

## Science News

*from research organizations*

### New decision model shapes strategies for dealing with public health emergencies

The timely results of a long-term project helps health experts with the allocation of healthcare resources

*Date:* April 20, 2020

*Source:* Aalto University

*Summary:* The efficient allocation of medical resources can be modelled mathematically. The study, which started a few years before coronavirus appeared, offers timely insights for governments and organizations who are faced with an unprecedented healthcare crisis. Specifically, it presents a comprehensive decision model for optimizing the use of alternative tests and treatments on specific population groups, and suggests that even less-than-perfect tests can help improve effective spending limited healthcare resources.

*Share:* [!\[\]\(faf942dc3e59ce8eb64b4ac481eca7e0\_img.jpg\)](#) [!\[\]\(f6b0299e0b5e4340e509b71914970da0\_img.jpg\)](#) [!\[\]\(b5153706f6ea2fc2c42e8803b6804d18\_img.jpg\)](#) [!\[\]\(2b8adb27d8c9518333278b6317e2d8a2\_img.jpg\)](#) [!\[\]\(a190466037967efc7087885259e58e7a\_img.jpg\)](#)

#### FULL STORY

The efficient allocation of medical resources can be modelled mathematically. The study, which started a few years before coronavirus appeared, offers timely insights for governments and organizations who are faced with an unprecedented healthcare crisis. Specifically, it presents a comprehensive decision model for optimizing the use of alternative tests and treatments on specific population groups, and suggests that even less-than-perfect tests can help improve effective spending limited healthcare resources.

Decision scientists have developed models to help governments and policymakers allocate limited healthcare resources. The decision model developed by Aalto researchers accounts for differences between population segments and shows that segment-specific strategies for tests and treatments are crucial for attaining positive health outcomes, especially when there is limited capacity for treatments. 'When we were revising the paper just a few months ago, we never thought how soon the framework would become so relevant' says Professor Ahti Salo Director of the Systems Analysis Laboratory at Aalto University.

**All health outcomes benefit from stopping the disease spreading**

The paper, published in the journal *Decision Sciences*, shows how healthcare resources can be spent to achieve different population-level objectives, such as the "utilitarian" objective (which focuses on maximizing the aggregate health of the whole population) and the "egalitarian" objective (which gives priority to the neediest while limiting differences between segments). The decision model helps policymakers balance these two objectives, and shows how they can be attained by allocating resources accordingly.

The research was carried out before the Covid19 outbreak and the data for illustrating the model is actually about coronary heart disease. As a result, the model is not directly adapted to contagious diseases, although the group will consider this in their future work. However, contagiousness does not alter the relevance of the model regarding testing. 'Adding contagion into our model most likely increases the value of all forms of testing, as all health outcomes benefit from stopping the disease spreading' said Professor Salo.

---

MAKE A DIFFERENCE: SPONSORED OPPORTUNITY

---



## Help Those in Need During Coronavirus

After health concerns, which effect of the pandemic worries you most?

Children and vulnerable populations lacking regular meals

Small business owners losing their livelihood

Our fellow community members losing their jobs

[Sponsored by Postmates](#)

---

### Story Source:

Materials provided by **Aalto University**. *Note: Content may be edited for style and length.*

---

### Journal Reference:

1. Yrjänä Hynninen, Eeva Vilkkumaa, Ahti Salo. **Operationalization of Utilitarian and Egalitarian Objectives for Optimal Allocation of Healthcare Resources**. *Decision Sciences*, 2020; DOI: 10.1111/dec.12448
-

---

Aalto University. "New decision model shapes strategies for dealing with public health emergencies: The timely results of a long-term project helps health experts with the allocation of healthcare resources." ScienceDaily. ScienceDaily, 20 April 2020. <[www.sciencedaily.com/releases/2020/04/200420104850.htm](http://www.sciencedaily.com/releases/2020/04/200420104850.htm)>.

## RELATED STORIES

---

### New Test May Help More Couples Understand Why They Experience Multiple Miscarriages

Apr. 9, 2020 — Approximately 5% of women experience two or more miscarriages, a condition known as recurrent pregnancy loss (RPL). Although genetic testing is important for evaluating RPL, current tests have ... **read more »**

### Connecting Patients With Their Community Could Transform Healthcare

July 25, 2019 — Engaging a wider range of resources to connect patients with organizations within their community can help transform healthcare and improve overall well-being, according to new research. The authors ... **read more »**

### Researchers Examine the Influence of Country-Level and Health System Factors on Nursing and Physician Personnel Production

Nov. 8, 2016 — A key component to achieving good patient outcomes in the healthcare world is having the right number and type of healthcare professionals with the right resources. This is still a large problem for ... **read more »**

### Data-Driven Approach Could Help Improve Allocation of Biomedical Research Resources

Sep. 15, 2015 — A new computational model could help improve the allocation of US biomedical research resources. The tool, called the Research Opportunity Index (ROI), measures disparities between resources ... **read more »**

## FROM AROUND THE WEB

---

*Below are relevant articles that may interest you. ScienceDaily shares links with scholarly publications in the TrendMD network and earns revenue from third-party advertisers, where indicated.*

### **Coaches' Corner: Critical Communication Issues and Strategies in Atopic Dermatitis**

Lawrence F. Eichenfield, MD, [myCME](#), 2019

### **Individualized Management of Challenging Chronic Respiratory Diseases: Cases in Asthma, COPD, and Asthma-COPD Overlap**

Sandra G. Adams et. al., [myCME](#), 2019

### **Innovative HF Delivery Models: Putting Patients at the Center of Care**

David E. Lanfear, MD, [myCME](#), 2019

### **Evaluating the Risk of Major Adverse Limb Events and Antithrombotic Therapy in PAD Patients**

Marc Bonaca et. al., [myCME](#), 2019

### **Evaluating the Risk of Major Adverse Limb Events and Antithrombotic Therapy in PAD Patients**

Marc Bonaca et. al., myCME, 2019

[Is this relapsing remitting MS? How do you know and what will you do?](#) 

Patricia Coyle, MD, myCME, 2019

[Case Study: Suspected VTE Following Radical Prostatectomy](#) 

Eileen McCaffrey, myCME, 2019

[Succeeding in the Management of Heart Failure: The Evolving Role of the Family Practitioner](#) 

Keith C. Ferdinand, MD, myCME, 2019

---

Powered by **TREND MD**



---

## Free Subscriptions

Get the latest science news with ScienceDaily's free email newsletters, updated daily and weekly. Or view hourly updated newsfeeds in your RSS reader:

 [Email Newsletters](#)

 [RSS Feeds](#)

---

## Follow Us

Keep up to date with the latest news from ScienceDaily via social networks:

 [Facebook](#)

 [Twitter](#)

 [LinkedIn](#)

---

## Have Feedback?

Tell us what you think of ScienceDaily -- we welcome both positive and negative comments. Have any problems using the site? Questions?

 [Leave Feedback](#)

 [Contact Us](#)

[About This Site](#) | [Staff](#) | [Reviews](#) | [Contribute](#) | [Advertise](#) | [Privacy Policy](#) | [Editorial Policy](#) | [Terms of Use](#)

Copyright 2020 ScienceDaily or by other parties, where indicated. All rights controlled by their respective owners.

Content on this website is for information only. It is not intended to provide medical or other professional advice.

Views expressed here do not necessarily reflect those of ScienceDaily, its staff, its contributors, or its partners.

Financial support for ScienceDaily comes from advertisements and referral programs, where indicated.

Do Not Sell My Personal Information

