



Bundeswehr Influenza-Survey

Development and Results of the German Airway Infections Surveillance Program

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Which Mission-Relevant Problem Does the Survey Address?

Acute airway infections (AAI) - and especially influenza – are highly contagious and may potentially cause large numbers of impaired troops and, in some cases, even severe illness. This may result in a huge impact on forces' operational readiness and may impair military health systems. Consequently AAI surveillance is crucial in order to timely monitor its impact and take actions for containment.

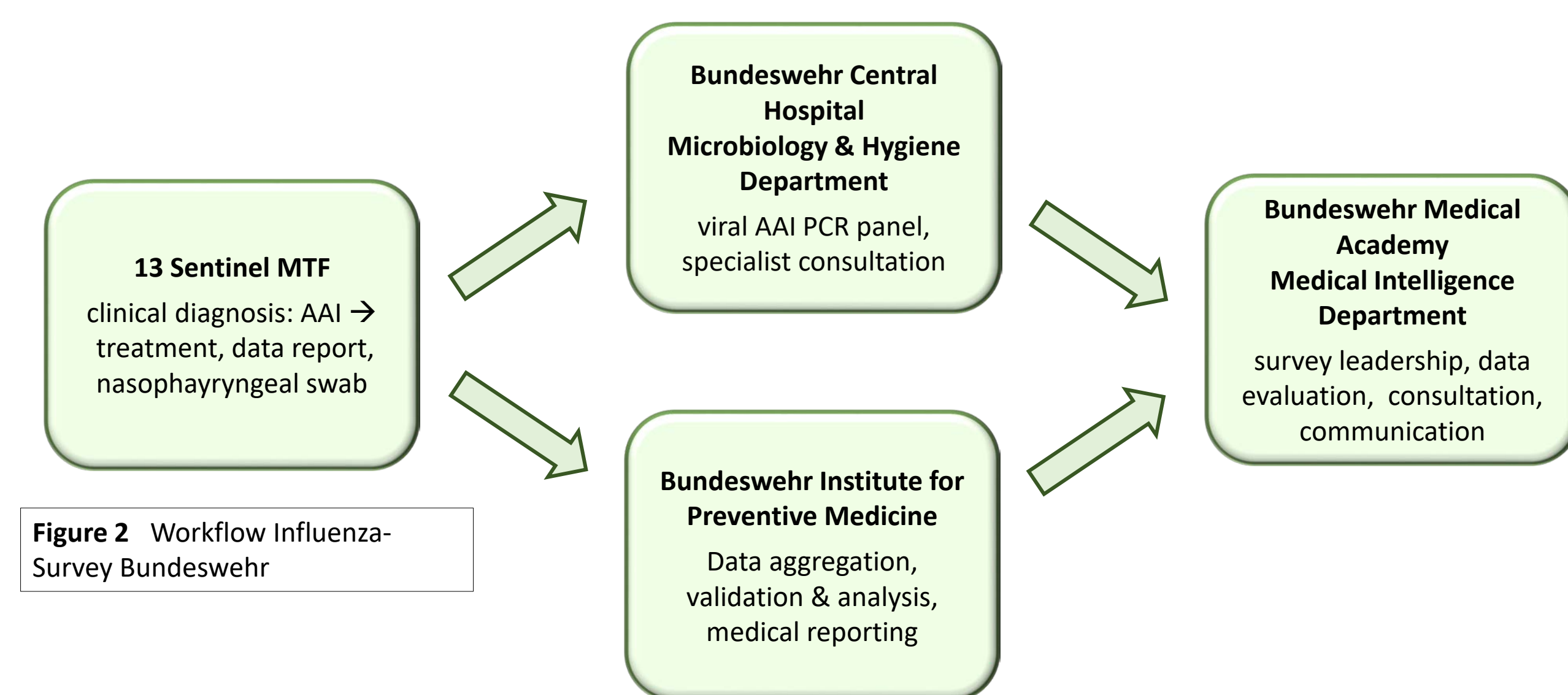


Figure 2 Workflow Influenza-Survey Bundeswehr

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How Did the Bundeswehr Influenza-Survey Develop and How Does It Work?

