

Dimensional Insight's Infection Prevention Advisor  
**Putting Infection Intelligence to Work for  
Better Patient Care**



Dimensional Insight's Infection Prevention Advisor is a powerful new tool for helping hospitals in their efforts to reduce patient infections.

Now, for the first time, the mass of data available from microbiological and clinical laboratories, from patient care and hospital procedure records, has been combined with the expertise of microbiologists, hygiene, and infection specialists into a highly specialized expert system. It is not only able to provide a detailed historical perspective right down to the individual patient level, but also to predict and alert for potential infection occurrences.

Preventing and controlling patient infection is a key concern in any hospital, with a strict set of operational rules and procedures being applied 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 the Infection Prevention Advisor. It is powered by Dimensional Insight's proven business intelligence (BI) technology that enables it to handle literally any data source. In addition, a team of participating microbiological and hospital infection experts have worked together with data specialists to develop 'infection intelligence rules' which are easily encoded by the BI engine.

The Infection Prevention Advisor infection intelligence engine is the core of a logical flow from raw data to actionable reports.

## Hospitals will benefit in four main areas:

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 which can be configured to meet specific reporting needs. This will lessen the administrative burden and free 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, the Infection Prevention Advisor will be able to assign risk factors to departments, procedures, and even individual patients in relation to a department or procedure. 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. The Infection Prevention Advisor embraces this by feeding off a broad set of data sources:

- **Pathological laboratory LIMS systems** for details on patient sample analysis covering aspects such as sample type, micro-organisms identified, level of infection, antibiotic resistance
- **Clinical chemical laboratory data** for patient white blood cell counts and CRP
- **Scan (MRI, X-ray) data per patient** — who had what scan when
- **Apothecary data per patient** — who received what medication when
- **Medical procedure data** — procedure type, dates, location, associated medical staff, actions performed
- **Patient handling data** — bed occupation, procedures, nursing staff, admittance, and discharge

## About Dimensional Insight

Dimensional Insight is a leading provider of integrated business intelligence and performance management solutions. Our mission is to make organizational data accessible and usable so everyone from analysts to line of business users can get the information they need to make informed, data-driven decisions.

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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, the Infection Prevention Advisor tool has both numerator and denominator allowing % metrics to be calculated for all kinds of performance indicators.

The tool fully exploits Dimensional Insight's business intelligence technology for easily distributing web-based reports and dashboards, its automated alerting system, and its secure access control functionality.

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

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