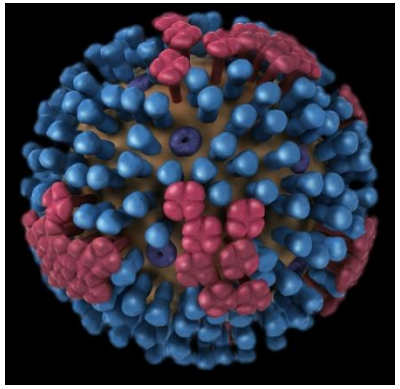
İNFLUENZA AŞISI:İŞE YARAMADI MI?

Doç.Dr.Neşe DEMİRTÜRK
AKÜ TIP FAKÜLTESİ
İnfeksiyon Hastalıkları ve Klinik Mikrobiyoloji AD.
Afyonkarahisar,2015.



İNFLUENZA

- İnsandan insana kolaylıkla yayılan ve sezonal özellik gösteren akut viral infeksiyon

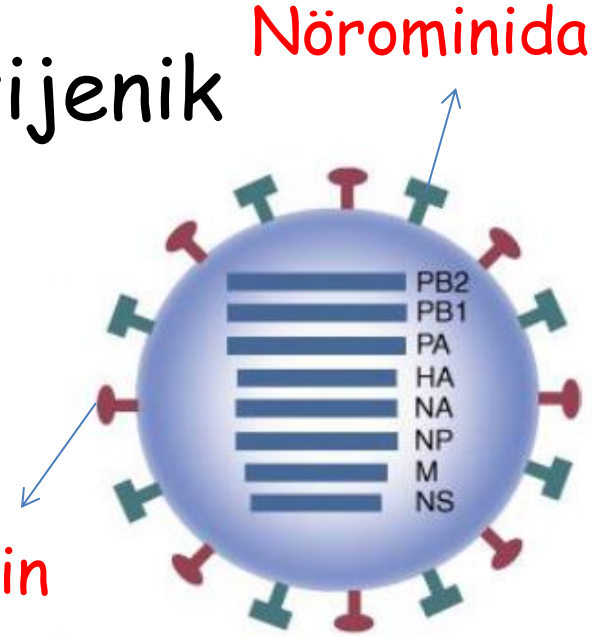
- Tüm dünyada yaş, cinsiyet ya da özel bir grup gözetmeden herkesi etkileyebilme kapasitesi var

Etken *influenza* virusu

- Orthomyxoviridae ailesinden zarflı bir RNA virusu

- Nükleokapsid ve matriks proteinlerine göre 3 farklı antijenik tipi var; *A, B, C*

- İki önemli yüzey ag var

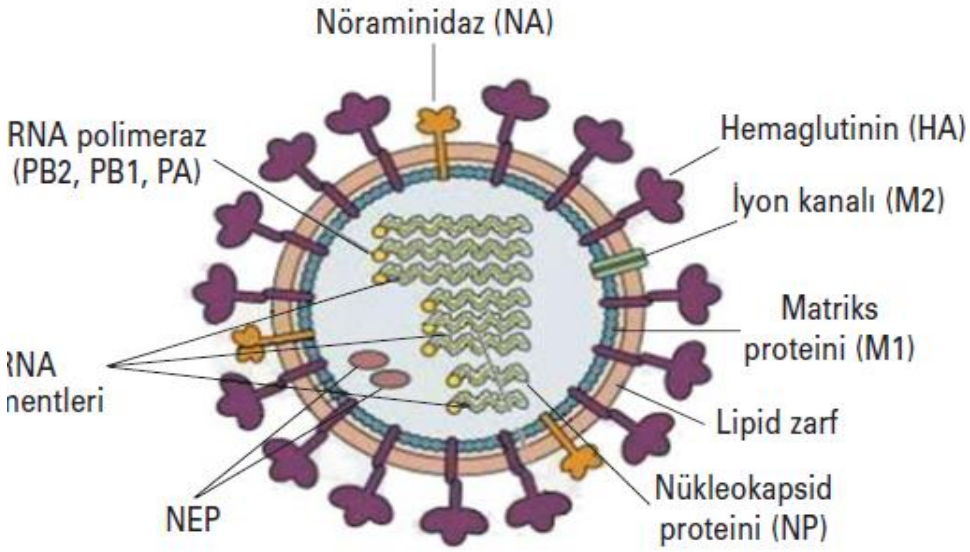


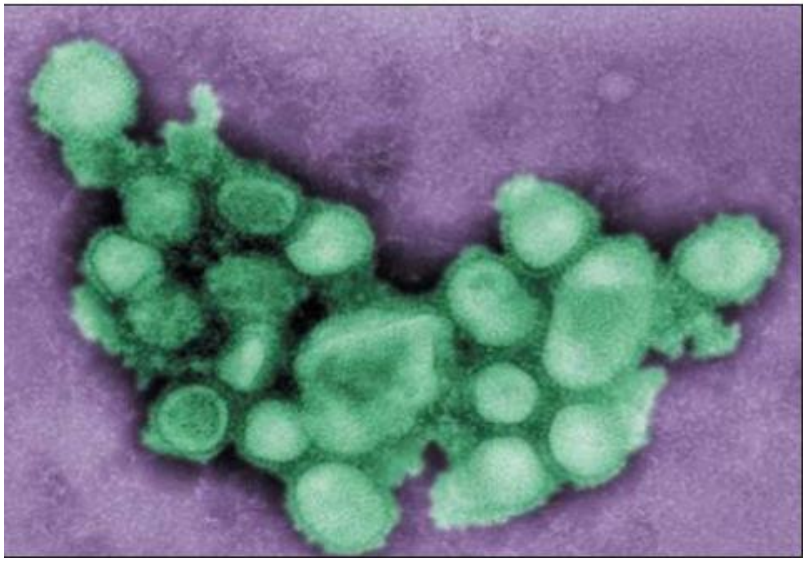
Antijenik tiplerin özellikleri

- A
  - İnsan, kuş, domuz, at
  - Büyük pandemi ve epidemilerden sorumlu
- B
  - Sadece insan
  - Küçük salgınlar yapabilir
- C
  - İnsan ve domuz

Yüzey glikoproteinlerinin *İnfluenza A* için önemi

- **Hemaglütinin**
  - 1-16 farklı antijenik özellik
  - İnsanda sadece H1,H2,H3
- **Nörominidaz**
  - 1-9 farklı antijenik özellik
  - İnsanda sadece N1 ve N2

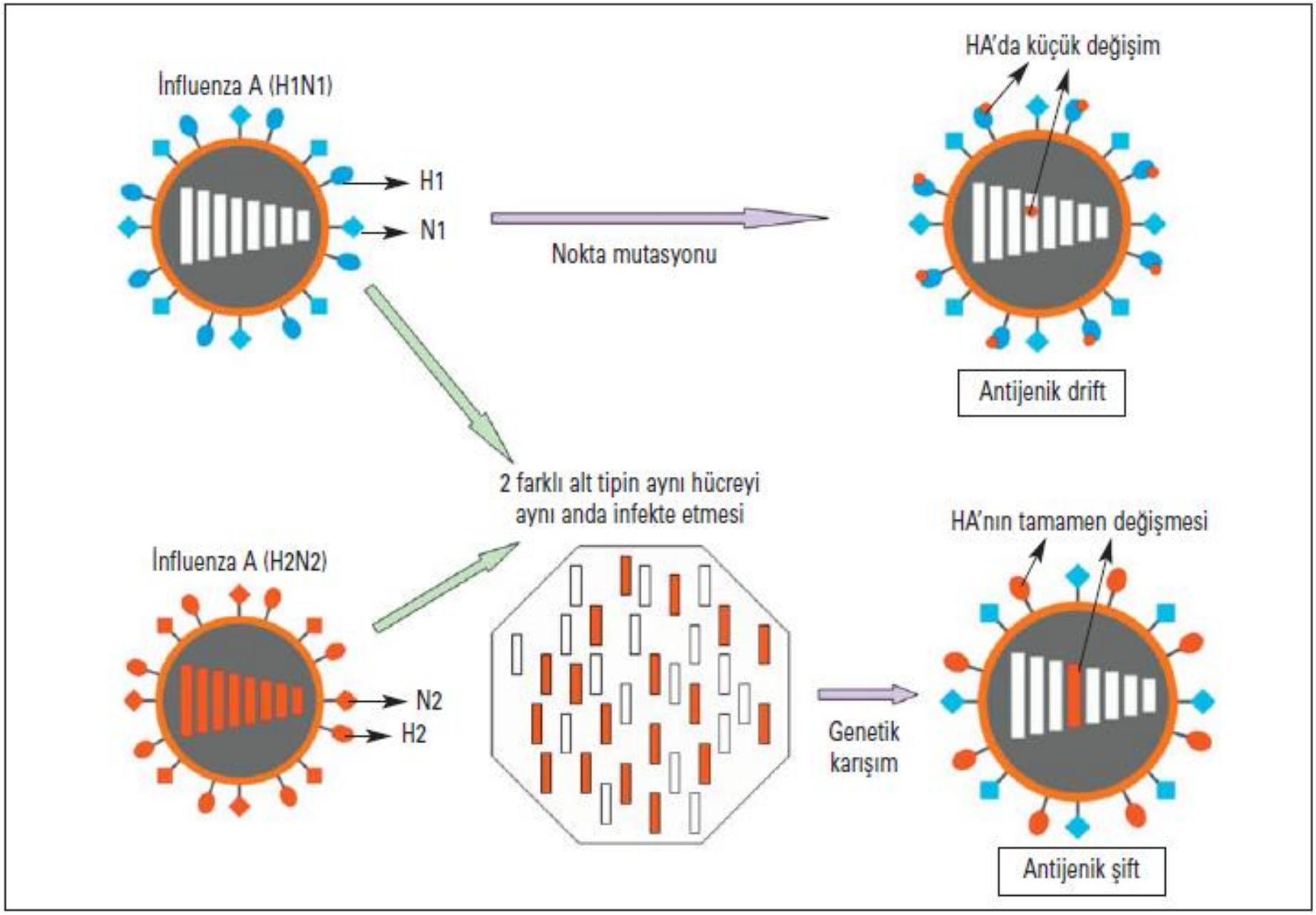




Antijenik değişimler "shift-drift"

