

Piano Puts the “Clinical” into your Data Warehouse

Common Pitfalls when Designing Health Care Data Warehouses

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Creating an effective data warehouse for clinical data is different to setting up warehouses for other types of data. Hospital IT departments tasked with building data warehouses and data lakes often draw on best practice from business, but these are often ill fitted to the needs of clinical settings. There are **three common mistakes** that end up blowing out implementation costs and reduce the utility of data warehouses. These, in turn, lead to a waste of time and money and dissatisfaction with the end product.

Hospitals are rich with under-utilised brain power complimented by passion to solve problems to the benefit of patients, the hospital and healthcare in general. To tap into that brain power, data warehouses need to provide clinicians (i.e. doctors, nurses, allied health) and administrators access to the right data with the right tools for them. Data analytics tools such as business intelligence, spreadsheets, statistics and machine learning software, are neither designed nor suited for use by clinicians.

Mistake 1: Not using the right clinical data model

The international organisation [Observational Health Data Sciences and Informatics](#) (OHDSI) has membership from governments, academia and industry in almost all countries. It has developed the Common Data Model (CDM) that is now used by thousands of projects around the world. Using the CDM allows you to:

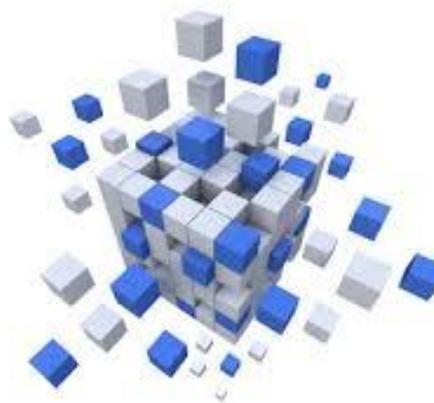
- Avoid re-inventing a clinical data model
- Use third party tools (including many free ones) to leverage algorithmic power in *cleaning, standardising* and *aggregating* data from different data sources.
- Leverage the extensive knowledge already available as well as the documentation of the model. This reduces the IT department's responsibility to produce and maintain such documentation.



Mistake 2: Using a butter knife to slice bread

There are hundreds of uses for a butter knife (screwdriver, hammer, spreading butter on toast) but it might not be the right tool for every job you (or your users) need it for. It might have all the right features, but is it delivering these features in ways that all clinicians can use?

- Tools that are specific to healthcare problems don't overwhelm the user with SQL queries, Python scripts and APIs. The best tools will have these features available for advanced users but they will also have simple interfaces that allow clinicians to ask questions easily themselves and have them answered quickly, without hours or weeks of training.
- All clinicians are familiar with clinical studies, only a few are familiar with relational databases. If you want your clinical data warehouse to appeal to the majority of users, make sure it includes specific tools for conducting clinical studies, and that these tools adhere to best practices in medical research.
- Clinical studies follow standard methodologies that need to be replicated over different datasets. Not all tools easily separate the methods from the data to facilitate collaboration and replicability. Watch out for tools that have this feature.

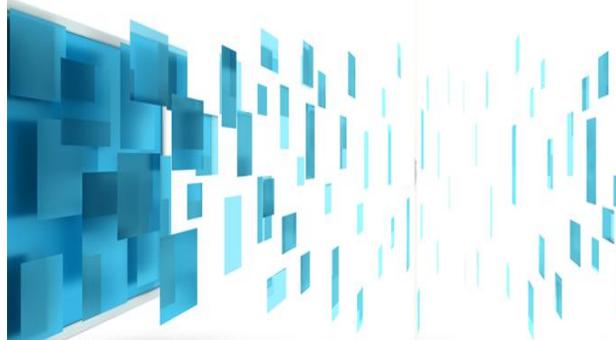


Mistake 3: Creating data extracts that nobody wants

The total user experience for your clinical data warehouse will determine how fast patient care can improve in your hospital and beyond it. It is tempting for database managers to provide subsets of data in the form of an extract but these only move the problem downstream to the clinicians. If you think that data extracts are what they need to be able to improve care, then think again. Consider:

- Data extracts are a security risk that is exponentially hard to manage as more and more copies of the data are created,

- Data extracts may be acceptable to some users who have no other choice but the reality is that the large majority of these data extracts are thrown into the “too hard” basket leading to waste and frustration,
- Giving data extracts to data scientists to conduct research is slow and inefficient as there are far too many questions and far too few data scientists.



Instead, provide users with access to data:

- via a browser using tools that enforce access restrictions set by the hospital, IT and/or data custodian,
- via a data warehouse that includes a set of interoperable tools that are flexible enough to ask a variety of questions, but are specific to healthcare needs and already speak the “language” of clinicians.

Piano puts the Clinical into your Data Warehouse

Evidentli’s team is comprised of experienced informaticians who are thought leaders in digital health, translational medicine, artificial intelligence in healthcare, and medical software development. The team has cumulatively authored over 1000 papers in these fields and includes individuals that hold leadership roles in specific international organisations such as the executive team of the International Collaboration for the Automation of Systematic Reviews, The Cochrane Collaboration and Guidelines International Network.

Established in 2018, and based on 13 years of internationally funded research, Evidentli is already a global leader in research and translational medicine automation offering services to government bodies in Australia, Europe, USA, as well as private health networks and consulting services.

Piano is a research automation platform specific for clinical research and analytics. It is 100% based on the OHDSI Common Data Model and is compatible with international data governance and security standards.

Piano includes a rich toolbox for creating patient cohorts, screening patients, statistically summarising and comparing cohorts, and generating accurate scientific reports that are always up to date.

If you would like to learn more about Piano contact info@evidentli.com or visit evidentli.com to book a one-on-one demo.