



## **Small: Life and Death on the Front Lines of Pediatric Surgery**

*Catherine Musemeche*

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**Small: Life and Death on the Front Lines of Pediatric Surgery** Catherine Musemeche

**Winner of the The Writer's League of Texas Discovery Prize, nonfiction**

As a pediatric surgeon, Catherine Musemeche operates on the smallest of human beings, manipulates organs the size of walnuts, and uses sutures as thin as hairs to resolve matters of life or death. Working in the small space of a premature infant's chest or abdomen allows no margin for error. It is a world rife with emotion and risk. Small takes readers inside this rarefied world of pediatric medicine, where children and newborns undergo surgery to resolve congenital defects or correct the damages caused by accidents and disease. It is an incredibly high-stakes endeavor, nerve-wracking and fascinating.

Small: Life and Death on the Front Lines of Pediatric Surgery is a gripping story about a still little-known frontier. In writing about patients and their families, Musemeche recounts the history of the developing field of pediatric surgery--so like adult medicine in many ways, but at the same time utterly different. This is a field guide to the state of the art and science of operating on the smallest human beings, the hurts and maladies that afflict them, and the changing nature of medicine in America today, told by an exceptionally gifted surgeon and writer.

## **Small: Life and Death on the Front Lines of Pediatric Surgery Details**

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Author : Catherine Musemeche

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## From Reader Review Small: Life and Death on the Front Lines of Pediatric Surgery for online ebook

### Jenni V. says

Fetal surgery is fascinating and unimaginable. I understand why no names could be used but using letters instead of pseudonyms (such as "Baby K"), as well as focusing strictly on the operating room with no backstory, made it a little more detached for me. That's probably a good thing, as I would've been a weepy mess if I had been any more invested; I definitely hugged my kids a little closer when reading.

By far, one of the most interesting chapters to me was when she talked about the differences between childhood and adult cancers. There are the obvious physiological differences, along with the difficulties designing and obtaining medical supplies for the tiniest of children. I also didn't realize (going off of her statistics, which I did not independently verify) 60% of children are enrolled in clinical trials versus only 3% of adults. The thing that really made me pause were her observations about the huge advantage children have over adults in regards to how they are cared for. Parents are the most invested caregivers and will rearrange their entire lives to ensure the best care for their children; as she says, "parents have an unique stake in the health of the child, someone they value above all else". If it is a spouse that is ill, they will still do their very best but it isn't the same as caring for a child. Parents note the smallest changes in their child's symptoms that a spouse may miss in the chaos of life. Parents make sure their children eat and drink and take their meds even when they don't want to, spouses may defer a little more.

To contrast, I lost interest when she talked about obesity and moved on from those sections quickly.

Listening to the early days and how quickly something went from an idea to an usable product (only 6 weeks from the time Tom Fogarty first produced a balloon catheter for a new technique of removing blood clots until it was first used on a patient) was almost unbelievable. I understand the needs for trials and regulations but can also understand the huge frustration of knowing something is in the works but won't be available to help your patients for years.

### A Few Quotes from the Book

"Every baby makes a lengthy journey to get to this place we call 'life', but they don't all show up ready for it when they arrive."

"Will the surgeon find a nameable condition within her power to repair? Or will she encounter something not so easily fixed, a diagnosis that sentences the patient to a series of complicated operations, a situation plagued with setbacks and months of hospitalization? Even worse, will she find organs so grossly malformed or incomplete that she can only palliate and close, becoming the messenger of grief to despairing parents in a darkened hallway? The answer, only minutes away, lurks beneath the skin in the shadow of a scalpel poised and ready."

"No matter how small, this most vulnerable of humans is a potential patient, one who has captured the imagination of surgeons dedicated to rerouting gestational detours so a child can have a shot at a normal life."

Find all my reviews at:

<http://readingatrandom.blogspot.com/>

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## Darryl says

*There is no such thing as a routine operation in a baby.*

Dr. Catherine Musemeche is a pediatric surgeon who has been in practice for nearly a quarter of a century after the completion of her rigorous training, and she effectively combines her professional experiences, personal interests, and excellent writing skills in this superb book. In it she discusses the history and heroes of pediatric surgery, the challenges that she and other surgeons face in operating on tiny critically ill infants, current pressing medical issues that affect the practice of pediatricians and pediatric surgeons, and her own successes and failures throughout her career.