- Büyük antijenik değişimler: "shift"
  - Yeni bir H ya da N sentezi
  - Eskisinden %20-%50 aa dizilim farklılığı
  - Pandemilerin nedeni

- Küçük antijenik değişimler: "drift"
  - Aynı alt tipte nokta mutasyonlarla oluşan küçük ag'nik farklılıklar
  - Minor epidemiler
  - Üç tip virusda da olabilir


İnfluenza A (H1N1)
H1
N1
Nokta mutasyonu
HA'da küçük değişim
Antijenik drift
2 farklı alt tipin aynı hücreyi aynı anda infekte etmesi
İnfluenza A (H2N2)
N2
H2
Genetik karışım
HA'nın tamamen değişmesi
Antijenik şift

İnfluenza Aşıları

- Bir yıl önceki alt tipler baz alınır
- İki İnfluenza A ve bir İnfluenza B suşu
- Koruyuculuk yaşla değişmekler birlikte erişkinlerde %50-%80'lerde
- Aşının koruyuculuğu için koşul: *O yılki etken virusun ag'nik yapısı ile benzerlik taşıyor olması!*

Aşı tipleri

- İnaktive aşılar
  - Trivalan ve tetravalan
  - Yüksek doz ag içerenler >65 olanlara
- Rekombinant aşılar
  - 18-49 yaş arasındaki erişkinlere
- Canlı attenüe aşılar
  - 2-49 yaş aralığında olan ve canlı aşı için kontrendikasyonu olmayanlara
  - Çocuk yaş grubunda inaktive aşılardan çok daha etkili

Aşının etkinliğini belirleyen faktörler

- Aşılanan kişinin özellikleri
  - Yaş
  - Sağlık durumu
- Aşının hazırlandığı suş ile o sezon etkin olan suş arasındaki antijenik benzerlik

- Etkinliği tam olarak belirlemek güç, çalışmalar birbirinden çok farklı.

http://www.cdc.gov/flu/about/qa/vaccineeffect.htm

Efficacy and effectiveness of influenza vaccines: a systematic review and meta-analysis

Michael T Osterholm, Nicholas S Kelley, Alfred Sommer, Edward A Belongia

Lancet Infect Dis 2012; 12: 36–44

Summary

Background No published meta-analyses have assessed efficacy and effectiveness of licensed influenza vaccines in the USA with sensitive and highly specific diagnostic tests to confirm influenza.

- Ocak 1967 - Şubat 2011
- 5707 makale taranmış; 31 çalışma seçilmiş
- TIA etkinliği 8/12 sezonu; %67
- LIAV etkinliği 9/12; %75

	Population (dates)	Patients randomly allocated to receive TIV and placebo	Vaccine efficacy (95% CI)	Reported antigenic match
Adults (18–64 years)				
Ohmit et al (2006)[24]	Healthy adults aged 18–46 years (2004–05)	728	75% (42 to 90)	Type A: drifted H3N2; type B: mixed lineage
Ohmit et al (2008)[25]	Healthy adults aged 18–48 years (2005–06)	1205	16% (−171 to 70)	Type A: drifted H3N2; type B: lineage mismatch (1 isolate)
Beran et al (2009)[26]	Healthy adults aged 18–64 years (2005–06)	6203	22% (−49 to 59)	Type A: similar H3N2 and H1N1; type B: lineage mismatch
Beran et al (2009)[27]	Healthy adults aged 18–64 years (2006–07)	7652	62% (46 to 73)	Type A: similar H3N2; type B: lineage mismatch
Monto et al (2009)[28]	Healthy adults aged 18–49 years (2007–08)	1139	68% (46 to 81)	Type A: drifted H3N2; type B: lineage mismatch
Jackson et al (2010)[21]	Healthy adults aged 18–49 years (2005–06)	3514	50%† (14 to 71)	Type A: similar H3N2; type B: lineage mismatch
Jackson et al (2010)[21]	Healthy adults aged 18–49 years (2006–07)	4144	50%† (−3 to 75)	Type A: similar H3N2; type B: mixed lineage
Frey et al (2010)[29]	Healthy adults aged 18–49 years (2007–08)	7576	63% (one-sided 97·5% lower limit of 47%)	Type A: mixed strains; type B: lineage mismatch
Madhi et al (2011)[30]	Adults aged 18–55 years with HIV infection (2008–09)	506	76% (9 to 96)	Type A: drifted H1N1; type B: not reported
Children (6–24 months)				
Hoberman et al (2003)[31]	Healthy children aged 6–24 months (1999–2000)	411	66% (34 to 82)	Type A: similar H3N2 and H1N1; type B: not reported
Hoberman et al (2003)[31]	Healthy children aged 6–24 months (2000–01)	375	−7% (−247 to 67)	Type A: similar H3N2 and H1N1; type B: lineage match

No studies were available for adults aged 65 years or older or children aged 2–17 years. *One other study by Loeb and colleagues[23] met inclusion criteria and contained data for all age groups. †Our calculation.

Table 2: **Randomised controlled trials of trivalent inactivated vaccine (TIV) meeting inclusion criteria***

	Population (dates)	Patients randomly allocated to receive LAIV and placebo	Vaccine efficacy (95% CI)	Reported antigenic match
Adults (≥60 years)				
De Villiers et al (2010)[37]	Community-dwelling ambulatory adults aged ≥60 years (2001–02)	3242	Overall 42% (21 to 57); 31% (−3 to 53) for patients aged 60–69 years; 57% (29 to 75) for patients aged ≥70 years	Type A: similar H3N2; type B: lineage match
Adults (18–49 years)				
Ohmit et al (2006)[74]	Healthy adults aged 18–46 years (2004–05)	725	48% (−7 to 74)	Type A: drifted H3N2; type B: mixed lineage
Ohmit et al (2008)[75]	Healthy adults aged 18–48 years (2005–06)	1191	8% (−194 to 67)	Type A: drifted H3N2; type B: lineage mismatch (1 isolate)
Monto et al (2009)[28]*	Healthy adults aged 18–49 years (2007–08)	1138	36% (0 to 59)	Type A: drifted H3N2; type B: lineage mismatch
Children (6 months–7 years)				
Belshe et al (1998)[32]	Healthy children aged 15–71 months (1996–97)	1602	93% (88 to 96)	Type A: similar H3N2; type B: lineage match
Belshe et al (2000)[33]	Healthy children aged 26–85 months (1997–98)	1358	87% (78 to 93)	Type A: drifted H3N2; type B: not reported (1 isolate)
Vesikari et al (2006)[34]	Healthy children aged 6–<36 months attending day care (2000–01)	1784	84% (74 to 90)	Type A: similar H3N2 and H1N1; type B: lineage match
Vesikari et al (2006)[34]	Healthy children aged 6–<36 months attending day care (2001–02)	1119	85% (78 to 90)	Type A: similar H3N2 and H1N1; type B: mixed lineage
Bracco Neto et al (2009)[38]	Healthy children aged 6–<36 months (2000–01)	1886	72% (62 to 80)	Majority of strains were similar (not reported by type)
Tam et al (2007)[35]	Healthy children aged 12–<36 months (2000–01)	3174	68% (59 to 75)	Type A: similar H3N2 and H1N1; type B: lineage match
Tam et al (2007)[35]	Healthy children aged 12–<36 months (2001–02)	2947	57% (30 to 74)	Type A: similar H3N2 and H1N1; type B: mixed lineage
Lum et al (2010)[36]	Healthy children aged 11–<24 months (2002–03)	1233	64% (40 to 79)	Type A: similar H1N1 and mixed H3N2; type B: mixed lineage

No studies were available for adults aged 50–59 years or children aged 8–17 years. *Authors reported culture, RT-PCR, and RT-PCR/culture; we report RT-PCR/culture results.

