

August 26<sup>th</sup>, 2020

---

# World's Best Specialized Hospitals 2021 – Methodology

---

## Table of contents

1	Introduction .....	1
2	Study Design .....	2
2.1	General Methodology .....	2
2.2	Validation by the Expert Board .....	4
2.3	Scoring Model .....	5
3	Disclaimer .....	5

## 1 Introduction

Hospitals have a crucial role in modern health care systems since they perform a wide variety of medical services in different medical fields, ensuring adequate medical care for the general population in the surrounding area. General hospitals are best suited to deliver care for patients with the most common diagnoses and illnesses; however, the more specialized hospitals become, the more they can treat cases that are more difficult, complex or rare. These hospitals are often at the forefront of scientific development in their medical fields and excel in certain surgeries or procedures which lead other hospitals or doctors to transfer their patients to these facilities to get the best treatment. Specialized Hospitals can be leading general hospitals which excel in certain areas or smaller hospitals which focus on a few or even just one area of expertise. On a health care system level, almost all developed countries trend towards more centralization of medical expertise in the hospital sector, ensuring more specialization and deeper know-how in areas of expertise.

For patients, the decision to choose the right hospital for their specific condition is often determined mainly by the hospital's reputation and expertise in the medical field they require, while the overall reputation of the hospital is only of secondary importance. However, many of the existing web-based portals, websites and news articles only compare on a hospital level, with data also only being reported on a hospital level (if at all). Most available resources also only focus on one specific country. To date, there is no methodologically sound international ranking of specialized hospitals by medical fields.

The World's Best Specialized Hospitals 2021 ranking is a project which aims to close this gap by **ranking the best hospitals in six medical fields across the world.**

The medical fields included are:

- Cardiology
- Oncology
- Endocrinology
- Neurology
- Orthopedics
- Gastroenterology

The ranking features the top 200 hospitals for Cardiology and Oncology and the top 100 in the remaining four medical fields. While global top hospitals are represented in multiple medical fields, it is of note that leading specialized hospitals that are highly

renowned in one or two specific medical fields or treatments, also made it into the list relevant to their specialization.

Hospitals which are not accessible to the public and/or are very small were excluded from the ranking since they were very unlikely to receive enough recommendations to make the final list.

Since most internationally available hospital KPIs only report on an aggregated hospital level (e.g. infection rates) and the few available KPIs on a specialty level are mostly not comparable across countries (e.g. staffing ratios) the ranking is based solely on a peer recommendations for specific areas of expertise from a global survey of medical professionals. Based on the underlying methodology described in this document each list includes a ranking of the 50 best global hospitals, while ranks 51-100/200 are sorted alphabetically.

## 2 Study Design

The following sections provide an overview of the study design and the underlying methodology used to determine the ranking. First, the general approach is outlined in chapter 2.1, followed by a description of the role of the Global Expert Board in chapter 2.2 and the approach that was used to create the lists in the six medical fields in chapter 2.3

### 2.1 Methodology

The study design of the 2021 World's Best Specialized Hospital project is based on a global survey among tens of thousands of medical professionals (doctors, health care professionals and hospital managers).

The peer recommendations were collected in two survey waves. First, Newsweek and Statista performed an online survey among tens of thousands of doctors, health care professionals and hospitals managers in over 20 countries. In total over 40,000 medical experts were invited to participate in the online survey.

The data was collected by Newsweek and Statista during an initial survey period from May to July 2020. The survey was also promoted on newsweek.com. Participants were asked to recommend hospitals based on their expertise in one primary medical field (e.g. Cardiology for Cardiologists) and were able to choose an optional secondary area of expertise in which they are also knowledgeable (e.g. due to frequent cooperation with other medical fields). These secondary recommendations were given a lower weight than primary recommendations (see 2.3 for scoring details). The questionnaire did not

suggest a list of recommended hospitals, therefore respondents were free to suggest any hospital they deemed recommendable (merely aided by an autocomplete function for convenience). Self-recommendations were not allowed. Statista performed plausibility checks on all data to prevent self-nomination. A **recommendation score** was calculated based on the number of weighted recommendations received.

For the second survey period, Statista asked specialists from the six medical fields to rate a set number of hospitals. The list was comprised of the hospitals which received the highest number of recommendations in the first wave as well as the global top100 hospitals from Statista/Newsweek's "World's Best Hospitals 2020" ranking (there was an overlap between both criteria). Participants were asked to assign a ranking position to these hospitals (Top 1, Top 5, Top 10, Top 20, Top 50, Top 75, Top 100, Top 200). The ranking position was subsequently converted into a ranking score.

Answers were then weighted by a) the type of respondent by profession, with primary recommendations from doctors in the relevant medical field receiving the highest weight e.g. Cardiologists for Cardiology) and b) the confidence respondents had in their vote (0-100%). Combined, the two survey periods resulted in over 22,000 individual hospital recommendations.

Finally, the combined data was analyzed and an **overall reputation score** (0-100%) was calculated for every hospital in every medical field based on the total weighted number of recommendations and the ranking score. The hospital with the highest number of weighted recommendations received a recommendation score of 100% while the next best hospitals received a score relative to the weighted number votes they received, e.g. when hospital A received the most votes with 100, hospital B with 80 votes receives a score of  $\frac{80}{100}=80\%$ .

