



A Powerful Tool for Helping Hospitals Reduce Patient Infections

Infection Prevention Advisor is a highly-specialized expert system. It uses data available from microbiological and clinical laboratories, patient care records, and hospital procedure records. This data is combined with the expertise of microbiology, hygiene, and infection specialists. The application is not only able to provide a detailed historical perspective right down to the individual patient level, it is also able to predict and alert for potential infection occurrences.

Preventing and controlling patient infection is a key concern in any hospital. Hospitals use a strict set of operational rules and procedures to minimize the risk of infection and maximize patient care. In parallel, hospitals and their supporting laboratories routinely record and store masses of detailed data.

This data is an extremely valuable resource that has largely gone unused for two main reasons:

1. Integrating and aligning the various complex data sources is technically difficult.
2. Codifying the expertise of health professionals into logic rules is complex and challenging.

These issues have been resolved by Infection Prevention Advisor. It is powered by Dimensional Insight's proven business intelligence (BI) technology, Diver Platform. Diver enables the application to handle literally any data source. What's more, a team of participating microbiology and hospital infection experts have worked together with data specialists to develop 'infection intelligence rules' that are easily encoded by Diver. And finally, Infection Prevention Advisor's infection intelligence engine is at the core of a logical flow from raw data to actionable reports.

Infection Prevention Advisor Benefits:

1. Mandatory reporting on infections and prevention efforts will be faster and easier since most of the required information is in the Infection Prevention Advisor system. The system can be configured to meet specific reporting needs. Faster, easier reporting lessens administrative burden and frees up often highly skilled personnel for more valuable patient care activities.
2. Monitoring and benchmarking the quality of patient care across many dimensions—type of procedure, operating room, specific department, physician—is possible since infection rates can be determined for all relevant dimensions. This allows both medical staff and hospital management to better focus performance improvement efforts.
3. The tool will assist the containment and traceability of infection outbreaks by providing detailed information on patient infection characteristics, movements, and personnel contacts. The information is refreshed daily providing the containment team with up-to-date information without lengthy manual investigative work. Again, this frees up time for more direct containment activities.
4. Based on the volume of historical data and the expert rules, Infection Prevention Advisor will be able to assign risk factors to departments, procedures, and even individual patients in relation to other departments or procedures. This will assist medical staff in prioritizing care resources as well as helping hospital management to define areas for specific attention.

Preventing infection requires an integrated, multi-disciplinary approach. Infection Prevention Advisor embraces this by feeding off a broad set of data sources:

- **Pathological Laboratory LIMS Systems**—patient sample analysis details covering aspects such as sample type, microorganisms identified, level of infection, and antibiotic resistance
- **Clinical Chemical Laboratory Data**—patient white blood cell counts and CRP
- **Scan (MRI, X-ray) Data Per Patient**—who, what, and when
- **Apothecary Data Per Patient**—who, what, and when
- **Medical Procedure Data**—procedure type, dates, location, associated medical staff, actions performed
- **Patient Handling Data**—bed occupation, procedures, nursing staff, admittance, and discharge

All this data is combined and integrated at the patient level to provide a comprehensive data foundation for applying 'infection intelligence rules'. At the simplest level these involve identifying a specific procedure as the probable cause of a specific recorded patient infection based on the associated dates, procedure type, and sample type. More complex rules define and predict infection risk factors based on a broader set of inputs and weighting parameters.

Since the data used is for all patients, not just those infected, Infection Prevention Advisor utilizes both numerators and denominators. This allows percentage metrics to be calculated for all kinds of performance indicators.

Infection Prevention Advisor fully exploits Dimensional Insight's business intelligence technology to easily:

- distribute web-based reports and dashboards
- automate alerts
- securely control access

Infection Prevention Advisor is an invaluable tool to reduce both unnecessary patient suffering and the significant costs associated with individual infections and multi-resistant bacterial outbreaks.

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About Dimensional Insight

Dimensional Insight is a leading provider of analytics, data management, and performance management solutions, offering a complete portfolio of capabilities ranging from data integration and modeling to sophisticated reporting, analytics, and dashboards. The company is an eight-time Best in KLAS winner in healthcare business intelligence and analytics from 2010 to 2021. Founded in 1989, Dimensional Insight has thousands of customer organizations worldwide. Dimensional Insight consistently ranks as a top performing analytics organization by customers and industry analysts in its core market segments including healthcare, manufacturing, and beverage alcohol. For more information, please visit <https://www.dimins.com/>.

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