Table 3: **Randomised controlled trials of live attenuated influenza vaccine (LAIV) meeting inclusion criteria**

	Population (dates)	Participants	Vaccine effectiveness against medically attended influenza (95% CI
Eisenberg et al (2008)[39]	All patients aged 6–59 months admitted to hospital, seen in emergency department or by primary-care doctors for acute respiratory illness (2003–05)	2003–04 (927 patients); 2004–05 (1502 patients)	44% (−42 to 78); 57% (28 to 74)
Szilagyi et al (2008)[40]	All patients aged 6–59 months admitted to hospital, seen in emergency department (inpatient) or by primary-care doctors (outpatient) for acute respiratory illness (2003–05)	2003–04 (4760 inpatients); 2003–04 (696 outpatients); 2004–05 (4708 inpatients); 2004–05 (742outpatients)	12% (−120 to 60); 52% (−100 to 90); 37% (−50 to 70); 7% (−80 to 50)
Belongia et al (2009)[41]	Residents recommended for vaccination by ACIP with acute respiratory illness: <24 months, ≥65 years, or high-risk (2004–05); <24 months, ≥50 years, or high-risk (2005–06); <59 months, ≥50 years, or high risk (2006–07)	 2004–05 (818 patients); 2005–06 (356 patients); 2006–07 (932 patients)	 10% (−36 to 40); 21% (−52 to 59); 52% (22 to 70)
Skowronski et al (2009)[42]	All patients aged ≥9 years presenting with ILI to sentinel primary-care practitioners	841	47% (18 to 65)
Heinonen et al (2011)[43]	Cohort of patients aged 6–35 months presenting with ILI enrolled in a randomised controlled trial for antivirals (2007–08)	340	72% (35 to 88)
Savulescu et al (2010)[44]	All patients ≥65 years old presenting with ILI (2008–09)	103	79% (−26 to 96)
Kissling et al (2009)[45]	All patients ≥65 years old presenting with ILI (2008–09)	292	59% (15 to 80)
Kelly et al (2011)[46]	All patients aged 6–59 months presenting with ILI (2008)	289	68%* (26 to 86)
Talbot et al (2011)[47]	Adults aged >50 years admitted to hospital with respiratory symptoms or non-localising fever (2006–09)	2006–07 (168 patients); 2007–08 (68 patients); 2008–09 (181 patients)	57% (−44 to 87)†; 56% (−63 to 88)†; 73% (−15 to 94)†

*Controls tested negative for influenza but positive for other respiratory viruses. †Vaccine effectiveness against hospitalisation. ACIP=Advisory Committee on Immunization Practices. ILI=influenza-like illness.

Table 4: **Vaccine effectiveness of seasonal influenza vaccine in studies meeting inclusion criteria**

Sonuç

Interpretation Influenza vaccines can provide moderate protection against virologically confirmed influenza, but such protection is greatly reduced or absent in some seasons. Evidence for protection in adults aged 65 years or older is lacking. LAIVs consistently show highest efficacy in young children (aged 6 months to 7 years). New vaccines with improved clinical efficacy and effectiveness are needed to further reduce influenza-related morbidity and mortality.

Vaccine 31 (2013) 5339–5348

Contents lists available at ScienceDirect

Vaccine

journal homepage: www.elsevier.com/locate/vaccine

Review

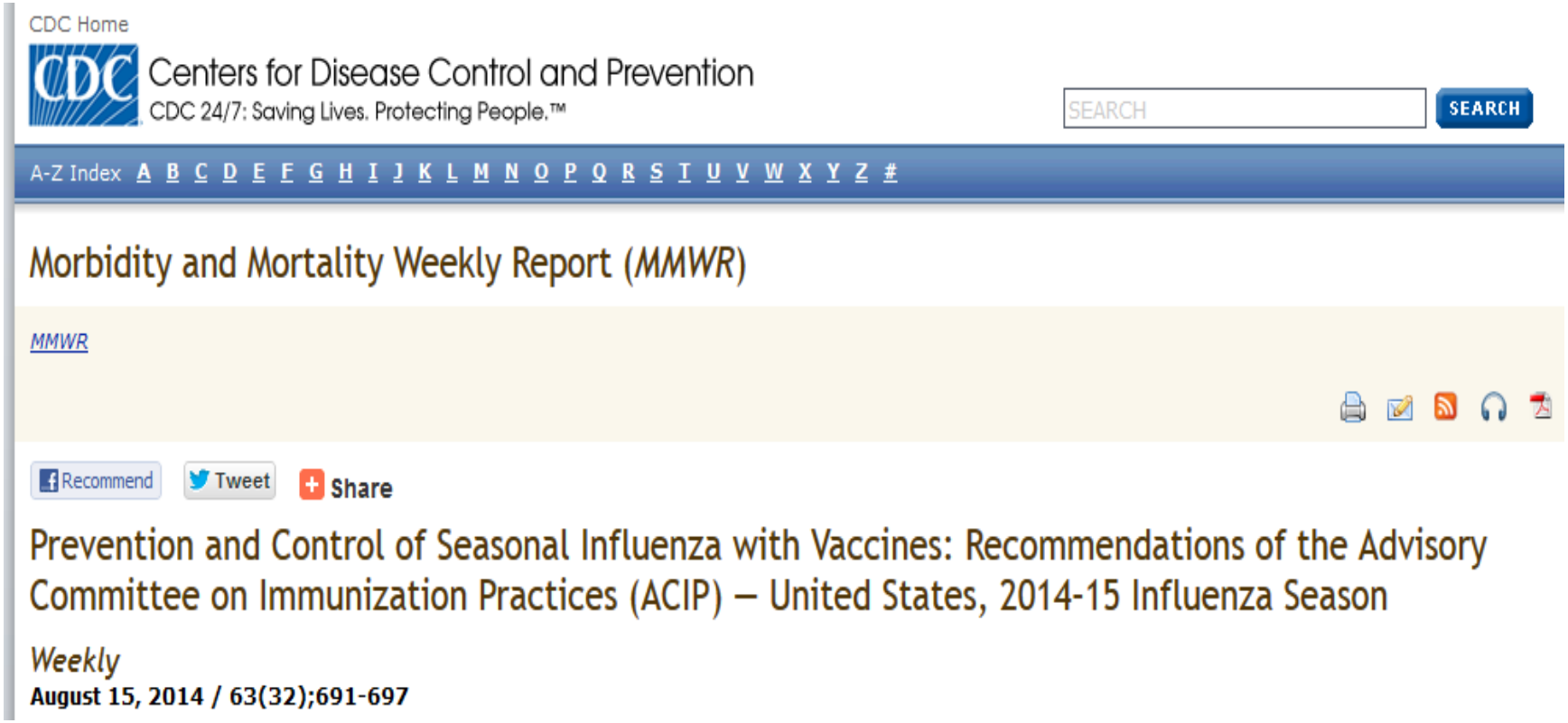
Influenza cost and cost-effectiveness studies globally – A review

Samuel K. Peasah[a,*], Eduardo Azziz-Baumgartner[a], Joseph Breese[a], Martin I. Meltzer[b], Marc-Alain Widdowson[a]

[a] NCIRD/Centers for Disease Control and Prevention, Atlanta, GA, United States
[b] NCEZID/Centers for Disease Control and Prevention, Atlanta, GA, United States

- 27 ülkeden 140 makale
- 51 maliyet etkinlik çalışmasının 22'sinde maliyet etkin; çocuk-yaşlı ve gebeleri içeren çalışmalar
- Çalışmaların yapıldığı ülkeler yüksek ve orta gelir düzeyine sahip
- Olgu başına harcanan para 30-64 dolar ise aşı maliyet-etkin.

2014- 2015 sezonu influenza aşı önerileri



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A-Z Index A B C D E F G H I J K L M N O P Q R S T U V W X Y Z #

Morbidity and Mortality Weekly Report (*MMWR*)

MMWR

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Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP) — United States, 2014-15 Influenza Season

Weekly

August 15, 2014 / 63(32);691-697

2014- 2015 sezonu influenza aşısı

- A/California/7/2009 (H1N1)-like virus
- A/Texas/50/2012 (H3N2)-like virus
- B/Massachusetts/2/2012-like (Yamagata lineage) virus.

- B/Brisbane/60/2008-like (Victoria lineage) virus

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6332a3.htm

Kimlere önerildi ?

- > 6 ay olan ve herhangi bir kontrendikasyonu olmayan herkese !

- İnfluenza aktivasyonu başlamadan önce aşılama başlatılmalı, önerilen Ekim ayı
- İnfluenza aktivasyonu sürdüğü sürece yapılabilir.

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6332a3.htm

Vaccine use

WHO/Isadore Brown

Vaccination is the most effective way to prevent infection and severe outcomes caused by influenza viruses.

Vaccination is especially important for people at higher risk of serious influenza complications, and for people who live with or care for high risk individuals.

WHO recommends seasonal influenza vaccination for:

a. Highest priority:
- Pregnant women

b. Priority (in no particular order):
- Children aged 6-59 months
- Elderly
- Individuals with specific chronic medical conditions
- Health-care workers

Early Data Suggests Potentially Severe Flu Season

CDC Urges Vaccination, Treatment

Press Release

For Immediate Release: Thursday, December 4
Contact: Media Relations
(404) 639-3286

Early data suggests that the current 2014-2015 flu season could be severe. The Centers for Disease Control and Prevention (CDC) urges immediate vaccination for anyone still unvaccinated this season and recommends prompt treatment with antiviral drugs for people at high risk of complications who develop flu.

