Comparing Outcomes of Antibiotic Drugs and Appendectomy (CODA)

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What makes the CODA trial unique?

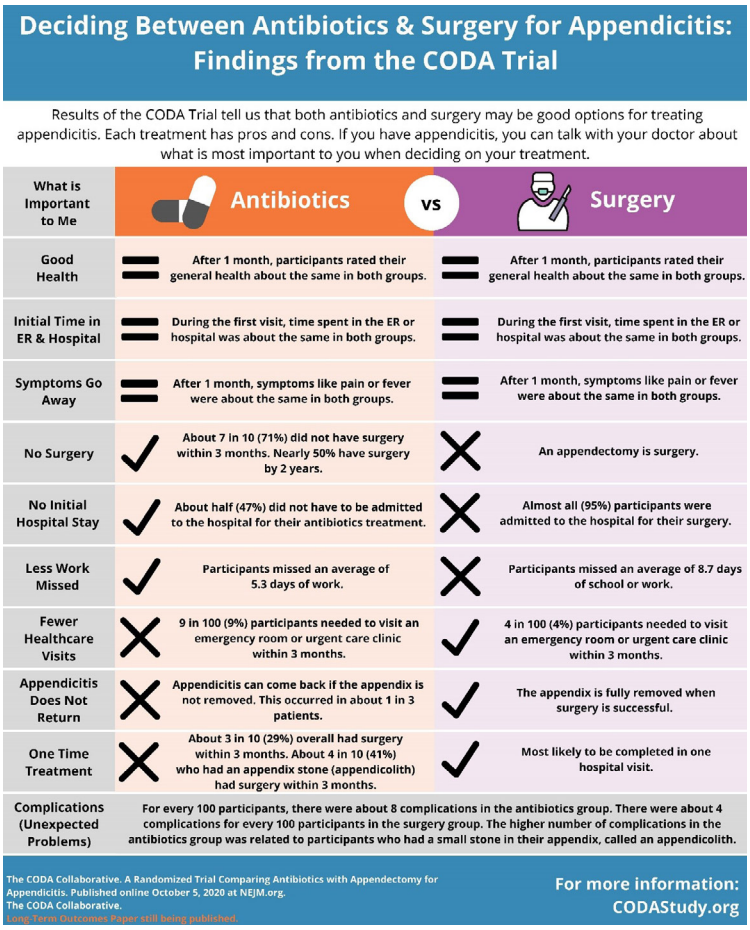
The CODA trial is the largest study of treatments for appendicitis to date and the first ever large-scale trial of treatments for appendicitis in the United States. CODA was designed as a pragmatic trial and launched at 25 different health systems across the US to represent a broad range of patients and healthcare systems. It was conducted in 14 US states as a collaboration of emergency medicine physicians, surgeons, health services researchers, and patient partners. By limiting study exclusions, we recruited a broad group of study participants to try to capture the wide range of appendicitis in the US population. Our randomized cohort included:

- The average age of participants is 38 years, and 24% of participants are over 50;
- 47% of participants identify as Hispanic;
- 37% of participants are women, and 34% speak Spanish as their primary language;
- 40% of participants have commercial insurance, and 18% of participants have Medicaid

Additionally, the CODA trial includes participants with a broad range of appendicitis severity. Prior studies have excluded most patients with the type of appendicitis typically seen in the United States. CODA included nearly all degrees of appendicitis severity, as well as patients who have an appendicolith, which is a calcified deposit or stone in the appendix that is diagnosed by a CT scan. Appendicoliths are seen in ~27% of patients and are suspected of being related to more complicated cases of appendicitis. Since people with an appendicolith have usually been excluded from clinical trials of treatments for appendicitis, the CODA trial is the first to produce data to support this assumption regarding severity.

What are the main findings of CODA so far?

On October 25, 2021, the CODA trial team published its longer-term outcomes in the New England Journal of Medicine. These results report on CODA participants at 4 years following their initial treatment (i.e., antibiotics or surgery). Read the full report of results here.



