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Conference Abstract

## Turning data into value: experiences with business intelligence technologies from the integrated care system *Gesundes Kinzigtal*

*Alexander Pimperl, OptiMedis AG, Germany*

*Timo Schulte, OptiMedis AG, Germany*

*Helmut Hildebrandt, OptiMedis AG; Gesundes Kinzigtal, GmbH, Germany*

Correspondence to: **Alexander F Pimperl**, OptiMedis AG, Germany, E-mail: [a.pimperl@optimedis.de](mailto:a.pimperl@optimedis.de)

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### Abstract

**Introduction and Aim:** Patients generate various data with every contact to the health care system. In integrated care systems (ICS) these fragmented patient data – e.g. claims data, physicians' electronic medical records, electronic documentation for disease management programs, primary data – can be connected and used to better manage health, care and costs of the concerned population. But how can this be done in a useful and efficient way? This question was the start point of a project in the ICS *Gesundes Kinzigtal*.

**Practice change implemented:** Business intelligence (BI) is seen as valuable tool to gain insights and value from these huge volumes of data. BI is thereby defined as “the process of transforming data into information and, through discovery, into knowledge” (1).

**Targeted population and stakeholders:** The target group and stakeholders of the BI-project have been varied. The aim was to implement a data-driven management approach for the whole ICS. Therefore the network management, project managers, participating providers, payers etc. and finally in the future also patients should be able to make better, informed decisions based on the knowledge they can generate from the BI-system.

**Timeline and Sustainability:** The project, launched simultaneously with the start of the IC-contract, now more than nine years ago, has been continuously developed further.

**Highlights:** In the BI-solution of *Gesundes Kinzigtal* data from various sources can be linked in a data warehouse, prepared, enriched and used for management support via a BI front-end: starting with the project preparation up to ongoing performance management. A high grade of standardization could be achieved while simultaneously still allowing flexible ad-hoc analysis. Above that also scientific standards have been implemented, e.g. risk adjustment methods like propensity score and exact matching, model and scenario calculations (e.g. risk structure equalization scheme calculations, disease-related expense attribution models) or predictive modelling. Further details will be illustrated in the presentation.

**Transferability:** The BI-solution uses various data sources like claims data, pseudonym-linked information from participating service providers as well as documentation of Gesundes Kinzigtal itself. These data may differ from IC project to IC project as well as from country to country resp. payer to payer (claims data), but the reports and analytics generated in the BI-system should be transferable and helpful to other IC models too.

**Conclusion and Discussions:** Benefits for patients, care providers, the ICS management company and health insurers have been realised in the ICS Gesundes Kinzigtal. The data-driven management approach supported by the BI system is seen as one important factor for that success.

**Lessons Learned:** The implementation of the BI-solution has been a long term project that needed considerable resources, learning loops and still needs to be continuously developed further, but so far also brought a good return on the investment. One of the most essential success factor is the commitment of all concerned stakeholders, from the management, via the employees, to the independent network partners (doctors, health insurers etc.). These, with their data and engagement, are forming the base for establishing a data-based management process. At Gesundes Kinzigtal close trustful cooperation in an organizational-contractual framework is seen as a fundamental prerequisite for the commitment and involvement of network members. Above that e.g. also the protection of the sensitive data of the insured persons being treated is crucial. Additional lessons learned will be discussed in the session.

## Keywords

**business intelligence; performance measurement; data warehouse; data-driven management approach**

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## References

1. Behme W. Business Intelligence als Baustein des Geschäftserfolgs. In: Mucksch H, Behme W, editors. Das Data-Warehouse-Konzept: Architektur - Datenmodelle - Anwendungen. Wiesbaden: Gabler; 1996. p. 27–46.
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## PowerPoint presentation

<http://integratedcarefoundation.org/resource/icic15-presentations>