So far this year, seasonal influenza A H3N2 viruses have been most common. There often are more severe flu illnesses, hospitalizations, and deaths during seasons when these viruses predominate. For example, H3N2 viruses were predominant during the 2012-2013, 2007-2008, and 2003-2004 seasons, the three seasons with the highest mortality levels in the past decade. All were characterized as "moderately severe."

Increasing the risk of a severe flu season is the finding that roughly half of the H3N2 viruses analyzed are drift variants: viruses with antigenic or genetic changes that make them different from that season's vaccine virus. This means the vaccine's ability to protect against those viruses may be reduced, although vaccinated people may have a milder illness if they do become infected. During the 2007-2008 flu season, the predominant H3N2 virus was a drift variant yet the vaccine had an overall efficacy of 37 percent and 42 percent against H3N2 viruses.

"It's too early to say for sure that this will be a severe flu season, but Americans should be prepared," said CDC director Tom Frieden, M.D., M.P.H. "We can save lives with a three-pronged effort to fight the flu: vaccination, prompt treatment for people at high risk of complications, and preventive health measures, such as staying home when you're sick, to reduce flu spread."

Depending on the formulation, flu vaccines protect against three or four different flu viruses. Even during a season when the vaccine is only partially protective against one flu virus, it can protect against the others.

"While the vaccine's ability to protect against drifted H3N2 viruses this season may be reduced, we are still strongly recommending vaccination," said Joseph Bresee, M.D., Chief of the Influenza Epidemiology and Prevention Branch at CDC. "Vaccination has been found to provide some protection against drifted viruses in past seasons. Also, vaccination will offer protection against other flu viruses that may become more common later in the season."

Influenza viruses are constantly changing. The drifted H3N2 viruses were first detected in late March 2014, after World Health Organization (WHO) recommendations for the 2014-2015 Northern Hemisphere vaccine had been made in mid-February. At that time, a very small number of these viruses had been found among the thousands of specimens that had been collected and tested.

A committee of experts must pick which viruses to include in the vaccine many months in advance in order for vaccine to be produced and delivered in time for the upcoming flu season. There is always the possibility that viruses will drift during that time.

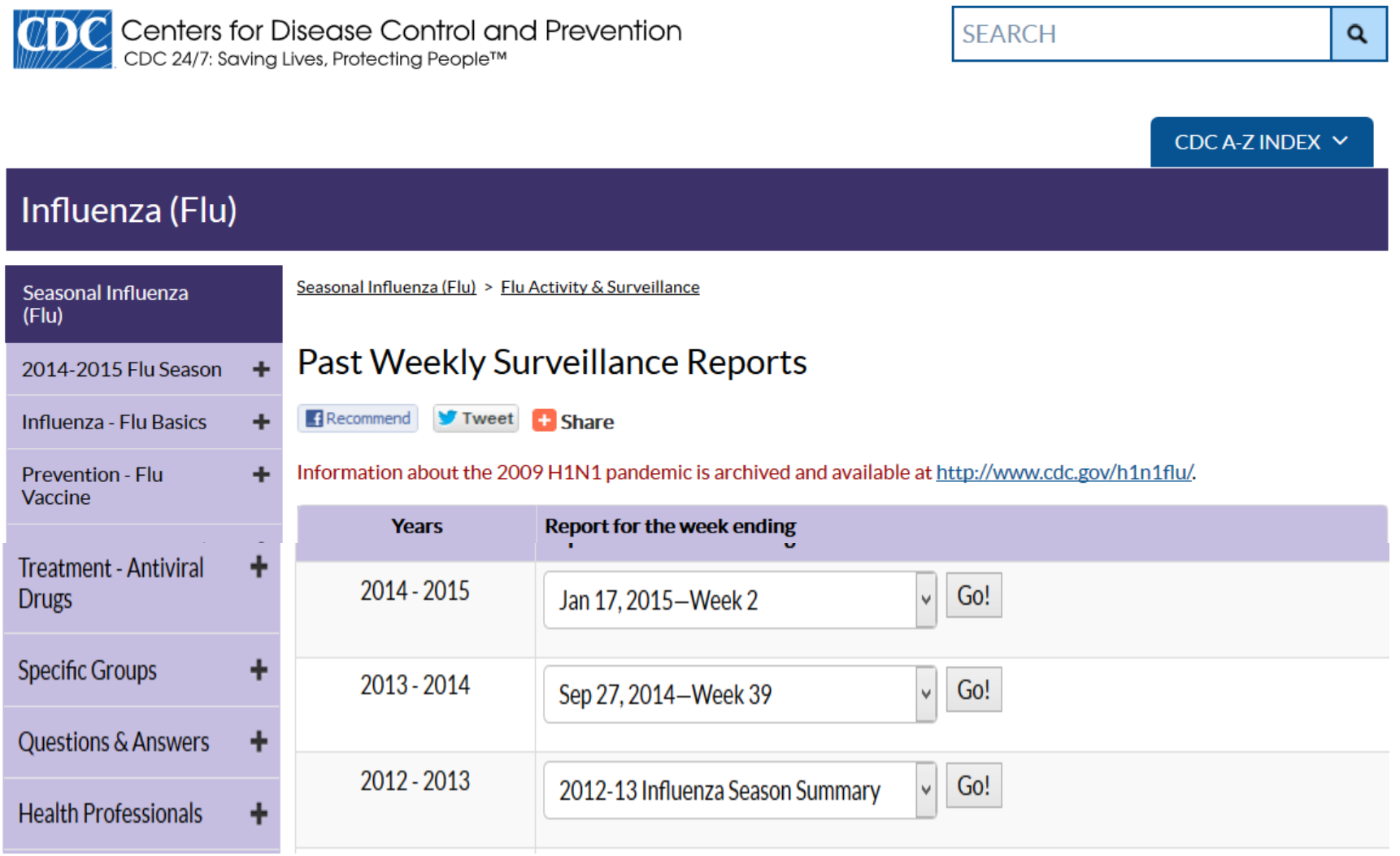
Influenza activity is currently low in the United States as a whole, but is increasing in parts of the country. "We are just at the beginning of the season. It's not too late to get your vaccine," Dr. Frieden says.

Influenza antiviral drugs – Tamiflu (oseltamivir) and Relenza (zanamivir) can reduce severe complications such as hospitalization and potentially death for people who are at high risk of serious flu complications or are very sick. Treatment of high risk patients should begin as soon after symptoms develop as possible, without waiting for lab tests to confirm flu infection.

Those at high risk from influenza include children younger than 5 years (especially those younger than 2 years); adults 65 years and older; pregnant women; and people with certain chronic health conditions such as asthma, diabetes, heart or lung disease, and kidney disease.

CDC recommends that people at high risk check with their doctor or other health care professional promptly if they get flu symptoms. Studies show that flu antiviral drugs work best for treatment when they are started in the first 48 hours after symptoms appear. Flu symptoms can include fever, cough, sore throat, runny or stuffy nose, body aches, headache, chills and fatigue.

http://www.cdc.gov/flu/weekly/pastreports.htm



Seasonal Influenza (Flu)

FLUVIEW
A Weekly Influenza Surveillance Report Prepared by the Influenza Division

2013-2014 Influenza Season Week 11 ending March 15, 2014

All data are preliminary and may change as more reports are received.

Antigenic Characterization*

CDC has antigenically characterized 1,854 influenza viruses [1,506 2009 H1N1 viruses, 225 influenza A (H3N2) viruses, and 123 influenza B viruses] collected by U.S. laboratories since October 1, 2013 by hemagglutination inhibition (HI).

2009 H1N1 [1,506]:

- 1,505 (99.9%) of 1,506 2009 H1N1 viruses tested were characterized as A/California/7/2009-like, the influenza A (H1N1) component of the 2013-2014 Northern Hemisphere influenza vaccine. One (0.1%) virus showed reduced titers with antiserum produced against A/California/7/2009.

Influenza A (H3N2) [225]:

- 224 (99.6%) of the 225 influenza A (H3N2) viruses tested have been characterized as A/Texas/50/2012-like, the influenza A (H3N2) component of the 2013-2014 Northern Hemisphere influenza vaccine. One (0.4%) virus showed reduced titers with antiserum produced against A/Texas/50/2012.

Influenza B [123]: 84 (68%) of the 123 influenza B viruses tested belong to B/Yamagata/16/88-lineage and the remaining 39 (32%) influenza B viruses tested belong to B/Victoria /02/87 lineage.

- **Yamagata Lineage [84]:** 84 influenza B/Yamagata-lineage viruses were characterized as B/ Massachusetts/2/2012-like, which is included as an influenza B component of the 2013-2014 Northern Hemisphere trivalent and quadrivalent influenza vaccines.
- **Victoria Lineage [39]:** 39 influenza B/Victoria-lineage viruses were characterized as B/Brisbane/60/2008-like, which is included as an influenza B component of the 2013-2014 Northern Hemisphere quadrivalent influenza vaccine.

*For more information see the section on antigenic characterization in the MMWR "Update: Influenza Activity — United States and Worldwide, May 19–September 28, 2013".

