

Analysis of Strengths, Weaknesses, Opportunities, and Threats as a Tool for Translating Evidence into Individualized Medical Strategies (I-SWOT)

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Abstract

Background: It is the physicians' task to translate evidence and guidelines into medical strategies for individual patients. Until today, however, there is no formal tool that is instrumental to perform this translation.

Methods: We introduce the analysis of strengths (S) and weaknesses (W) related to therapy with opportunities (O) and threats (T) related to individual patients as a tool to establish an individualized (I) medical strategy (I-SWOT). The I-SWOT matrix identifies four fundamental types of strategy. These comprise "SO" maximizing strengths and opportunities, "WT" minimizing weaknesses and threats, "WO" minimizing weaknesses and maximizing opportunities, and "ST" maximizing strengths and minimizing threats. Each distinct type of strategy may be considered for individualized medical strategies.

Results: We describe four steps of I-SWOT to establish an individualized medical strategy to treat aortic disease. In the first step, we define the goal of therapy and identify all evidence-based therapeutic options. In a second step, we assess strengths and weaknesses of each therapeutic option in a SW matrix form. In a third step, we assess opportunities and threats related to the individual patient, and in a final step, we use the I-SWOT matrix to establish an individualized medical strategy through matching "SW" with "OT". As an

example we present two 30-year-old patients with Marfan syndrome with identical medical history and aortic pathology. As a result of I-SWOT analysis of their individual opportunities and threats, we identified two distinct medical strategies in these patients.

Conclusion: I-SWOT is a formal but easy to use tool to translate medical evidence into individualized medical strategies.

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Key Words

Aorta • SWOT analysis • Medical decision-making • Evidence-based medicine • Strategy

Introduction

The German Aorta Center of Hamburg (DAZ-H) is run by a team of surgeons, interventionalists and geneticists with experience in treating aortic diseases. Our aortic diseases board holds weekly conferences for decision-making on patients with aortic disease. In this report we describe how our board uses I-SWOT to establish individualized medical strategies for our patients [1, 2]. Originally, SWOT analysis was designed to assess strengths (S) and weaknesses (W) as internal capabilities of an organization as opposed



Internal External	Strengths (S) related to therapy	Weaknesses (W) related to therapy
Opportunities (O) related to patient	SO (maxi-maxi) Maximize S & O All-maxi-strategy	WO (mini-maxi) Minimize W & maximize O Opportunity-focused strategy
Threats (T) related to patient	ST (maxi-mini) Maximize S & minimize T Strength-focused strategy	WT (mini-mini) Minimize W & T All-mini-strategy

Figure 1. The general SWOT matrix.

to opportunities (O) and threats (T) posed by the external environment [3]. Today, SWOT analysis is one of the world's most widely used methods for strategic planning [4, 5]. We use this instrument to match strengths and weaknesses of therapy with opportunities and threats related to individual patients and to establish individualized medical strategies. Such strategies are important to systematically integrate both specific health conditions and needs, values and attitudes of patients.

Translation of evidence into individualized medical strategies

Evidence based medicine (EBM) is "the integration of the best available evidence with our clinical expertise and our patients' unique values and circumstances" [6]. However, protagonists of EBM emphasize that "evidence, whether strong or weak, is never sufficient to make clinical decisions", and that EBM "is far from a one-size-fits-all strategy" [7].

Similarly, guidelines state that "the final decisions concerning an individual patient must be made by the responsible health professional(s)" [8]. Hence, it remains the physicians' task to translate evidence and guidelines into medical strategies for individual patients. Until today, however there is no formal tool available to perform this translation. Here we introduce I-SWOT as a simple and easy to use tool to accomplish this task [2].

The general SWOT matrix

At its simplest, strategy is what one may use to reach goals. SWOT analysis regards as "internal capabilities" all those factors that a strategic planner contributes himself to reaching a goal. Depending on whether these capabilities support or jeopardize attaining goals, SWOT analysis terms these factors "strengths" or "weaknesses". Conversely, SWOT analysis regards as "external possibilities" all factors that the strategic planner does not control directly. Depending on whether these possibilities support or jeopardize goals, SWOT analysis terms these factors "opportunities" or "threats". In our SWOT analysis physicians take the role of the strategic planner, where we call "strengths" or "weaknesses" those factors of therapy that relate to both the efficacy of a medication or an intervention, and the physician's capability to deliver such therapy. "Opportunities" or "threats" are those factors of therapy that mostly relate to patients, such as the disease that requires treatment, the health status of the patient, or the motivation or capability to support therapy.