The recommendation score was used to generate the preliminary lists for the six medical fields. Hospitals that specialize in more than one medical field received specific recommendation scores for each medical field based on the respective recommendations. Therefore, one hospital can be represented in more than one list if it receives enough recommendations in each medical field (up to being represented in all six lists). On average, general hospitals were represented with slightly over 2 departments, but at the same time there were also over 100 specialized clinics which made it into one of the six rankings with their specialization.

The preliminary lists were presented to the global expert board, which serves in an advisory role (see below), for validation.

## 2.2 Validation by the Expert Board

The following section outlines the function of the global board of medical experts which was founded by Statista to support the World's Best Specialized Hospital Project.

The idea behind the board of experts was to create an independent body that was tasked with the continuous development of the quality and scope of the project. The board of experts is therefore tasked with providing quality assurance by validating the preliminary hospital lists outlined in chapter 2.1 (which includes providing feedback on discrepancies in the rankings) as well as providing input on possible improvements and expansions of the current methodology. The members of the board of experts were carefully chosen based on their national and international expertise and decade-long experience in their respective medical fields as well as their scientific output. Current members of the board of experts are:

### Global Board of Experts



**Prof. Dr. David Bates**  
Professor of Medicine, Harvard Medical School, USA

**Dr. Gary Kaplan**  
CEO, Virginia Mason Health System, USA

**Prof. Dr. med. Christoph Meier**  
Chief Medical Officer, University Hospital Basel, Switzerland

**Dr. med. Jens Deereberg-Wittram**  
CEO, RoMed Kliniken, Germany

**Dr. Eyal Zimlichman, MD**  
Chief Medical Officer, Sheba Medical Center, Israel

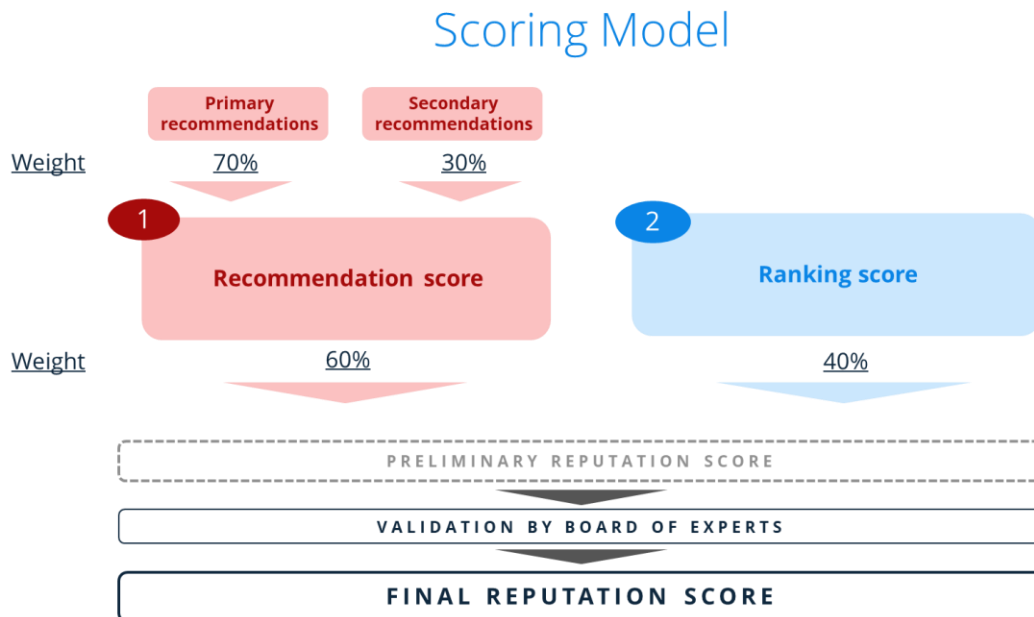
**Prof. Dr. Gregory Katz**  
Chair of Innovation Management & Value in Health, University of Paris Medical School, France

Based on the expert's feedback, a quantitative score for expert opinion was calculated and the recommendation score was adjusted by this score to reflect the validation of the individual rankings.

The expert board also gathers for an annual conference where they have the opportunity to discuss the status quo as well as new ideas and future improvements to the methodology in person.

## 2.3 Scoring Model

The scoring model is based on the recommendation score and the ranking score, and uses different weights for the individual components as shown in this overview:



As shown above, primary recommendations from experts in each medical field account for 70% of each hospital's recommendation score. Secondary recommendations from medical professionals with knowledge in more than one medical field received a weight of 30% towards the recommendation score. The total recommendation score makes up 60% of the **preliminary reputation score**, while the ranking score is weighted 40% towards the preliminary reputation score.

The **final reputation score** of each hospital in a given medical field is the weighted average of the available scores for each hospital, adjusted by the expert score (see chapter 2.2). Based on the final reputation score, hospitals are ranked top to bottom in list. The results of this ranking are displayed in the lists published by Newsweek.

## 3 Disclaimer

The rankings are comprised exclusively of hospitals that are eligible, based on the scope described in this document. A mention in the ranking is a positive recognition based on peer recommendations. The ranking was created through an elaborate process, however, the information provided in this ranking should be considered in conjunction with

other available information about hospitals or, if possible, accompanied by a visit to a facility. The quality of hospitals that are not included in the rankings is not disputed.