Geçen sezonun sonundan bu sezonun başına kadar olan sürede

FLUVIEW
A Weekly Influenza Surveillance Report Prepared by the Influenza Division

CDC

2014-2015 Influenza Season Week 40 ending October 4, 2014

Antigenic Characterization:

No antigenic characterization data is available for specimens collected after October 1, 2014.

During May 18 – September 27, 2014, CDC antigenically characterized 225 viruses collected from the United States, including six pH1N1 viruses, 93 influenza A (H3N2) viruses, and 126 influenza B viruses. All six (100%) pH1N1 viruses were antigenically similar to A/California/7/2009, the influenza A (H1N1) component of the 2014-2015 Northern Hemisphere influenza vaccine. Of the 93 influenza A (H3N2) viruses characterized, 39 (42%) were antigenically similar to A/Texas/50/2012, the influenza A (H3N2) component of the 2014-2015 Northern Hemisphere influenza vaccine.

Of the 126 influenza B viruses collected and analyzed during this period, 95 (75%) belonged to the B/Yamagata-lineage, and were antigenically similar to the B/Massachusetts/2/2012 virus, the influenza B component for the 2014–2015 Northern Hemisphere trivalent vaccine. The remaining 31 viruses (25%) belonged to the B/Victoria lineage and were antigenically similar to the B/Brisbane/60/2008 virus, the B/Victoria-lineage component of the 2014–2015 Northern Hemisphere quadrivalent influenza vaccine.

2014-2015 Influenza Season
Week 18 ending May 9 2015

Influenza Virus Characterization*:

CDC has characterized 1,950 influenza viruses [50 A(H1N1)pdm09, 1,267 A(H3N2), and 633 influenza B viruses] collected by U.S. laboratories since October 1, 2014.

Influenza A Virus [1,317]

- **A (H1N1)pdm09 [50]**: All 50 H1N1 viruses tested were characterized as A/California/7/2009-like, the influenza A (H1N1) component of the 2014-2015 Northern Hemisphere influenza vaccine.
- **A (H3N2) [1,267]**: 244 (19.3%) of the 1,267 H3N2 viruses tested have been characterized as A/Texas/50/2012-like, the influenza A (H3N2) component of the 2014-2015 Northern Hemisphere influenza vaccine. 1,023 (80.7%) of the 1,267 viruses tested showed either reduced titers with antiserum produced against A/Texas/50/2012 or belonged to a genetic group that typically shows reduced titers to A/Texas/50/2012. Among viruses that showed reduced titers with antiserum raised against A/Texas/50/2012, most were antigenically similar to A/Switzerland/9715293/2013, the H3N2 virus selected for the 2015 Southern Hemisphere influenza vaccine. A/Switzerland/9715293/2013 is related to, but antigenically and genetically distinguishable from, the A/Texas/50/2012 vaccine virus. A/Switzerland-like H3N2 viruses were first detected in the United States in

Influenza B Virus [633]

443 (70.0%) of the influenza B viruses tested belong to B/Yamagata/16/88 lineage and the remaining 190 (30.0%) influenza B viruses tested belong to B/Victoria/02/87 lineage.

- **Yamagata Lineage [443]**: 432 (97.5%) of the 443 B/Yamagata-lineage viruses were characterized as B/Massachusetts/2/2012-like, which is included as an influenza B component of the 2014-2015 Northern Hemisphere trivalent and quadrivalent influenza vaccines. Eleven (2.5%) of the B/Yamagata-lineage viruses tested showed reduced titers to B/Massachusetts/2/2012.
- **Victoria Lineage [190]**: 185 (97.4%) of the 190 B/Victoria-lineage viruses were characterized as B/Brisbane/60/2008-like, the virus that is included as an influenza B component of the 2014-2015 Northern Hemisphere quadrivalent influenza vaccine. Five (2.6%) of the B/Victoria-lineage viruses tested showed reduced titers to B/Brisbane/60/2008.

FluView

Laboratory-Confirmed Influenza Hospitalizations

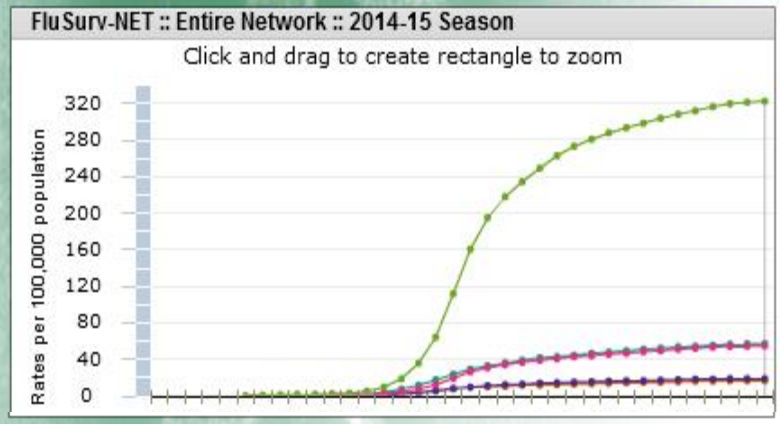
Preliminary rates as of May 09, 2015

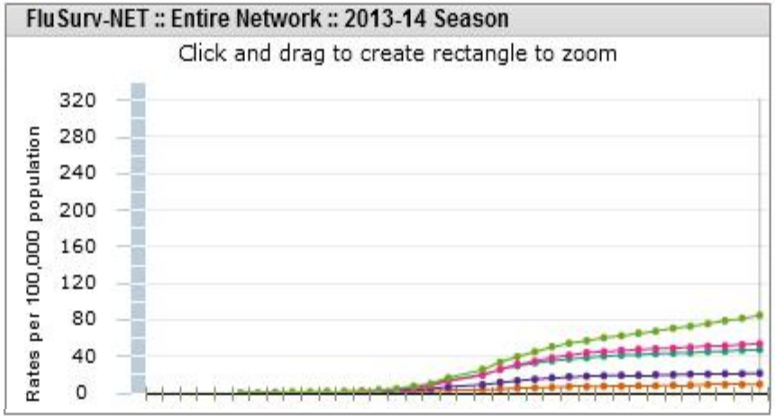
Select a Surveillance Area: FluSurv-NET

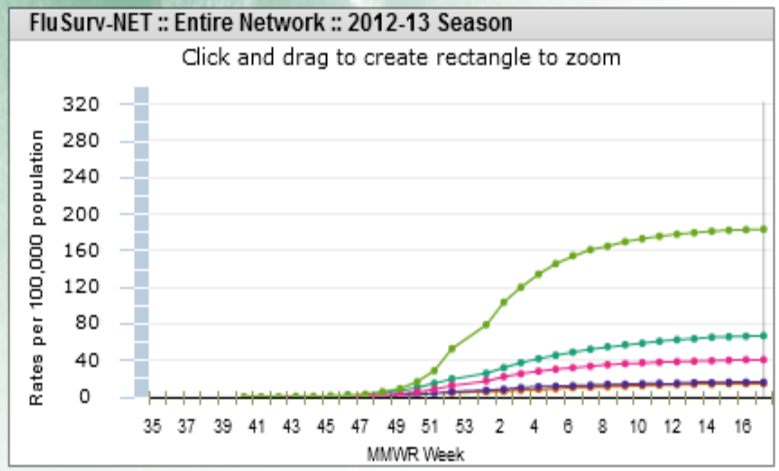
Group By: Flu Season | Age Group

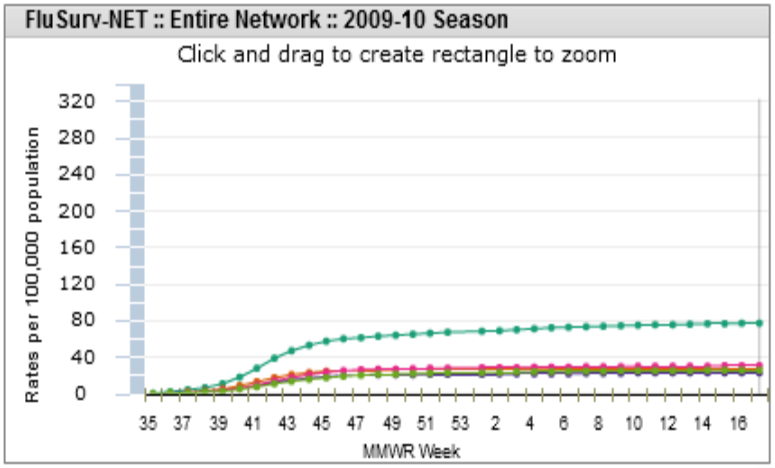
Click on button to view and compare multiple Flu Seasons. Up to 6 Seasons can be selected at a time.