Matching strengths and weaknesses with opportunities and threats identifies four distinct types of strategy [1] (Figure 1).

SO strategy

This strategy maximizes both internal strengths and external opportunities ("Maxi-maxi" strategy) [3]. The strategy might be chosen in a cheerful situation

with abundant own strengths and auspicious external opportunities. For example, well-established standard procedures are available for surgery of aortic root aneurysm, but a skilled surgeon may perform a promising but not yet-established operation in a healthy and motivated patient [9]. This surgeon maximizes exploit of strengths (“S”) given by his skills to accomplish the operation where he takes opportunity (“O”) of motivation and relatively good health of his patient. However, in such situations doctors may overrate their prospects.

WT strategy

This strategy minimizes both weaknesses and threats (“Mini-mini” strategy) [3]. The strategy might be chosen in a precarious situation in which strengths are sparse and threats are mounting. For example, a doctor may resort to purely medical therapy of a patient with an acute Type A dissection in a hospital without heart surgery. This doctor minimizes the weakness of therapeutic options in his clinic through applying the easily available but hardly effective medical therapy of Type A dissection (“W”), and he minimizes threats (“T”) by avoiding transportation of an unstable patient to another hospital. Doctors may strive to escape precarious situations and seek for other strategies.

WO strategy

This opportunity-focused strategy minimizes weaknesses and maximizes opportunities (“Mini-maxi” strategy) [3]. The strategy may be chosen in a situation where therapeutic options are severely restricted (“W”) while external opportunities (“O”) are promising. For instance, the doctor mentioned above might order a helicopter to get his patient into a surgical center. This doctor minimizes weaknesses (“W”) of treating aortic dissection in his own clinic by maximizing opportunities (“O”) of patient survival in another clinic. In the WO position doctors may seek to reinforce their own strengths to get better control over therapy.

ST strategy

This strength-focused strategy maximizes own strengths and minimizes threats (“Maxi-mini”

strategy). The strategy may be chosen in bail-out situations where maximizing own strengths may be the only way to overcome substantial threats. For instance, a surgeon may treat a Crawford Type II expanding aortic dissection through replacement of the entire descending thoracoabdominal aorta (10). This doctor overcomes the substantial threat given by an expanding Crawford Type II dissection (“T”) by using his own capabilities (“S”) to perform extensive surgery with exceptionally good results.

However, in such situations doctors may avoid to exaggerate reliance on their own capabilities.

Four steps of I-SWOT to establish an individualized medical strategy

At our center, we perform four steps to establish an individualized medical strategy to treat aortic disease (Figure 2).

1. Define the goal of therapy and identify all evidence-based therapeutic options. The patients discussed in our aortic diseases board present with decision problems that are related to aortic disease. In the following, we present our discussion of a 30-year old man with a disease-causing FBN1 mutation and clinical criteria of Marfan syndrome (MFS). His aortic root diameter had progressed from 4.3 cm to 4.6 within one year. The goal of therapy is to protect this patient with an aortic root aneurysm against dissection. We identified the following 5 options which were available according to the literature [11-13]:

- Medical treatment with beta-blockers (BAB) [14], or angiotensin II-receptor blockers (ARB) [15];
- Elective surgery of the aortic root including personalized external aortic root support [9, 16];
- Aortic-valve-sparing reimplantation technique according to David [17];
- Composite valve grafting according to Bentall with bio-aortic valve prosthesis [18]; or
- Composite valve grafting according to Bentall with a mechanical valve [19].

In addition, we define the prognosis of aortic root aneurysm and the need for timing of an intervention. With an aortic diameter of 4.6 cm most guidelines would consider surveillance and BAB

Four steps of I-SWOT to establish an individualized medical strategy	
1	Define the goal of therapy and identify all evidence-based therapeutic options
2	Assess Strengths and Weaknesses of each therapeutic option (SW-matrix)
3	Assess Opportunities and Threats related to the individual patient (OT-matrix)
4	Use I-SWOT to establish an individualized medical strategy

Figure 2. Four steps to establish an individualized medical strategy.

