1-Page Book Summary of The Checklist Manifesto

Today we can do amazing things: we can predict hurricanes and tornadoes, we can build skyscrapers of all shapes, and we can save people from heart attacks and severe injuries that would have been fatal a few decades ago.

Yet highly trained, experienced, and capable people regularly make avoidable mistakes. Some can be fatal. After experiencing his own mistakes and observing those of colleagues, Boston surgeon Atul Gawande set out to learn why smart people make avoidable errors and how to prevent them.

The result is The Checklist Manifesto: How to Get Things Right, in which Gawande proposes a simple solution: a checklist. The book chronicles his exploration of the uses and benefits of checklists in many fields, including aviation, construction, and medicine.

While not a how-to manual, his book builds the case for checklists and makes a plea for widespread adoption of checklists as a safety net for human fallibility.
He argues that we fail to get simple things right because in numerous professions — for instance, medicine, engineering, finance, business, and government — the level and complexity of our collective knowledge has exceeded the capacity of any individual to get everything right.

Most professions, especially medicine, have traditionally responded to failure by requiring more training and experience. Training of medical personnel, police, engineers, and others is more extensive than ever. But while training and experience are important, expertise can't eliminate human fallibility. What's needed is a different strategy for preventing failure that takes advantage of knowledge and experience but also compensates for human flaws. The solution is a checklist.

**Increasing Complexity**

To understand how easy it is to make mistakes, despite our ability as humans to accomplish amazing things, consider how complex medicine has become as it has advanced.

An Israeli study several decades ago showed that the average ICU patient required 178 actions or procedures a day. We have a greater-than-ever chance to save someone who's seriously ill, but it requires both deciding the right treatment and ensuring that 178 tasks are done correctly each day. There's as much chance to harm a patient as to help.

In complex environments, checklists can help to prevent failure by addressing two problems:

1. Our memory and attention to detail fail when we're distracted by more urgent matters.
2. People have a tendency to skip steps even when they remember them.

Checklists protect against failures because they remind you of the minimum necessary steps by spelling them out. They allow you to verify each step while also establishing and instilling a performance standard.

**The Aviation Industry Turns to Checklists**

In 1935, the Army Air Corps asked airplane manufacturers for a new long-range bomber. Boeing's Model 299, which exceeded specifications, was favored to win. However, during a flight competition held by the Army in Dayton, Ohio, the Boeing model crashed, killing two crew members.

The plane was much more complicated than previous aircraft — the pilot had many more steps to follow and forgot to release a new locking mechanism on the elevator and rudder controls. To prevent future crashes, Boeing's test pilots came up with a checklist that fit on an index card, with step-by-step checks for takeoff, landing, and taxiing. Using the checklist, pilots went on to fly the bomber, which became the B-17, 1.8 million miles without incident. Checklists have since become essential in aviation.

**World Health Organization Checklist**

In 2006, Gawande assisted the World Health Organization (WHO) in solving a problem: Surgery was increasing rapidly worldwide, but surgical patients were getting unsafe care so often that surgery was a public danger. WHO needed a global program that would reduce avoidable harm and deaths from surgery.

Gawande and his team came up with a 19-point checklist. Results of a pilot study at eight hospitals worldwide using the Safe Surgery Checklist exceeded expectations:

- Rates of major complications for surgical patients in all eight hospitals fell by 36 percent. Deaths fell 47 percent.
- Infections fell by almost half.
- The number of patients having to return to the OR because of problems fell by a quarter.

Since the results of the WHO checklist were published, more than a dozen countries pledged to implement checklists. By the end of 2009, about 10 percent of U.S. hospitals and 2,000 worldwide had implemented or pledged to implement the checklist.

**Creating a Checklist**

Boeing's flight deck designer, Daniel Boorman, is an expert on checklists. Before creating a checklist, he recommends two things:

1) Define a clear "pause point" or logical break in the workflow at which the checklist is to be used.

2) Decide whether to create a Do-Confirm list or a Read-Do list.
To use a Do-Confirm checklist, team members perform their jobs from memory. Then they stop and go through the checklist and confirm that everything that was supposed to be done was done. To use a Read-Do checklist, people carry out the tasks as they read them off, like a recipe.

Once you've chosen the type of checklist, follow these...

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Here's a preview of the rest of Shortform's The Checklist Manifesto summary:

The Checklist Manifesto Summary Introduction

In the 21st century, we can do things that were unthinkable not long ago. We can predict hurricanes and tornadoes, we can build skyscrapers and buildings of all shapes, and we can save people from heart attacks and severe injuries that would have been fatal a few decades ago.

Yet highly trained, experienced, and capable people regularly make avoidable mistakes. Some can be fatal. After experiencing his own mistakes and observing those of colleagues, Boston surgeon Atul Gawande set out to learn why smart people make avoidable errors and, more importantly, to find a way to prevent them. The result is The Checklist Manifesto: How to Get Things Right, in which Gawande proposes a simple solution: a checklist.

In a 1970s essay on human fallibility, Samuel Gorovitz and Alasdair MacIntyre argued that in some cases we fail due to “necessary fallibility” — because we're trying to do something humans are incapable of. Much of the universe is unknown to us; there are limits to what we can know and do.

Yet we also fail frequently in areas where we have control. Gorovitz and MacIntyre argued there are two reasons:
- Ignorance or lack of knowledge.
- Ineptitude, meaning we have the knowledge, but don’t apply it correctly.

Mistakes due to ignorance can be addressed with more education and experience. But knowledge doesn’t make a difference if we fail to apply it or do so incorrectly. An experienced meteorologist can miss signs of a storm's likely behavior, or a skilled doctor can forget to ask a patient a critical question.