2014-15 | 2013-14 | 2012-13 | 2011-12 | 2010-11 | 2009-10









(Acrobat Reader)

Help

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Download Data

Age Group

- Overall
- All Age Groups
  - 0-4 yr
  - 18-49 yr
  - 50-64 yr
  - 65+ yr

35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

September October November December January February March April

Show Data Window

MMWR Week

2015-2016 Influenza Season – U.S. Influenza Vaccine Composition:

The World Health Organization (WHO) has recommended vaccine viruses for the 2015-2016 influenza season Northern Hemisphere vaccine composition, and the Food and Drug Administration's Vaccines and Related Biological Products Advisory Committee (VRBPAC) has made the vaccine composition recommendation to be used in the United States. Both agencies recommend that trivalent vaccines contain an A/California/7/2009 (H1N1)pdm09-like virus, an A/Switzerland/9715293/2013 (H3N2)-like virus, and a B/Phuket/3073/2013-like (B/Yamagata lineage) virus. It is recommended that quadrivalent vaccines, which have two influenza B viruses, contain the viruses recommended for the trivalent vaccines, as well as a B/Brisbane/60/2008-like (B/Victoria lineage) virus. This represents a change in the influenza A (H3) and influenza B (Yamagata lineage) components compared with the composition of the 2014-2015 influenza vaccine. These vaccine recommendations were based on several factors, including global influenza virologic and epidemiologic surveillance, genetic characterization, antigenic characterization, antiviral resistance, and the candidate vaccine viruses that are available for production.

2014-2015 sezonunda influenza

- Sağlık Bakanlığı Grip Bilim Kurulu Şubat 2015 açıklamaları

- İlk görülen vakalar dünyada ve Avrupa'da Ekimde.
- Ülkemizde ilk vakalar Aralık ayında.
- Ocak-Şubat olguların arttığı aylar
- Seyir her yıl olduğu gibi
- Şüpheli örneklerde influenza pozitiflik oranı Avrupa'da %51, ülkemizde %23

- Sağlık Bakanlığı Grip Bilim Kurulu Şubat 2015 açıklamaları

- İzole edilen tipler;
  - Avrupa'da %87 İnfluenza A ve %13 İnfluenza B
  - Türkiye'de %62 İnfluenza A ve %38 İnfluenza B

  - **Yeni bir antijenik değişiklik yok, bu yıla özgü farklı bir seyir beklenmiyor!**

Aynı dönemde CDC raporu

FLUVIEW
A Weekly Influenza Surveillance Report Prepared by the Influenza Division

CDC

2014-2015 Influenza Season Week 5 ending February 7, 2015

All data are preliminary and may change as more reports are received.

Synopsis:

During week 5 (February 1-7, 2015), influenza activity decreased, but remained elevated in the United States.

Influenza Virus Characterization*:

CDC has characterized 809 influenza viruses [21 A(H1N1)pdm09, 634 A(H3N2), and 154 influenza B viruses] collected by U.S. laboratories since October 1, 2014.

Influenza A Virus [655]

- **A (H1N1)pdm09 [21]:** All 21 H1N1 viruses tested were characterized as A/California/7/2009-like, the influenza A (H1N1) component of the 2014-2015 Northern Hemisphere influenza vaccine.
- **A (H3N2) [634]:** 199 (31.4%) of the 634 H3N2 viruses tested have been characterized as A/Texas/50/2012-like, the influenza A (H3N2) component of the 2014-2015 Northern Hemisphere influenza vaccine. 435 (68.6%) of the 634 viruses tested showed either reduced titers with antiserum produced against A/Texas/50/2012 or belonged to a genetic group that typically shows reduced titers to A/Texas/50/2012. Among viruses that showed reduced titers with antiserum raised against A/Texas/50/2012, most were antigenically similar to A/Switzerland/9715293/2013, the H3N2 virus selected for the 2015 Southern Hemisphere influenza vaccine. A/Switzerland/9715293/2013 is related to, but antigenically and genetically distinguishable from, the A/Texas/50/2012 vaccine virus. A/Switzerland-like H3N2 viruses were first detected in the United States in small numbers in March of 2014 and began to increase through the spring and summer.

Influenza B Virus [154]

107 (69.5%) of the influenza B viruses tested belong to B/Yamagata/16/88 lineage and the remaining 47 (30.5%) influenza B viruses tested belong to B/Victoria/02/87 lineage.

- **Yamagata Lineage [107]:** 100 (93.4%) of the 107 B/Yamagata-lineage viruses were characterized as B/Massachusetts/2/2012-like, which is included as an influenza B component of the 2014-2015 Northern Hemisphere trivalent and quadrivalent influenza vaccines. Seven (6.6%) of the B/Yamagata-lineage viruses tested showed reduced titers to B/Massachusetts/2/2012.
- **Victoria Lineage [47]:** 43 (91.5%) of the 47 B/Victoria-lineage viruses were characterized as B/Brisbane/60/2008-like, the virus that is included as an influenza B component of the 2014-2015 Northern Hemisphere quadrivalent influenza vaccine. Four (8.5%) of the B/Victoria-lineage viruses tested showed reduced titers to B/Brisbane/60/2008.

T.C. Sağlık Bakanlığı
Türkiye Halk Sağlığı Kurumu

TÜRKİYE HALK SAĞLIĞI KURUMU - THSK
BULAŞICI HASTALIKLAR DAİRE BAŞKANLIĞI
12/03/2015 10:07 - 13588366 / 134.99 / 154
00008862296

T.C.
SAĞLIK BAKANLIĞI
Türkiye Halk Sağlığı Kurumu Başkanlığı

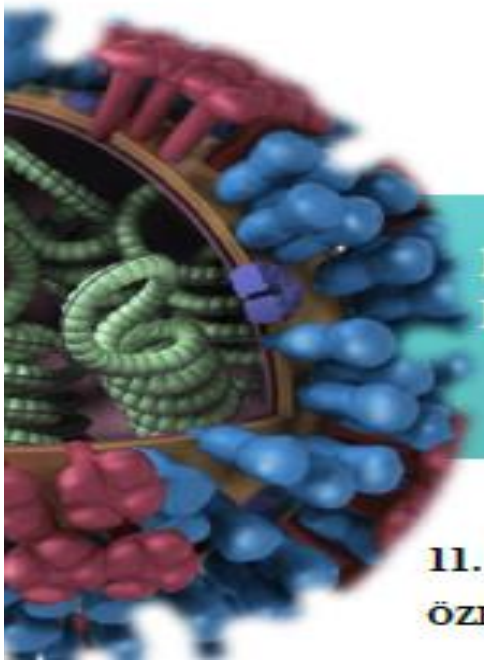
Sayı : 13588366/134.99
Konu : İnfluenza

..... VALİLİĞİNE
(Halk Sağlığı Müdürlüğü)

Ülkemizde influenza sürveyansı 2005 yılından itibaren sentinel sürveyans olarak 17 ilde belirlenmiş 180 aile hekimimiz ile birlikte yürütülmektedir. Sürveyans kapsamında gelen verilerin analizleri yapılmakta ve haftalık olarak Kurumumuz web sayfasında yayımlanmaktadır. 2014-2015 Grip sezonunda ilk pozitiflik 44. haftada tespit edilmiş olup mevsimsel artışın 4. haftadan itibaren başladığı görülmüştür. Gelen örneklerde influenza virüsü ile birlikte diğer solunum yolu virüsleri de tespit edilmektedir. İnfluenza olarak tespit edilen örneklerde influenza alt tiplerinin dağılımında % 40 İnfluenza AH1N1, % 40 İnfluenza B ve % 20 İnfluenza H3N2 olduğu saptanmıştır.

Dünya Sağlık Örgütü tarafından yayımlanan raporda da Avrupa Bölgesinde influenza sezonunda ilk pozitifliğin 44. haftada tespit edildiği, mevsimsel artışın 2. haftada başladığı ve 7. haftada pik yaptığı ve daha sonra düşüşe geçtiği belirtilmiştir. Avrupa'da influenza alt tiplerinin dağılımı incelendiğinde, Avrupa'nın büyük bölümünde ağırlıklı olarak İnfluenza AH3N2'nin dolaşımda olduğu, bunu İnfluenza B ve İnfluenza AH1N1'in takip ettiği belirtilmiştir.

2014-2015 Grip sezonunun değerlendirilmesi amacı ile 26 Şubat 2015 ve 5 Mart 2015 tarihlerinde Grip Bilimsel Danışma Kurulu toplanmış ve sentinel sürveyans kapsamında toplanan verilerin değerlendirilmesi sonrasında, sezonda görülen vaka artışının beklenen düzeylerde olduğu belirtilmiştir.Ülkemizin bilimsel verileri değerlendirildiğinde grip aşısının Eylül-Aralık ayları arasında yapılması önerilmekle birlikte, İnfluenza mevsiminin Nisan ayı sonuna kadar devam etmesi sebebiyle Mart ayının sonuna kadar aşı yapılabileceği ve aşının 6 ay koruyucu olduğu,



T.C. Sağlık Bakanlığı
Türkiye Halk Sağlığı Kurumu

Bulaşıcı Hastalıklar Daire Başkanlığı

Haftalık İnfluenza (Grip) Sürveyans Raporu

18 Mart 2015

11. Hafta (09 - 15 Mart 2015)

ÖZET

Ülkemizde sentinel grip surveyansı için seçilen iller

ADANA
ANKARA
ANTALYA
BURSA
DİYARBAKIR
EDİRNE
ERZURUM
İSTANBUL
İZMİR
KONYA
MALATYA
SAMSUN
TRABZON
VAN
KOCAELİ
MUĞLA
TEKİRDAĞ