Internal capabilities related to therapy	Strengths	Weaknesses
<div style="border: 1px solid white; padding: 5px; margin-bottom: 10px;"> I-SWOT matrix form Aortic root aneurysm in Marfan syndrome Patient name: Date of audit: </div>	<ol style="list-style-type: none"> 1. No surgical trauma (S1) 2. Losartan may cure aorta (S2) 3. No anticoagulants (S3) 4. Avoidance of prosthesis-patient mismatch (S4) 5. Low risk for endocarditis (S5) 6. No bypass needed (S6) 7. Good results at DAZ-H (S7) 8. Short clamping-time (S8) 9. Durability of AVR (S9) 10. Classical gold standard (S10) 	<ol style="list-style-type: none"> 1. Protection is not safe (W1) 2. Drug intolerance (W2) 3. Innovative therapy (W3) 4. Need of expertise (W4) 5. Operation not available at DAZ-H (W5) 6. Long clamping time (W6) 7. Reoperation for AVD (W7) 8. Prosthesis mismatch (W8) 9. Oral anticoagulation (W9) 10. Risk for endocarditis (W10)
Opportunities	SO maxi-maxi strategy	WO mini-maxi strategy
Threats	ST maxi-mini strategy	WT mini-mini strategy

Figure 3. Example for a standardized I-SWOT matrix form.

medication with surgery indicated only when a diameter ≥ 5.0 cm is reached. However, the patient had exhibited progression of 0.3 cm of his aortic diameter within one year; evidence and guidelines yielded conflicting data as to whether this was a risk factor to initiate surgery already at ≥ 4.5 cm [8, 20-24]. Finally we concluded that based on a simple analysis of evidence all five therapeutic options remained acceptable options for treatment of our patient.

2. Assess strengths and weaknesses of each therapeutic option (SW-matrix). The first step of I-SWOT analysis is to assess strengths and weaknesses of each therapeutic option. We establish

strength-weakness (SW) matrices for each option, where we integrate information from studies, case reports, guidelines, and from our own experience. Table 1 shows the SW-matrix for treating aortic root aneurysm in MFS (Table 1).

3. Assess opportunities and threats related to the individual patient (OT-matrix). The core of an individualized treatment strategy is to adjust treatment plans to the individual patient [1, 2]. The patient may have physical, psychological or mental health conditions, individual wills, needs, beliefs, values, risk attitudes, and emotions that may speak in favor of or against specific therapeutic strategies. Again, we screen the literature and

Table 1. Strengths-weaknesses matrix of specific options to treat aortic root aneurysm in Marfan syndrome.

Treatment option	Strengths	Weaknesses
(1) Wait and medicate	Prevention of surgical trauma (S1); ARB may cure aortic disease in some patients (S2); Other strengths: S3–S6	Protection against aortic root rupture and aortic valve regurgitation is not safe especially at aortic diameters > 5.0 cm (W1); Patient may be nonresponders to drugs or may have drug reaction (W2)
(2) Personalized external aortic root support	No oral anticoagulation (S3); Preservation of native aortic valve (S4); Low risk of endocarditis (S5); Avoidance of cardiopulmonary bypass (S6)	Innovative therapy with little data on long-term outcome, where intervention is performed at 4–4.5-cm diameters when surgery is usually not indicated (W3); High level of expertise (W4); Operation is not performed at DAZ-H (W5)
(3) AVS re-implantation technique according to David	No oral anticoagulation (S3); Avoidance of prosthesis-patient mismatch (S4); Low risk of endocarditis (S5); Good results at DAZ-H (S7)	High level of expertise required (W4); Long clamping time (W6); Reoperation for AVD (W7)
(4) CVG according to Bentall with Bio-AVR	No oral anticoagulation (S3); Shorter clamping-time and easier to perform than AVS (S8)	Reoperation for AVD (W7); Patient-prosthesis mismatch (W8)
(5) CVG according to Bentall with mechanical AVR	Life-long durability of AVR (S9); Classic gold standard procedure (S10)	Patient-prosthesis mismatch (W8); Oral anticoagulation (W9); High risk of endocarditis (W10); Noise of mechanical valve (W11)

ARB = angiotensin-II-receptor blockers; AVD = aortic valve dysfunction (either of the native valve or of a bio-prosthesis); AVS = aortic-valve-sparing operation; AVR = aortic valve replacement; CVG = composite valve grafting; and SW = strength and weaknesses.

discuss our personal experience to comprehensively assess patient conditions which may interfere with outcomes of therapy. Table 2 displays our opportunities-and-threats matrix (OT matrix) of assessing adult MFS patients for elective surgery.

4. Use I-SWOT to establish an individualized medical strategy. The final step to an individualized medical strategy is to match strengths and weaknesses of therapeutic options with opportunities and threats related to the individual patient.

