0	0	0
Öldusótt (brucellosis)	0	0	0	0

* Klínísk greining byggð á blóðvatnsprófi

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