İ.Ü. İstanbul Tıp Fakültesi Viroloji Laboratuvarına

RSHMB Viroloji Laboratuvarına

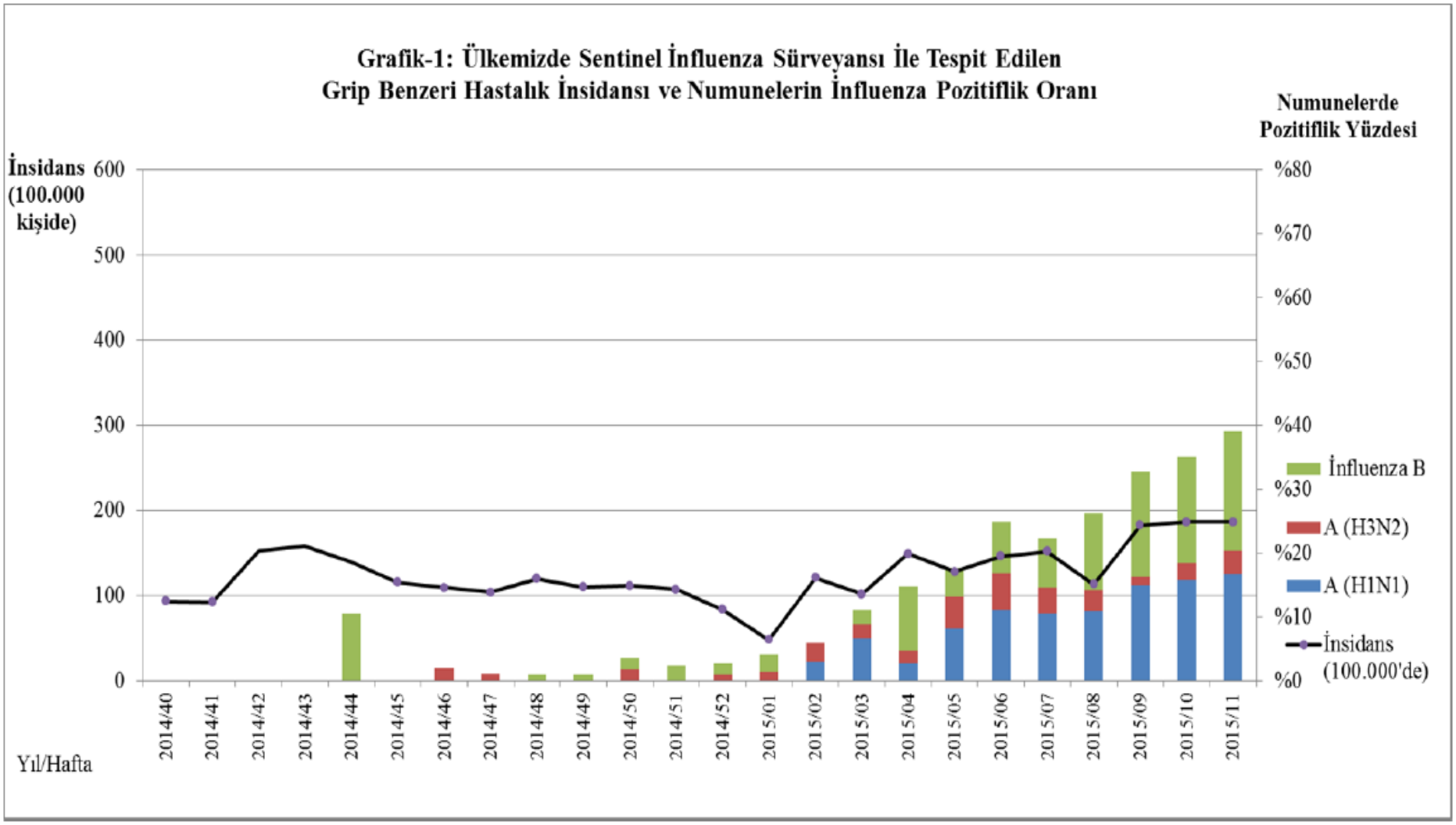
İstanbul Hıfzıssıhha Bölge Müdürlüğü Laboratuvarına

Sentinel laboratuvarlar

2014-2015 GRİP SEZONU SENTİNEL VE NON-SENTİNEL (TOPLAM) SÜRVEYANS SONUÇLARI (29 EYLÜL 2014 TARİHİNDEN İTİBAREN KÜMÜLATİF TOPLAM)

	THSK VİROLOJİ LAB.		İSTANBUL ÜNİV.		İSTANBUL HSL		TOPLAM	
	Sayı	%	Sayı	%	Sayı	%	Sayı	%
Gelen Numune Sayısı	2.819		888		612		4.319	
Çalışılan Numune	2.819		888		612		4.319	
Toplam Pozitiflik*	473	17	302	34	88	14	863	20
İnf B	219		128		45		392	
İnf A H1N1	193		140		33		366	
İnf A/H3	61		34		10		105	

Grafik-1: Ülkemizde Sentinel İnfluenza Sürveyansı İle Tespit Edilen Grip Benzeri Hastalık İnsidansı ve Numunelerin İnfluenza Pozitiflik Oranı



Viruses detected from sentinel sources

For week 18/2015, 22 of 153 (14%) of sentinel specimens tested positive for influenza virus, with detections in 14 of the 25 countries that tested specimens.

The total number of detections and the percentage positive continued to decrease (Fig. 1). While influenza A viruses had dominated from the start of the season, influenza B viruses have done so since week 11/2015 (Fig. 1), representing 86% of the reported sentinel detections in week 18/2015 (Table 1). Only three type A viruses were subtyped, one being A(H1N1)pdm09 and two A(H3N2). Of B viruses ascribed to lineage, all were B/Yamagata.

[1] Number discrepancies compared to this report are related to the constant update of the online data directly from the database.

Since week 40/2014, influenza viruses have been detected in 38% of the sentinel specimens tested: of these, 67% were positive for type A and 33% for type B (Table 1). Most of the subtyped influenza A viruses (77%) were A(H3N2). Of type B viruses subjected to lineage determination, 98% were of the B/Yamagata lineage.

Table 1. Influenza virus detections from sentinel sources by type and subtype, for week 18/2015 and cumulative for the season (weeks 40/2014–18/2015)

Virus type and subtype	Current week		Season	
	Number of detections	%	Number of detections	%
Influenza A	3	14	10 495	67
A(H1N1)pdm09	1		2 273	
A(H3N2)	2		7 561	
A not subtyped	0		644	
Influenza B	19	86	5 099	33
B(Victoria) lineage	0		30	
B(Yamagata) lineage	11		1 307	
Unknown lineage	8		3 762	
Total detections (total tested)	22 (153)	14	15 590 (41 376)	38