We present results from the systematic audit of strengths and weaknesses in the top row of the SWOT matrix, where we use standardized forms which allow us to prepare SWOT matrices for various aortic disease entities. Since most strengths and weaknesses relate to more than one therapeutic option, we list strengths and weaknesses in the final I-SWOT matrix regardless of specific therapeutic options. For example, in the final I-SWOT matrix we list “no oral anticoagulation” as strength “S3”, which relates to therapeutic options 1-4, or “patient-prosthesis mismatch” as weakness “W8”, which relates to therapeutic options 4 and 5 (Table 1; Figure 3). Conversely, in the left column of the I-SWOT matrix we list individualized results from the audit of patient-related opportunities and threats. For instance, good health without comorbidity may be entered into the I-SWOT matrix as an opportunity for treatment in the “health status domain”, which corresponds to domain 4 of our OT matrix (“O4”; Table 2).

I-SWOT exemplified

As the basic example we use the Marfan patient mentioned above. Imagine him to be an active cyclist in good health (O4) who had undergone surgical closure of a ventricular septal defect in childhood (T4; Figure 4). Accordingly, an SO strategy might be to perform an aortic-valve-sparing reimplantation operation according to David to maximize outcome through advanced surgical techniques (S3-5, S7), and promote the patient’s good health and participation in sports activities (O4), whereas a WT strategy might be medical treatment to minimize surgical trauma (W3-8) and minimize the likelihood of a third heart operation (T4).

Table 2. OT Matrix for assessing the individual patient

Domain	Opportunity or threat?
Will (O1/T1)	Is the patients’ will clear, strong and stable or unclear, weak and fluctuating? Does the patient want to follow best medical advice or does he refuse or request specific measures?
Needs (O2/T2)	Does the patient have needs in his private life, profession, or spare-time activities that support or threaten therapy?
Beliefs, values, risk attitude (O3/T3)	Are there religious beliefs (e.g., Jehovah’s Witness), values (e.g., refusal of surgery before finishing his master degree), or risk attitudes (e.g., being particularly anxious or frivolous)?
Health status (O4/T4)	Is there diagnostic uncertainty about the aortic pathology or etiology of disease? Are there allergies or contraindications against BAB, ARB, ACE-inhibitors, or anticoagulants? Do certain conditions jeopardize surgical or interventional success (e.g., bleeding disorders, aortic and cardiac anatomy)? Is the patient in good health, of young age, does he have endurance, other organ diseases, or multi-morbidity?
Intellect (O5/T5)	Does the patient have a high or low level of education, breadth of understanding? Is he well informed, or able to understand complex courses of argument or action? Does he have restrictions of intellect such as dementia?
Psychiatric status (O6/T6)	Does the patient have a stable psychological status? Does he have restrictions in his behavior imposed through diseases such as depression or schizophrenia?
Sociology (O7/T8)	Does the patient have supportive or rather complicating social resources (health insurance, housing conditions, and economic conditions) and environment (e.g., family, friends, or profession)?
Emotions (O9/T9)	Does the patient have high or low trust in health professionals? Does the patient have high or low confidence in medical success and in his future prospects? Does he have an optimistic or rather a pessimistic attitude? Does the patient have high or low motivation for intervention?

OT identifies opportunities and threats related to the individual patient

A WO strategy might be to perform a composite valve grafting according to Bentall with a bio-aortic valve prosthesis to minimize surgical risk (W4, W6),

