Results of the influenza surveillance of the Robert Koch Institute (RKI) are primarily based on the data of the national sentinel system of the »Working Group Influenza« (»Arbeitsgemeinschaft Influenza«) with reports of primary care physicians about patients with acute respiratory illnesses and results of laboratory tests of respiratory samples taken from patients with influenza-like illness. The virological results are supplemented by data from state laboratories of Baden-Wuerttemberg, Bavaria, Mecklenburg-Western Pomerania, Saxonia, Saxony-Anhalt and Thuringia. The mandatory reports of laboratory confirmed influenza submitted by county health departments via state health departments to RKI were analysed as well as results from the internet based »GrippeWeb« surveillance of syndromic reporting from the general population about the individual occurrence of acute respiratory illnesses.

Among samples of the sentinel the first case was laboratory confirmed in calendar week (CW) 41/2015. Laboratory confirmed influenza was detected since CW 46 continuously and the proportion of positive samples (positivity rate) increased substantially in CW 2/2016. The positivity rate is used to determine the beginning and the end of the influenza season in Germany. The activity of acute respiratory diseases in the sentinel practices had surpassed the threshold of the background activity in CW 1/2016 and reached its highest level between CW 7 and 11/2016. However, these values were much lower than observed in the 2014/15 and 2012/13 peak weeks.

The number of estimated consultations during the influenza epidemic in excess of the expected without influenza (influenza-associated consultations) was 4 100 000 (95 % confidence interval (CI) 3 500 000 – 4 500 000). The estimated number of influenza-associated sick certificates (or certified need for care of patients, e.g. children, who do not need a sick certificate for leave of absence) was 2 200 000 (95 % CI 1 900 000 – 2 500 000) and the estimated number of influenza-associated hospitalizations was 16 000 (95 % CI 13 000 – 19 000). The estimates for all three indicators were below the estimates for the severe seasons 2012/13 and 2014/15 but higher than in the mild 2013/14 season. Compared to the season 2014/15, less cases of severe disease were observed in the oldest age group (≥ 60 years).

At the beginning of the epidemic circulating influenza A(H1N1)pdm09 viruses dominated with younger age groups also affected by severe disease. The atypical spatial distribution of the influenza activity with increasing levels from east to west was a second characteristic of the 2015/16 season.

Influenza B was identified by the National Reference Center for Influenza (NIC) in 55 % of all influenza positive respiratory samples, followed by Influenza A(H1N1)pdm09 with 43 %. Influenza A(H3N2) viruses circulated with 2 % sporadically only.

During the 2015/16 season, most A(H1N1)pdm09 viruses that were characterized were antigenically similar to the vaccine virus A/California/7/2009. However, 96 % of the characterized influenza B viruses belonged to the Victoria lineage. That B-lineage was not included in the trivalent influenza vaccine this season. Of all influenza viruses tested by the NIC none showed reduced sensitivity to oseltamivir and zanamivir.

Chapters on other surveillance systems or specific topics provide additional information. Results from the internet platform GrippeWeb exhibit good correlation between medically attended acute respiratory infection (MAARI) numbers from GrippeWeb and the Arbeitsgemeinschaft Influenza supporting the accuracy of the estimates in both systems. In the pilot study GrippeWeb Plus swabs were obtained via self-administered sampling from a subgroup of participants. Respiratory viruses were identified in 72 % of samples from symptomatic persons.

Data from a new syndromic sentinel hospital system (»ICOSARI«) using case-based, ICD-10-coded information present the analysis of severe acute respiratory infections in inpatients by age group in three recent seasons.
The increasing public attention of the results of the German influenza surveillance is discussed based on statistics of the page views of the webpage of the Arbeitsgemeinschaft Influenza.

In the vaccine chapter the effectiveness of the influenza vaccine is reported based on data from the virological sentinel surveillance.

For the influenza season 2015/16 the World Health Organization (WHO) has changed its recommendation for two components of the trivalent vaccine (A(H3N2) and B):

- an A/California/7/2009 (H1N1)pdm09-like virus (unchanged);
- an A/Hong Kong/4801/2014 (H3N2)-like virus (new); and
- a B/Brisbane/60/2008-like virus (Victoria lineage, new).

It is recommended that quadrivalent vaccines contain the above three viruses and a B/Phuket/3073/2013-like virus, which represents the B/Yamagata lineage viruses.

This report cites also the recommendations from the German Standing Committee on Vaccination (STIKO). Additionally results of a phone survey are presented. The aim of the survey was to estimate the proportion of parents who are willing to have their children vaccinated against influenza if a general vaccination recommendation for children would be implemented in Germany in the future.

Lastly, in a chapter on zoonotic influenza the present situation on avian and porcine influenza in animals and humans as well as the legal basis for notification of zoonotic influenza cases is described.