In the CODA trial, we found that antibiotics were not worse than surgery (called an appendectomy), based on a measure of general health and symptom resolution at 30 days. Approximately 3 in 10 of the participants who took antibiotics had to have an appendectomy by 90 days after starting antibiotics. At 1 year, the rate of appendectomy among those assigned to antibiotics was 40% and about 50% by 3 and 4 years.

We found that participants with a calcified deposit or stone in their appendix, called an appendicolith, were at higher risk for complications than those without an appendicolith. Increased risk of appendectomy in participants with appendicolith was observed mainly in the first 48 hours after randomization, and the association was largely reduced thereafter. Appendectomy was more common among those with appendicolith compared with those without appendicolith at 1 year (52% vs 36%) and at 2 years (54% vs 43%).

Participants in the antibiotics group spent more time in healthcare settings (emergency department, hospital, urgent care clinics, etc.) but reported fewer missed days of work than those in the surgery group.

A BIT OF OUR HISTORY...

How A Surgical Research Powerhouse Is Built-One Chair At A Time

High Impact Collaborations Between Surgery and Engineering

1947

In 1947 **Henry N. Harkins** becomes the first Chair of Surgery at the University of Washington. He was a founding member of the International Surgical Club and editor-in-chief of the journal, *Review of Surgery*.

- He recruited **K. Alvin Merendino** in 1949, who later performed the first open heart procedure on the West Coast in 1956. In 1950, Dr. Merendino becomes director of the Experimental Surgical Laboratory, and initiates a decades-long collaboration with bioengineers developing numerous surgical techniques and medical devices. He later becomes Department Chair in 1964.
- In 1960, **Eugene Strandness** joins the Department. At the rank of Associate Professor in 1966, he first described the clinical applications for the Doppler in diagnosis of peripheral arterial and vascular disease. In collaboration with UW engineers, he creates the duplex scanner in 1979, changing the science and practice of vascular medicine.

Advances in Cardiovascular Research

1983

From 1983—1990, **C. James Carrico** is Chair and makes major faculty recruitments in cardiothoracic surgery and general surgery.

- In 1989 Ed Verrier is recruited and builds our strength in NIH-funded cardiovascular translational research.

Strategic Research Investment and Creation of a New Division

2017

In 2017 **Douglas Wood** becomes the Chair and adds to the Department's research mission, creating the Division of Healthcare Simulation Science, the Center for Surgical Ethics, as well as expanding the Department's research portfolio by recruiting 10+ surgeon scientists with research interests spanning Global Surgery, Oncology, Heart Failure, Trauma, Reconstruction and Pediatrics.

Key Recruits Establish Harborview as an International Leader in Trauma, Burn and Critical Care Research, and Groundbreaking Vascular Research Begins

1975

In 1975 **John A. Schilling** begins as Chair and adds more than 40 new faculty members.

- **Loren Engrav**, **David Heimbach**, **C. James Carrico**, and **Ronald Maier** establish Harborview as an international leader in trauma, burn and critical care research. Our faculty lead major NIH-funded research initiatives including the GLUE grant led by Dr. Maier and several faculty, and in the arena of burns and inflammation, led by **Nicole Gibran**, with next phase work led by many current faculty.
- In 1980 **Alec Clowes** was recruited. He led a powerhouse vascular biology lab with continuous NIH-funding for over 30 years, and his vascular biology research continues today. Dr. Clowes also served as an interim chair preceding Dr. Pellegrini.

Expanding the Breadth of Clinical and Translational Research

1993

In 1993 **Carlos Pellegrini** is appointed as Chair and over the next 20 years grows the Department to more than 100 clinical or research faculty and over 50 APP faculty. Many faculty go on to develop robust clinical and translational research programs in Videoendoscopic Surgery, Simulation Science, Hepatobiliary Research, Global Health and Education. He also supports the establishment the multi-disciplinary Surgical Outcomes Research Center (SORCE) with its focus on improving the quality of surgical care, as well as the Center for Research in Education and Simulation Technologies (CREST), a program devoted to advancing the current state of medical train and patient education.