Dr. Musemeche provides a brief history of the development of pediatric surgery in the United States as a recognized medical specialty, and the difficulties that the first pediatric surgeons faced in gaining the respect of general surgeons, who fought against the newcomers' encroachment on their territory, and pediatricians, who initially rejected but soon championed and accepted their colleagues into their own medical society, the American Academy of Pediatrics, long before the American College of Surgeons decided to do so. She also honors some of the pioneers of pediatric surgery, including Dr. C. Everett Koop, the first full time pediatric surgeon at Children's Hospital of Philadelphia and the former U.S. Surgeon General; Dr. Stanley Dudrick, whose pioneering work on intravenous nutrition allowed children and adults with compromised gastrointestinal systems to receive sufficient intake for growth and healing via total parenteral nutrition; and Dr. Bob Bartlett, whose work on extracorporeal membrane oxygenation, or ECMO, allowed surgeons to repair formerly lethal congenital cardiac defects and save the lives of the most critically ill children whose hearts and lungs had failed.

The author's own experiences in the operating room are interspersed with the stories of these pioneers, and I found my heart rate increasing as she described several difficult cases involving fragile babies on the brink of death.

Perhaps the most interesting part of the book to the general reader will be the chapters about obesity, medical errors, preventable injuries, and the development of new surgical devices and techniques, most notably the rise of fetal surgery. The most notable and most impressive hero in *Small* is Dr. Barbara Barlow, the first woman to complete a pediatric surgery residency at Babies' Hospital (now Morgan Stanley Children's Hospital) of Columbia University in New York, who worked for many years as a pediatric surgeon at Harlem Hospital, an inner city public hospital that took care of thousands of victims of accidental injuries of children in their homes, and in playgrounds and streets in their neighborhoods. She was the leader of multiple successful efforts to prevent these injuries, and in 2011 she was honored with the Hero Award for contributions to public health by the Centers for Disease Control and Prevention (CDC).

One minor criticism of *Small* would be the absence of diagrams and photographs of the conditions and procedures that Dr. Musemeche describes in the book, although her rich descriptions of them and my medical training allowed me to easily visualize what she saw. However, this is an excellent contribution to the history of medicine and public health, which is a very enjoyable and informative book and one that I would highly recommend to all readers.

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## **LibMomTBI says**

Not specifically TBI.

Dr. Musemeche takes the reader, as though she were walking with you, her white coat and stethoscope swinging, behind the "authorized personnel only" automatic double doors and along the path of significant historical discoveries and events impacting the surgery of children. The title is not too filled with medical jargon and is a compelling read.

This might be too intense for parents with vulnerable children, but the historical perspective may give enough distance so one can appreciate this view from the "other side" of those caring for our babies (not matter how big / old). If you have suffered through a serious illness with your child, this book will resonate. If you are interested in medical non-fiction, this is well-written and engaging right through to the last chapter where, frankly, I was disappointed it ended.

TBI parents will find so many of the experiences feel familiar, even if the conditions aren't.

Table of contents with my comments:

The thread of life (DNA, tiny, communicating) - how absolutely tiny, tiny preemies are, talking with parents  
Bunny rabbits, Boston, and babies (basic equipment like trachs, IVs) - developing devices specifically for pediatrics

The shortcut to survival (intestinal defects / malnutrition) - TPN, research (and how today's regulations make it more difficult, but safer, to explore options)

Inside out (abdominal wall defects) - "nature of materials" and developing techniques to make the horrific manageable.

Going to extremes (ECMO) - so close to home: used experimentally, saved my adult son's life unlike the child in the book.

Battlegrounds to playgrounds - (safety, public health issues) - One surgeon who truly made a difference in a creative, non-medical way

The weight of the future (obesity)

Something to celebrate (cancer) - hope, optimism in the face of dismal predictions, resonated for me for brain injury parents

Tiny tools for tiny bodies (technology, rare diseases, cost/benefit)

Lessons (complications, errors)

Small (fetal surgery) - fetal / pediatric research vs. adult

The lost and found (organs / tissue engineering)

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## **Pr Latta says**

Small takes the reader behind the "authorized personnel only" automatic double doors and along the path of significant historical discoveries and events in a readable (that is, not too filled with medical jargon) and compelling fashion.

This might be too intense for parents with vulnerable children, but it gives the view from the "other side" of those caring for our babies (not matter how big / old). If you have suffered through a serious illness with your child, this book will resonate. If you are interested in medical non-fiction, this is well-written and

engaging right through to the last chapter where, frankly, I was disappointed it ended. I'm glad Musemeche's new book, *Hurt*, is out.

