

Prof. Dr. med. Franz Porzsolt
Private Research Institute Clinical Economics (ORCID: 0000-0003-3554-2902)

The First Step into a New Era?

>> Congratulations to the donor and all winners of the MSD Health Prize 2025. Each team presented a valuable idea. Now the task is to translate these ideas into solutions. However, the attempt at implementation creates a "Hippocratic problem" everywhere. Hippocrates (460–370 BC) demanded we treat not only the patient's "aching knee", but the whole patient.

Every conscientious physician attempt to orient his/her care strategy on his/her perception of the patient's "health risk profile." In the professional world, this unstructured (non-operationalized) orientation of care strategies is perceived as the "natural chaos" of everyday care (1). This commentary describes the tasks of science in analyzing and solving the consequences of this global chaos.

The three tasks of science are:

(a) Scientists must operationalize Hippocrates' demand, i.e., they must find a consensus by which the "whole patient" can be captured using standardized and reproducible methods. International information exchange can succeed if all countries agree on a common strategy. Regions in which cultural and moral/ethical orientations align can be viewed as an ecosystem. The population of such a system should reach approximately 100 million to adequately represent the variance. If the strategies for analyzing these ecosystems are identical, the differing results of the analyses can be correctly interpreted. The advantage is that we could learn from one another.

(b) The second task of science is to convince decision-makers in all countries of the necessity to change the current mindset regarding healthcare:

(b1) Expedient action requires developing the strategy to confirm the added value of the altered care before changing the care itself, rather than implementing changes without achieving prior consensus on how to demonstrate their added value.

(b2) The consensus must include identifying acute health problems which—classified according to Hippocratic risk profiles—were treated with different but comparable strategies and confirm successes across various outcome dimensions (resolution of the acute health problem, side effects, and costs).

(b3) The vision of a three-dimensional evaluation of healthcare services was proposed by Sir A. Cochrane and Sir A. Bradford Hill (2). In cooperation with various international teams, we were able to operationalize this vision and develop the necessary concept of a non-experimental method, the Pragmatic Controlled Trial (PCT) (3). The difference between an experimental RCT and the application of Bayesian statistics to account for different study endpoints and Endpoint-Specific Risk Profiles (ESRPs) in a non-experimental, pragmatic study (the PCT) has been published [3–5]. Figure 1 outlines the formal and functional differences. Public interest in the necessary strategy and methods has hardly been awakened. Instead, significantly simpler experimental concepts to demonstrate the suitability of everyday healthcare have prevailed [6,7]

(c) The third task of science should disclose previously unnoticed "reasoning accidents" occurring in all countries. Here are some examples:

(c1) Almost all scientifically supported ethical, epidemiological, medical, economic, legal, and political decisions are based on experimental measurements. When scientific thinking is generally classified as politically harmful "lateral thinking" , similar "reasoning accidents" can hardly be communicated.

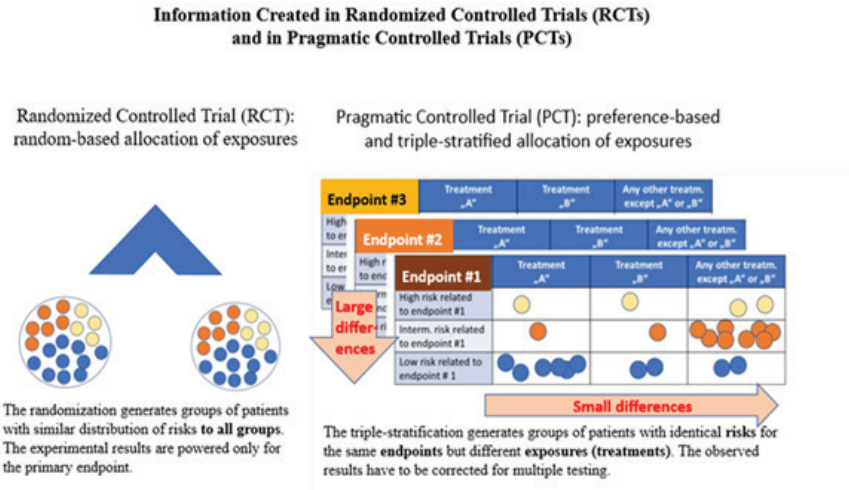


Fig 1: Results generated in experimental RCTs or in pragmatic PCTs. The PCT identifies the individual patients that received a defined treatment 'A' or 'B' or are listed in the group 'any other treatment' when the differences in outcomes of type 'A' or type 'B' treatment should be compared to the range of outcomes observed in patients of the same ESRC who received any other treatment. 'A' and 'B' may include a single type of treatment or a group of similar treatments. The ESRPs were considered in all patients for stratification in a high-risk (yellow) or intermediate-risk (red) or a low-risk group (blue) patient separately for each of the endpoints in addition to the interventions used. The same patient may be classified into different risk groups depending on the assessed endpoint. Modified from [3, 5, 8 - 10].

(c2) A current project therefore addresses the significant risks of "reasoning accidents," which can be clearly distinguished from the traditional principle of "lateral thinking" defined by Edward de Bono [7].

(c3) The example of exhaust-emission measurement confirms that experiments can only validate a principle of action (efficacy), but not the everyday suitability (effectiveness) of a product. By relying on (experimental) exhaust measurement in the laboratory instead of pragmatic measurement on the road, avoidable one-off costs in the magnitude of 20 billion Euros were incurred. Everyone can estimate the corresponding magnitude of costs generated annually in healthcare. Almost all employees in the healthcare system confirm the impression that a significant portion of all healthcare services could achieve comparable results at lower costs in everyday practice. If we had succeeded in acquiring funding, we could have tested the developed concepts for feasibility—funds that could be used to finance urgently needed or innovative concepts. Unfortunately, there are too few incentives in healthcare to pay attention to cost-effectiveness.

(c4) Science applies validated and generally accepted methods to analyze complex relationships, while politics solves complex relationships with experience-based strategies. No one doubts that both expertises are indispensable. From a scientific perspective, the mutual independence of both expertises must be maintained to avoid destroying a society's scientific potential. Everyone understands that one cannot play a strategic game of chess against oneself. Reasoning errors can be explained based on this limitation. Two reasoning errors have established themselves in all healthcare systems.

(a) Experimental studies can only confirm the principle of action (efficacy), but not the everyday suitability (effectiveness) of health services. The experiment only confirms that something works, but not for whom.

(b) When experienced scientists do not understand an explained relationship, they should immediately request clarification to develop their students' critical faculties. Students rarely have the courage to question a relationship they do not understand. Lack of understanding is not shameful. Those who do not clarify misunderstandings accept any nonsense.

The Consequences

Every successfully operating system and every economically acting customer has already completed the switch from cost-oriented to result-oriented business. Three reasons favor this switch in the healthcare system as well:

(a) Result-oriented care follows the principle of causality from the patient's perspective.

(b) Result-oriented business follows the rule "Form Follows Function"

(c) Customers can often inquire about the value of goods; patients can rarely inquire about the value of healthcare.

Therefore, result-oriented care should be offered to all citizens as a societal contribution.

The required criteria can be easily captured with the support of AI. Real-world results can only be reported in the complexity with which they occur in everyday care. The two relevant influencing criteria, the doctor-patient relationship and the patient's willingness to comply with the doctor's recommendations, can be supplemented if necessary. If these two influencing criteria are not granted, a change can offer a sensible alternative to both partners, patient and the doctor. <<

Online-Appendix:

A summary of the development of the Pragmatic Controlled Trial (PCT) can be found on the MVF online portal at the following link: https://t1p.de/9rk96

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