The surveillance started in 2018 as a simple and old-fashioned data reporting process by sentinel military outpatient medical treatment facilities (MTF) with retrograde analysis at the end of a season. Timely evaluation and decision making was not possible. Reporting and testing discipline was low. Neither process validation, nor standardized diagnostics or timely data analysis, evaluation or communication existed.

In 2022, the Influenza-Survey's methodology has been extensively advanced according to the principles of the German National Reference Center (Robert Koch-Institute; RKI) including standardized diagnosis by physicians, direct digital data transfer with instant validity checks, sentinel training, improved sentinel communication, single center virological laboratory tests and on time data analysis as well as communication (Figure 1+2, Table 1). This process leads to quality indicators that are comparable to those of the RKI (Table 2). The surveillance is continuously developing; the next planned advance is the implementation of whole genome influenza sequencing. An influenza vaccination surveillance is also included.

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What Are the Results?

The evaluation of previous surveillance results from 2018 to 2021 revealed AAI frequencies with inexplicable variations between but also within sentinel MTFs. Additionally, regularly missing data and suspiciously low influenza infection rates indicated poor data quality.

After implementing the improved protocol in 2022, reported AAI frequencies showed an increase and stabilization of AAI incidences across the seasons, similar seasonal patterns in all sentinel MTF without missing data and a highly representative number of viral swab tests (Table 2, Figure 3). Since then, the results of the PCR panel were continuously in line with the civil population with one main difference: military influenza positivity rates were always significantly lower (DOI: 10.1093/milmed/usaf466; use QR code, Figure 3).



Figure 3 AAI frequencies (bottom) and comparison of weekly influenza positivity rates between civilian (RKI) and military surveillance datasets (upper graph) in the 2025/2026 season as shown in the Medical Academy's „Influenza-Survey Dashboard“

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What Are Our Recommendations for Military Health Systems?

In order to protect military forces' health and maintain operational readiness, it is mandatory to trace airway infections, especially influenza. This can be achieved even with restricted resources by a well-planned surveillance system. Key factors for valid data and on-time availability are: trained and accountable personnel, evidence based and easy-to-use case definitions, a digital direct reporting system, continuous evaluation of incoming data, certified laboratory testing on highest possible quality level, prompt analysis, evaluation and communication. In case you want to compare your data to that of the civilian population, make sure you use similar or identical definitions, indicators and laboratory standards. Our results reflect the impact of the surrounding population's infection status on the military personnel and highlight the importance of a consequent influenza vaccination policy (see publication via QR code) at the same time.

Virological PCR Panel

Human Adenovirus

Human Metapneumovirus

Human Rhinovirus

Influenza A- + B-Viruses

Human Parainfluenza Virus

Human Respiratory Syncytial Virus

SARS-CoV-2

Table 1 AAI-causing viruses included in the PCR panel in the 2025/2026 season



Figure 1 Allocation of sentinel MTF's throughout Germany in the 2025/2026 season

	Bundeswehr Influenza-Survey	RKI Influenza Surveillance
Test rate per 10,000 population	201.4	0.7
Virus Positivity Rate [except influenza +hCoV]	37.3%	37.2%
Observed proportion of total population	10.5%	ca. 1%

Table 2 Quality indicators of the Bundeswehr Influenza-Survey and the Robert Koch-Institute in the 2023/2024 season

Wenzel J, Leibinger A, Dürrwald R et al., Monitoring Influenza in a Military Setting in Germany: Its Relevance in the 2023/2024 Season and Comparison the Civil Population, *Military Medicine*, Vol 191, Issue 3-4, 26 Sept 2025, Pages e798-2808, DOI: 10.1093/milmed/usaf466

