



# MONI

## Identification, Monitoring, and Reporting of Healthcare-Associated Infections

MONI (Monitoring of Nosocomial Infections) is an intelligent tool for detection and surveillance of healthcare-associated infections (HAIs) in intensive care medicine. It is linked with the medical documentation systems of a healthcare institution and automatically imports electronic clinical and laboratory raw data to process it into surveillance information. MONI thereby allows to identify and monitor healthcare-associated infections without the need for extra data entry by medical or surveillance staff. Due to the integration of fuzzy concepts, MONI also captures those incipient or borderline cases that are normally at a risk of not being recognized. View MONI's output either in the surveillance cockpit or export it as user-defined reports in different formats. The content of these reports is adjustable to fit various objectives. Automated sending of mandatory HAI reports to requesting institutions is also possible. As a result, MONI truly brings added value to those who work in ICUs, hospital hygiene departments, for all internal and external benchmarking and quality management purposes, and for legal, mandatory, or voluntary reporting.

### MULTIPLE PURPOSES



**INTENSIVE CARE UNITS** *Be aware of every healthcare-associated infection early on. Observe HAI severity and trends for every patient in the MONI cockpit view at your desk or bedside.*



**HOSPITAL HYGIENE** *Have the complete overview on all ICUs. Monitor trends and developments. Create reports based on your selected criteria.*



**QUALITY MANAGEMENT** *Identify, document, and count every healthcare-associated infection that occurs in your ICUs with minimal personnel expenditure.*



**BENCHMARKING** *Get a clear picture on your hospital's healthcare-associated infection occurrence. Use MONI to create HAI reports for all the different networks and agencies.*



**RESEARCH** *MONI is a great resource for clinical HAI studies. Use it to compare historical infection rates and criteria to today's, analyze differences between institutions, and identify best practice.*



**PATIENT SAFETY** *By using MONI for HAI detection and for inter-hospital comparison of HAI rates and countermeasures, important steps are taken to prevent these often lethal infections.*

## FEATURES

Get the relevant information for the patient in front of you, your ward, or the entire hospital. Monitor today's HAIs, see last week's or last month's infections, or create a quarterly HAI report. The time period to be displayed is freely adjustable. Customize the user-defined reports and save, reuse, or adjust them to your liking. Export the surveillance results in different formats and create statistical charts or diagrams. MONI is available in English and German, but can be offered in other languages upon request.

MONI's knowledge components are written in Arden Syntax, an established medical knowledge representation and processing language that is an up-to-date HL7 International industry standard and approved by the American National Standards Institute (ANSI). It has been developed for clinical contexts and is thus specifically tailored to meet the requirements needed to support doctors and medical staff in their daily work.

# MONI

COMPREHENSIVE SURVEILLANCE TOOL FOR HEALTHCARE-ASSOCIATED INFECTIONS

### Patients in ICUs

In your comprehensive patient and department list, patients with HAIs are color-coded according to infection severity. With just one click, the patient's hospital stay is displayed with detailed daily information originating from the intensive care information system and processed and interpreted by MONI.

