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## Larger Scale Data Management, Decision Support in Patient Care and Health Data Business Models



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### Summary

Not only in the U.S., but also in Germany it is a fact that in the current economic situation of service providers, i.e. with the prevailing liquidity bottlenecks, the proof of the above thesis sounds tempting, i.e. a service provider participating in "data marketing".

- Obtains valuable information for the treatment of its patients through the shared use of anonymized and pseudonymised health data.
- Generates additional and thus new revenues through the joint marketing of anonymised and pseudonymised health data.

As long as the German legislature does not create the conditions for this, however, this remains a vision, albeit a hopeful one, both from a health science and economic point of view.

### Presentation of the Problem, the Resulting Task and the Associated Goals

In patient care, we want to improve the effectiveness and results of our treatment services, pharmacologically as well as operationally or therapeutically, and achieve a better patient outcome.

With software-based decision support, we expect improvements in emergency care, acute care in general, the care of special or rare diseases, but also in the basic and regular care of the population.

This claim, which has also been formulated by the legislature, is to raise the algorithm-based decision support to another level with the use of Big Data.

However, the statistical challenge to be overcome is that a statistically relevant population of data required for this decision support must be readily available. In the case of rare diseases, so much data is required worldwide that only statements based on a corresponding "data pool" or cloud-based decision support systems are beneficial.

One thesis is that if service providers aim for a few use cases supplied by many and if the service providers are offered the opportunity to come together with their data via an e-health platform, this might be achievable.

Another thesis is that the marketing of the treatment/patient data collected by the service providers as anonymised and pseudonymised health data via the platform not only has a health-economic benefit, e.g. for the pharmaceutical industry and the above-mentioned cloud providers, but also and for other service providers who have a similar focus or who take care of above-mentioned patients.

### **Consideration of the Solution or Solution Competence**

The Health Care System at Rady Children's in San Diego could function as an example here, which, with its clear target group and regional reference, has the improvement of this health care population in mind and through an electronic patient data exchange, decision support - artificial intelligence (AI) and Big Data increased the population that could be mined.

The use case "Newborn Screening by Genome Sequencing" is thus considered. Utilising the large "data pool (not central, but federated)" it is exciting to show how, in the sense of the above-mentioned thesis, the

- (1) Improved treatment effectiveness and efficiency (The right therapy at the earliest possible time.)
- (2) Improved clinical and economic efficacy of the treatments, and
- (3) Commercialisation of this "data competence" to other service providers and third parties.

For Germany, it should be questioned whether the initiative of a federal state for a "digital health platform" can be able to map such questions for certain population groups and use cases - indications.

### **Description of the Achievements to Achieve the Goal**

The healthcare system at Rady Children's uses an electronic patient file in the different areas of outpatient and inpatient service provision. Of course, there is also a view of the patient in his role as an insured person or participant in the Rady Healthplan. In the healthcare system there is central data management, just like with our service providers, only that we have a completely different dimension or "data pool". The exchange of patient data in the region with other service-related data is based on a federated architecture. The exchange of anonymised and pseudonymised health data takes place on the basis of standard business practice.

For Germany or any other federal state that has a "digital health platform" it would have to be interesting to explore whether the federated interoperability platform used with regard to the above-mentioned Questions can facilitate "AI and Big Data competence" or how these results could be achieved.

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