<p>Internal capabilities related to therapy</p> <div style="border: 1px solid white; padding: 5px; margin: 10px 0;"> <p>I-SWOT matrix form Aortic root aneurysm in Marfan syndrome</p> <p>Patient name: „Patient 1“</p> <p>Date of audit: 10.10.2014</p> </div> <p>External possibilities related to patient</p>	<p>Strengths</p> <ol style="list-style-type: none"> 1. No surgical trauma (S1) 2. Losartan may cure aorta (S2) 3. No anticoagulants (S3) 4. Avoidance of prosthesis-patient mismatch (S4) 5. Low risk for endocarditis (S5) 6. No bypass needed (S6) 7. Good results at DAZ-H (S7) 8. Short clamping-time (S8) 9. Durability of AVR (S9) 10. Classical gold standard (S10) 	<p>Weaknesses</p> <ol style="list-style-type: none"> 1. Protection is not safe (W1) 2. Drug intolerance (W2) 3. Innovative therapy (W3) 4. Need of expertise (W4) 5. Operation not available at DAZ-H (W5) 6. Long clamping time (W6) 7. Reoperation for AVD (W7) 8. Prosthesis mismatch (W8) 9. Oral anticoagulation (W9) 10. Risk for endocarditis (W10)
<p>Opportunities</p> <ol style="list-style-type: none"> 1. Patient has good health (O4) 2. Patient is an active cyclist (O4) 3. Patient is highly accurate and reliable (O3) 	<p>SO maxi-maxi strategy</p> <p>Perform David operation to maximize advantages through advanced techniques (S3-5, S7), and promote the patient’s good health and participation in sports activities (O4).</p>	<p>WO mini-maxi strategy</p> <p>Perform Bentall operation with biological valve to minimize the extent of operation (W4, W6), but to maximize sports by avoiding anticoagulation (O4).</p>
<p>Threats</p> <ol style="list-style-type: none"> 1. Patient had undergone surgical closure of ventricular septal defect in childhood (T4) 2. Patient avoids to take any risks (T3) 	<p>ST maxi-mini strategy</p> <p>Perform Bentall operation with mechanical valve to maximize durability (S9, S10), and to minimize the likelihood of a third heart operation (T4).</p>	<p>WT mini-mini strategy</p> <p>Perform purely medical treatment to minimize surgery (W3-8) and threats of reoperation (T4).</p>

Figure 4. The use I-SWOT to establish an individualized medical strategy in a 30-year old male Marfan patient with an aortic root aneurysm (“Patient 1” as discussed in the text).

but to maximize the patient’s sports opportunities by avoiding anticoagulation (O4). Finally, a ST strategy might be to perform a composite valve grafting according to Bentall with a mechanical valve to maximize therapeutic durability (S9, S10), and to minimize the likelihood of a third heart operation (T4).

We present four examples with variations in the individual attitude and character of this patient. We show how these variations influence I-SWOT based decisions, where each example relates to one of the four distinct types of strategy.

Patient 1. In our first example, the above mentioned patient is a highly accurate (O3) and risk-avoiding bureaucrat (T3), who might at best

be convinced to undergo a mechanical Bentall operation and then to personally self-control INR values throughout his life (ST type of strategy) (Figure 4).

Patient 2. Imagine, the same patient to be a professional rock drummer living a “no risk, no fun” life style. He might feel perfect about taking a David operation once and then get rid of major health troubles for the next couple of years (SO type of strategy).

Patient 3. Alternatively, the above mentioned patient is a doctor of anthropology, who cannot be dissuaded from maximizing his professional career by living with natives in a tropical moist forest for the next 5 years (O3). For him, a bio-Bentall minimizes the

risks of both anticoagulation and reoperation during his life without access to modern health care (WO type of strategy).

Patient 4. Finally, we may imagine our patient to be a skeptical high school teacher who is single and spends his spare time in a Yoga gym (T3). He distrusts brachial western surgery and presently can identify himself only with regular ultrasound surveillance and medical therapy hoping that the aorta stays at a steady diameter (WT type of strategy).

All four examples represent variations in the individual attitude and character of the patient. However, there could be variation in all other dimensions listed in the OT-matrix (Table 2). Imagine that "patient 4" was diagnosed of having MFS without confirmation by FBN1 sequencing (O4/T4). Considering the hazards of a WT strategy in this patient we would suggest molecular analysis. Imagine that a disease-causative mutation is located in the TGFBR2 gene rather than in the FBN1 gene: the diagnosis then is Loeys-Dietz syndrome rather than MFS. As a consequence, the risk of an aortic root aneurysm with 4.6 cm diameter is much higher than in MFS and we definitively would try anything to convince the patient to move away from a WT type of strategy to any strategy that offers a definitive prevention of rupture of the Loeys-Dietz aorta.

Taken all these example together, we have shown that as a result of I-SWOT, we identify distinct individualized medical strategies depending on different characteristics of patients. In our aorta board we establish a final individualized medical strategy only through discussion between all medical disciplines represented in our board and, most importantly, through discussion with our patients.

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Conclusions

We identify specific advantages of SWOT analysis to translate evidence into individual medical strategies. SWOT analysis is a formal way to support the systematic integration of the patient and their individual issues into medical strategies. With our technique of standardizing evidence-based SW matrices of therapies, I-SWOT saves rather than costs time in the decision-making process. I-SWOT reminds us to consider four basic options of strategy rather than just a single one, which might be, for instance, only to seek exploiting the maximum of strengths and opportunities [3]. Practice guidelines may provide SW matrices of treatment options to provide standardized support for individualized medical decisions.