Türkiye Verileri

Virus detections by (sub)type

Country: Turkey Source: Sentinel Update

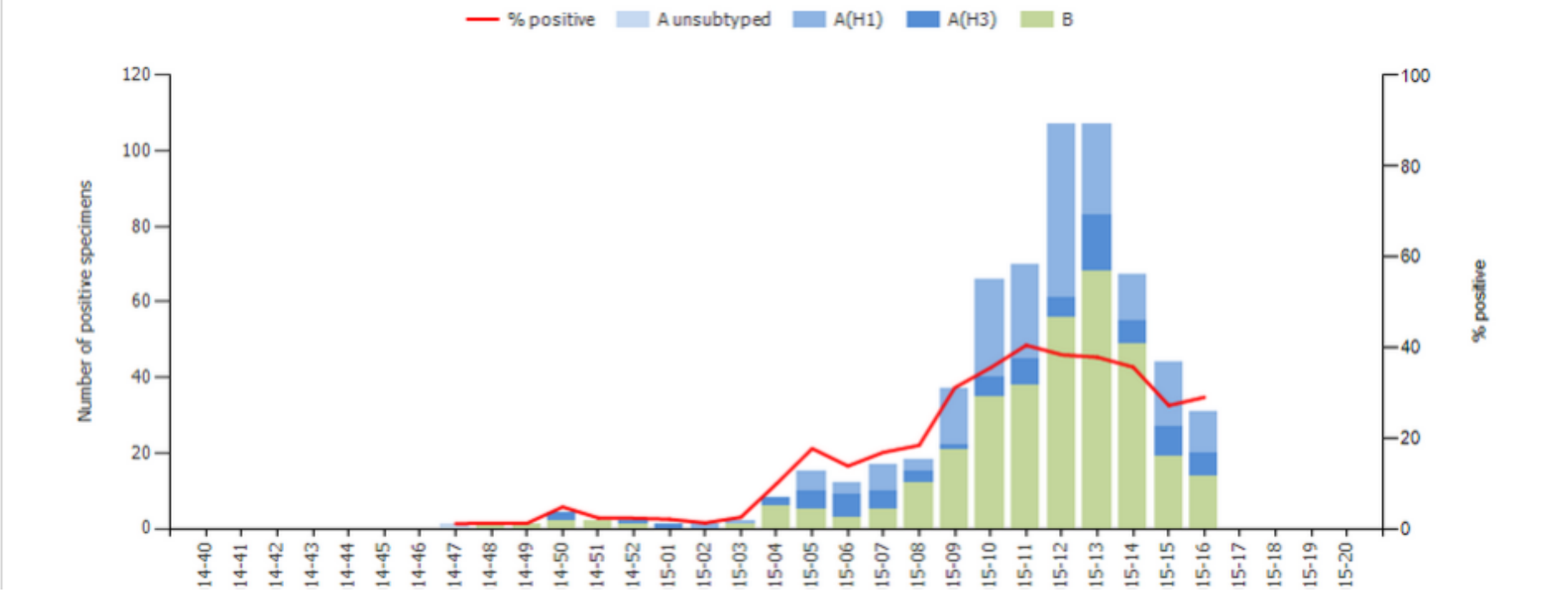


Table 3. Viruses attributed to antigenic categories, weeks 40/2014–20/2015

Antigenic group	Number of viruses
A(H1N1)pdm09 A/California/7/2009-like[1,2]	465
A(H3N2) A/Texas/50/2012-like[1]	257
A(H3N2) A/Switzerland/9715293/2013-like[2]	630
B/Massachusetts/02/2012-like (Yamagata lineage)[1]	158
B/Wisconsin/1/2010-like (Yamagata lineage)	1
B/Phuket/3073/2013-like (Yamagata lineage)[2]	628
B/Florida/4/2006 (Yamagata lineage)	6
B/Brisbane/60/2008-like (Victoria lineage)[3]	13

İnfluenza A 1352/2188 %61.8
H1N1 %43.4
drifted H3N2 % 46.6

İnfluenza B 836/2188 %38.2

aşı ile uyumlu %18.9 trivalan
%19.8 tetravalan

[1] Included in influenza vaccines for the 2014–2015 northern hemisphere influenza season.

[2] Recommended by WHO for inclusion in influenza vaccines for the 2015 southern hemisphere and 2015–2016 northern hemisphere influenza seasons.

[3] Recommended for use in quadrivalent vaccines containing both influenza type B lineages.

A/California/7/2009 (H1N1)-like virus

- H1N1-pdm Domuz gribi etkeni
- İnsan influenza A virusu olarak kabul ediliyor
- Önemli düzeyde bir antijenik değişim olmadı

- Sezonda izole edilen suşların hemen hemen tamamı aşıdaki suşla benzer antijenik özellikte. Bu nedenle aşı bu suş için etkindi.

A/Texas/50/2012 (H3N2)-like virus

- Diğerlerinden daha ciddi bir tablo yapıyor ve hospitalizasyon daha sık
- 2012-2013 ; 2007-2008 ve 2003-2004 sezonları H3N2'nin daha etkin olduğu influenza sezonları ve bu yıllar son 10 yılın influenza mortalitesinin en yüksek olduğu yıllar
- Nedeni bu suşlarda görülebilen minor değişiklikler

- Sezonda izole edilen H3N2 suşlarının çoğunda "drift" mevcuttu. Bu yüzden aşı etkin olamadı.

B/Massachusetts/2/2012-like (Yamagata lineage) virus.

- Tüm dünyada sirküle olan iki farklı genetik ve antijenik özellikle influenza B virusu var
  - Yamagata-linegae
  - Victoria-lineage

    - Tetravalan aşılarda bulunan diğer İnfluenza alt tipi Victoria-lineage grubuna ait. Bu sezonda influenza B viruslarının önemli bir kısmı bu gruba dahildi. Bu nedenle trivalan aşının etkinliği azaldı.

Bir önceki sezonda (2013-2014) aşı ne kadar etkindi?

- Predominant virus aşı virusu ile aynı antijenik özelliklere sahip İnf A H1N1 2009 !

- 7.2 milyon hastalığı önledi
- 3.1 milyon doktor vizitini önledi
- 90 000 hospitalizayonu engelledi
- Etkinlik %56-%60 olarak belirlendi

- Aşılama influenza-ilişkili hastalıkları, antibiyotik kullanımını,iş gücü kaybı, hospitalizasyonu ve ölümü engelleyebilir.

http://www.cdc.gov/flu/about/season/effectivenessqa-2013-14.htm

Yıllara göre aşının etkinliği

Table. Adjusted vaccine effectiveness estimates for influenza seasons from 2005-2015

Influenza Season†	Reference	Study Site(s)	No. of Patients‡	Adjusted Overall VE (%)	95% CI
2004-05	Belongia 2009	WI	762	10	-36, 40
2005-06	Belongia 2009	WI	346	21	-52, 59
2006-07	Belongia 2009	WI	871	52	22 ,70
2007-08	Belongia 2011	WI	1914	37	22, 49
2009-10	Griffin 2011	WI, MI, NY, TN	6757	56	23, 75
2010-11	Treanor 2011	WI, MI, NY, TN	4757	60	53, 66
2011-12	Ohmit 2014	WI, MI, PA, TX, WA	4771	47	36, 56
2012-13	McLean 2014	WI, MI, PA, TX, WA	6452	49	43, 55
2013-14	Unpublished	WI, MI, PA, TX, WA	5990	51	43, 58
2014-15	ACIP presentation, Flannery	WI, MI, PA, TX, WA	4913	19	7, 29

http://www.cdc.gov/flu/professionals/vaccination/effectiveness-studies.htm

CDC Presents Updated Estimates of Flu Vaccine Effectiveness for the 2014-2015 Season

Flu vaccine did not protect against drifted H3N2 viruses, but protected against vaccine-like H3N2 and B viruses

On February 26, 2015, updated interim influenza (flu) vaccine effectiveness (VE) estimates for the current 2014-2015 season were presented to the Advisory Committee on Immunization Practices (ACIP). The updated VE estimate against influenza A H3N2 viruses was 18% (95% confidence interval (CI): 6%-29%).This result is similar to the VE point estimate of 23%, which was reported in a January 16 Morbidity and Mortality Weekly Report (MMWR) and confirms reduced protection against H3N2 viruses this season. The VE estimate against influenza B viruses this season was 45% (95% CI: 14% – 65%).

How well the flu vaccine works can vary depending on a number of factors, including the similarity between circulating influenza viruses and vaccine viruses, and the age, health or immune status of the person vaccinated. The findings for VE against H3N2 viruses this season are about one-third of the VE expected when the flu vaccine is well matched to circulating influenza viruses. The VE against influenza B viruses this season is similar to the effectiveness observed when vaccine viruses and most circulating viruses are well matched.

Reduced protection against H3N2 viruses this season has been attributed to the fact that more than two-thirds of circulating H3N2 viruses analyzed at CDC are drifted from the H3N2 vaccine virus recommended for vaccine production. The proportion of drifted viruses at the U.S. VE study sites was even higher (>80%).

These updated estimates were derived from data collected from the U.S. Flu VE Network from November 10, 2014, through January 30, 2015, and include an additional four weeks of data in comparison to CDC's early VE estimates released in mid-January.

When VE against all influenza viruses was combined, the overall VE estimate was 19% (95% CI: 7%– 29%). In practical terms, this means the flu vaccine reduced a person's risk of having to seek medical care at a doctor's office for flu illness by 19%.

None of the VE estimates by age for this season are statistically significant at this time. Possible explanations for this include: the flu vaccine is having a small effect or there are insufficient samples sizes at this point to produce estimates by age group. Final estimates will be published at the conclusion of the season. It is possible that estimates will change as the season progresses. Influenza activity is declining but remains elevated in the United States and an increasing proportion of influenza B viruses has been detected in recent weeks.

Flu News Europe

Joint ECDC–WHO/Europe weekly influenza update

Week 20/2015 (11–17 May 2015)

- The 2014–2015 influenza season has ended.
- All countries reported low intensity of influenza activity with only a few sporadic influenza virus detections across the WHO European Region, which indicates a return to baseline levels.
- The 2014–15 season lasted 21 weeks (weeks 51/2014–19/2015) with peak of activity in week 07/2015.
- During the season, influenza A(H1N1)pdm09, A(H3N2) and type B viruses circulated in the Region. Influenza A viruses accounted for 67% of sentinel detections overall, but B viruses dominated the last nine weeks.
- Excess all-cause mortality among people aged 65 years and above, concomitant with increased influenza activity and the predominance of A(H3N2) viruses, was observed in most countries participating in the European monitoring excess mortality for public health action (EuroMOMO) project, but this abated (see the EuroMOMO website).
- Antigenic drift in a proportion of A(H3N2) viruses was observed in the 2014–2015 influenza season, so the northern-hemisphere vaccine did not provide broad protection against A(H3N2) viruses. Despite some antigenic drift among B/Yamagata viruses, the A(H1N1)pdm09 and B/Yamagata components in the vaccine were likely to protect against circulating viruses.
- Of all the influenza viruses screened for reduced susceptibility to neuraminidase inhibitors, only four A(H3N2) and two A(H1N1)pdm09 viruses showed genetic or phenotypic evidence of reduced susceptibility.

SORUNUN CEVABI

- İNFLUENZA AŞISI İŞE YARAMADI MI?

- NE YAZIK Kİ YARAMADI GİBİ DURUYOR!


AFYON KOCATEPE ÜNİVERSİTESİ
1992
TEŞEKKÜR EDERİM….