An excellent title for high school or college students contemplating a career in medicine (that classic required non-fiction summer read).

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### **Wpw says**

**SMALL** is a riveting, poignant and fascinating account of what it is like to be a pediatric surgeon. The reader is witness to pivotal moments in the development of a relatively new specialty, and to some degree is able to tag along, in an intimate and voyeuristic association with the narrator, as she grows from a highly resourceful med student to a gifted pediatric surgeon.

Interspersed among glimpses of the author's own professional development are captivating stories of notable pediatric surgeons as they experience struggle, invention, heartbreak, loss, public service, when treating patients who are "one-hundredth the size of the average human."

What is unusual about Musemeche's writing is its surgical precision – her clarity of explanation, selectivity in the choice of topics for her dozen chapters (which, incidentally read like short stories and provide measured amounts of somewhat foreign but highly digestible information) and choice cuts of descriptive passage.

This is a must-read for all of us.

My advice: Start **SMALL** immediately.

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### **Tamar says**

I thoroughly enjoyed **Small**. Musemeche does a fabulous job introducing the reader to the world of pediatric surgery and all the complications of working on a child, who contrary to popular belief, is not a miniature adult. My favorite part was reading about all the advances in biomedical engineering over the years - Musemeche is great at providing a history of medical devices - the various case studies of children, and the discussion of public health and prevention. My one quibble with this book is that sometimes it veers into territory that seems more appropriate for adult surgery or general pediatrics - which is not actually a problem, but just seemed a bit off topic. An excellent read for those who enjoy science writing and learning about an interesting specialty in medicine.

Note: I received this book through LibraryThing's EarlyReviewers Program.

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### **Ferris says**

From the perspective of a lay person who has long been fascinated by all things medical, this was an absolutely fascinating read. I have taken for granted the notion of the existence of such a thing as a pediatric surgeon, yet had no idea that it is a relatively recent development, in fact, still coming into its own. The book

presents case studies which in and of themselves are amazing, but the cases serve as the platform to the truly engrossing brief history of pediatric surgery, the differences between a child's body and an adult's (significantly more than just size}, the hurdles in the way of creating instruments and devices for use in these tiny bodies, the ethics and politics in this field of endeavor, and above all, the heroic ingenuity, courage, and determination of the innovators in this field. This is a book which is definitely accessible to the lay person and it is also a riveting education for anyone who is interested in the medical aspects of fetuses, preemies, and children in general. Excellent read!

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### **Jan says**

A very engaging read on the past 60 years of pediatric surgery as told to us by Dr. Catherine Museemeche, a pediatric surgeon. She her own cases and those of others in the field to take us on the journey. Her work is full of hope, heartbreak, and the science of pediatric surgery both past and present. Dr Museemeche also provides us a look at what the future might hold and closes her book acknowledging the inspiration that the children provide, and the limitless power of love and courage parents show in the face of grave circumstances.

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### **Sandy Yaklin says**

SMALL is a book that delves into part of the reason why most of us no longer personally know what it feels like to bury a child.

I picked up SMALL because I am a certified hospice and palliative care nurse (CHPN) and I have sometimes held and comforted a dying baby. Holding a child who will soon be leaving this world marks your soul in a way that is hard to explain. I read SMALL because I wanted to know more about how to handle the searing, poignant pressure that comes from walking through the Valley of the Shadow of Death with a baby and his family.

Dr. Museemeche uses well-wrought words and sentences to draw the reader into the drama of innovation and chutzpa that has allowed pediatric surgeons to keep small patients alive by cutting them open and sewing them back up. SMALL had my attention from the opening sentence: "Stitch,' I say to the scrub nurse."

Dr. Museemeche details the history of how pediatric surgeons began saying to Death: "Not today. You can't have this baby." SMALL reads more like a thriller than a history lesson. She doesn't just tell the story of heroic surgeons; she opens the rarefied world of the pediatric operating room, describing what it feels like to be a surgeon waiting for a scrub nurse to thread a needle with suture while a tiny baby lies helpless and in desperate need of the healing that stitch can bring. Dr Museemeche tells of specific surgeries she has performed, interweaving the complex history of innovation and invention that has made it possible to save her patients. She also illuminates what it feels like to speak the tender and painful words: "I am your baby's surgeon...I must talk to you, and it is not going to be easy."

SMALL is a well written book that chronicles the beautiful daring of pediatric surgeons. It tells part of the story behind why so few of us know what it feels like to hold a dying child.