Moreover, I-SWOT may be used in case studies as an instrument to teach individualized medical decision-making. Finally, we believe that I-SWOT is a simple approach to holism in medical strategy, which encourages to integrate attitudes and values of both doctors and patients.

Acknowledgment

The authors wish to thank Michael Schlüter and Arnim Sachweh for their valuable contributions to the discussion of the paper, and also Reed E. Pyeritz for his thoughtful and encouraging comments.

Conflict of Interest

The authors have no conflict of interest relevant to this publication.

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Cite this article as: von Kodolitsch Y, Bernhardt AM, Robinson PN, Kölbel T, Reichensperner H, Debus S, Detter C. Analysis of Strengths, Weaknesses, Opportunities, and Threats as a Tool for Translating Evidence into Individualized Medical Strategies (I-SWOT). *AORTA (Stamford)*. 2015;3(3):98-107. DOI: <http://dx.doi.org/10.12945/j.aorta.2015.14.064>

EDITOR'S QUESTIONS

1. How is I-SWOT different from the decision-making that a physician or team makes automatically in caring for any patient?

I-SWOT may indeed describe what thoughtful clinicians actually do during the process of decision-making. Nonetheless, we are not aware of reports on SWOT analysis for individualized medical decision-making.

I-SWOT adds important aspects to tacit or intuitive SWOT-ing: First, it provides an explicit and rational method that explains how evidence actually translates into individualized strategies; future treatment guidelines may take advantage of I-SWOT and establish SW matrices for specific goals of treatment. Second, I-SWOT allows physicians to make transparent, to discuss, to criticize and to teach where, why and how they make specific choices of strategy. Third, whereas simple-minded protagonists of EBM tend to understand variation of medical practice exclusively as a sign of malpractice, I-SWOT shows why such variation may reflect a wise physicians' respect of his patient as an individual with an own personality. Fourth, especially for decisions debated in groups it may be helpful to agree on a common method of how to make decisions. Finally, the formalization of I-SWOT can vary: one may do it quickly and tacitly, one may use standardized I-SWOT matrix forms as shown in [Figure 3](#) and [Figure 4](#), and another one may even weigh all different strengths, weaknesses, opportunities and threats using score points.

2. Can you describe for us how the process of SWOT analysis proceeds in your Aortic Board meetings? Does one individual prepare an analysis before the meeting? Is the analysis prepared after the meeting? Does the team go to the literature for each case, or do they know the literature and just input their knowledge? Please help us to understand the process.

A physician presents their patient including history, medical findings, comorbidities, CT-images and so on. Then we formulate the goal of therapy and identify the options for treatment. We start establishing firm SW matrices for different goals of aortic therapy ([Table 1](#)). However, for "standard" goals of aortic therapy we do not use these matrices. In a next step, we discuss specific opportunities and threats related to the patient, where we ask questions about all

domains as outlined in the OT matrix ([Table 2](#)). This works well for assessing individual medical and social issues of a patient (O4/T4; O6/T6; O7/T8). However, the conference setting imposes serious limits to the audit of complex and subjective domains of the OT matrix. Domains such as will (O1/T1), needs (O2/T2), values (O3/T3), intellect (O5/T5), and emotions (O9/T9) require an intense dialogue with the patient. Such dialogue is difficult to delegate to the physician who presents the patient. In a final step, we formulate an individualized medical strategy and designate which of our Board members actually performs therapy. This person discusses our suggestion of strategy with the patient and re-assesses the patients' will, values and attitudes. It happens in a considerable quantity of individuals that we change strategies after intense dialogue with the patient. Then we adjust strategies and another colleague may take over the further management.

3. Do you know of other teams that use I-SWOT actively in clinical care in the aortic arena or in any other disease entity?

No. No other team uses I-SWOT with clear reference to this method. We wrote the article to inform and encourage colleagues to try out this tool: Guidelines may provide SW matrices for specific treatment goals, as mentioned. Clinical decision-makers may assess OT matrices of each patient with complex decisions where they really assess the patients' will, needs, values, intellect, and emotions. Intense dialogue with patients is important to make best use of the potential benefits of I-SWOT. So, who uses I-SWOT "unknowingly" already and who may probably use I-SWOT in the future? Any physician who strives for medical decisions and respects the patient as a unique individual. That is why we are confident that I-SWOT will find friends outside the Hamburg Aorta Centre.