### Daily Infections

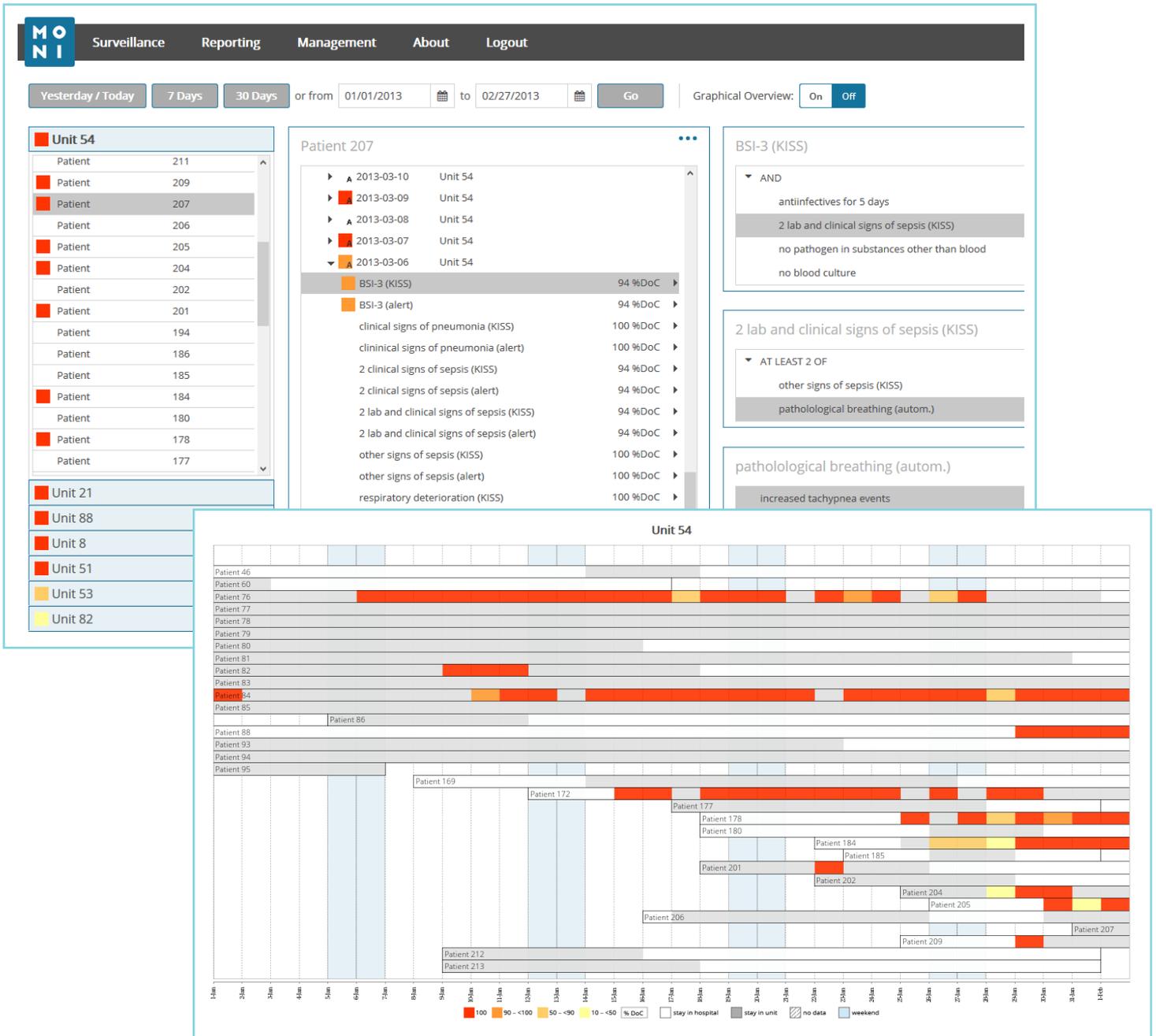
In this list of patient days, daily updates on each patient's laboratory results, clinical symptoms, interventions, medication, and more can be found. HAI occurrence is color-labeled prominently and includes the degree of compatibility (as percentage) with the underlying HAI definition.

### Detailed Explanation

For every piece of information, a detailed explanation can be accessed by clicking on the item. In several layers, every calculated and/or displayed parameter can be traced back and understood, the bottom layer often being laboratory test results or monitored vital signs. This reasoning system provides full transparency about the indicated HAIs.

### Graphical Display

Get a graphical overview for each ward including all the patients in your selected time period. The chart shows all patients days and highlights days with HAIs. Click on any patient day in this chart to obtain the corresponding information. Show or hide this element as you wish.



**MONI Surveillance Cockpit with Units, Patients, and Infections. Graphical Overview for one Unit.**

## FUZZY LOGIC

One of MONI's most powerful features is the use of fuzzy logic. Due to the integration of fuzzy concepts, incipient as well as borderline cases of healthcare-associated infections are included. The severity of the infection is modeled by displaying the degree of compatibility (DoC) with the relevant HAI criterion as a percentage (e.g., 70% DoC) and assigning a color, intensifying with increasing severity (steps increasing from 10 to 100% DoC; from yellow to dark orange). Identifying incipient and borderline cases in particular is of utmost importance. Compared to unambiguous HAI cases, these patients are at a higher risk as they may not get timely treatment, resulting in severe consequences.

## DETAILS

MONI receives the administrative and relevant clinical data from the ICUs intensive care information system and the microbiological data from the microbiology department's laboratory information system. Data transfer is flexible: daily or in smaller time periods, as batch transfer or via communication server. MONI's user interface can be accessed via any browser or integrated in the intensive care information system.

MONI can work with pathogen thesauri provided by the microbiology department or supports mapping services for building new ones. The MONI knowledge bases were carefully built by infection control and clinical experts. Two different knowledge bases are available: for ICUs with adult patients and for NICUs with neonatal patients.

## BENCHMARKING

Following the specific interests of our users (i.e., infection control personnel, clinicians, study personnel), MONI can be applied for exchanging benchmarking data with the German NEO-KISS network (German National Center for Nosocomial Infections), the international Vermont-Oxford Network, the ECDC-affiliated Austrian Surveillance Network (ANISS Surveillance), the German counterpart KISS (German National Center for Nosocomial Infections), and the Austrian branch (AUQIP) of the United-States-based International Quality Indicator Project (IQIP).

## KEY BENEFITS

- FULLY AUTOMATED
- NO MANUAL DATA INPUT
- WITH BORDERLINE CASES
- FULL TRANSPARENCY
- QM AND BENCHMARKING
- MANDATORY HAI REPORTS
- SAVES TIME AND COSTS

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