Ineptitude in Action

Surgeons like Gawande often tell each other stories of mistakes and near misses, puzzling over how they could have missed seeing something that turned out to be vital. For instance, a surgeon friend told Gawande’s story about treating a drunken patient with a stab wound received at a Halloween costume party. The emergency department determined the two-inch-wide abdominal wound wasn’t an extreme injury although he needed surgery, so they parked the patient while the operating room was readied.

Then a nurse...
The Checklist Manifesto Summary Chapter 1: Managing Extreme Complexity

To understand how easy it is to make mistakes, despite our ability as humans to accomplish amazing things, consider how complex medicine has become.

The World Health Organization's international classification of diseases (ninth edition) lists over 13,000 different diseases, syndromes, and injuries. There are treatments for nearly all of them, but there are different, complicated steps for handling each one. Doctors can choose among more than 6,000 drugs and 4,000 medical and surgical procedures.

A Boston clinic affiliated with Gawande's hospital began with a straightforward goal in 1969: to provide the full range of outpatient services its patients might need throughout their lives. Delivering that care led to the construction of more than twenty facilities and the employment of six hundred doctors and one thousand other health professionals covering fifty-nine specialties.

In a typical year, each doctor at the clinic evaluated an average of two hundred and fifty different diseases and conditions in patients who had more than 900 other medical issues. Each doctor prescribed some three hundred medications, ordered more than a hundred different tests, and performed an average of forty different kinds of office procedures. With new genetic findings, types of cancer, diagnoses, and treatments being developed constantly, electronic records systems can't keep up, and many diagnoses have to be listed as "other."

More Opportunity for Error

Hospital care is increasingly complex as well, especially critical care performed in intensive care units or ICUs. Fifty years ago, ICUs were uncommon. Today, thanks to our ability to save people from so many things that were once fatal, critical care is an increasingly large part of what hospitals do. Over a normal lifespan, most people will end up in an ICU at some point.

An Israeli study several decades ago showed that the average ICU patient required 178 actions or procedures a day. We have a greater chance than ever before to save someone who's seriously ill or injured, but it requires both deciding the right...

The Checklist Manifesto Summary Chapter 2. The Benefits of Checklists

In complex environments, checklists can help to prevent failure by addressing two problems:

1) **Our memory and our attention to detail fail when we're distracted by more urgent matters.** For instance, if you're a nurse, you might forget to take a patient's pulse when she's throwing up, a family member is asking questions, and you're being paged.

   Forgetfulness and distraction are especially risky in what engineers call all-or-none processes, where if you miss one key thing, you fail at the task. For instance, if you go to the store to buy ingredients for a cake and forget to buy eggs, you can't make the recipe because it wouldn't work without eggs. The consequences are more serious if a pilot misses a step during take-off or a doctor misses the key symptom.

   **Checklists protect against such failures because they remind you of the minimum necessary steps** by spelling them out. They allow you to verify each step while also establishing and instilling a performance standard.

2) **People have a tendency to skip steps even when they remember them.** In complex processes, certain steps don't always matter, so people may play the odds and skip them. For instance, if measuring all four of a patient's vital signs (pulse, blood pressure, temperature, and respiration) only rarely detects a problem, you might become lax about checking everything.

**Boeing Discovers Checklists**

In 1935, the Army Air Corps asked airplane manufacturers for a new long-range bomber. Boeing's Model 299, which exceeded specifications, was favored over models by Martin and Douglas. However, during a flight competition held by the Army in Dayton, Ohio, the Boeing model stalled at 300 feet and crashed, killing two of five crew members.
The plane was much more complicated than previous aircraft — the pilot had more steps to follow and forgot to release a new locking mechanism on the elevator and rudder controls. After the accident, a newspaper called the new model “too much airplane for one man to fly.” The Army Air Corps chose Douglas's smaller design, and Boeing took a big...

**The Checklist Manifesto Summary Chapter 3: From Simple to Complex**

The successful experiences of using checklists in aviation decades ago suggest they could be applied widely. They protect even the most experienced from making mistakes in a whole range of tasks. They provide a mental safety net against typical human lapses in memory, focus, and attention to detail.

Professors Brenda Zimmerman and Sholom Glouberman, who study complexity, defined three kinds of problems: simple, complicated, and complex.

- **Simple**: An example of a simple problem is baking a cake from a mix — there's a recipe and a few techniques, but once you've learned them, following the recipe usually works.

- **Complicated**: An example of a complicated problem is sending a rocket to the moon. Complicated problems can be broken down into smaller problems. Solving the problem involves many people, teams, and specialists. Unexpected issues pop up, but you can learn, repeat the process, and perfect it. Timing and coordination are key.

- **Complex**: An example of a complex problem is raising a child. Every child is unique. You learn from raising one child, but the next child may require a different approach. With complex problems like raising a child, the outcome is uncertain. Yet it's possible to raise a child successfully.

In classifying the three problems described so far in this book — the bomber crash of 1935, the issue of central line infections, and the rescue of a drowning victim — the key problem and solution in each case were simple:

- To avoid crashing the bomber, focus on the rudder and elevator controls.
- To reduce central line infections, maintain sterility.
- To saving a drowning victim, be ready to perform a cardiac bypass

All could be resolved by using a simple tool to compel the needed behavior — a checklist. We're constantly confronted with similar simple problems that can be mitigated by checklists — for instance, a nurse's failure to wear a mask while putting in a central line or a surgeon's failure to recall that one cause of a cardiac arrest could be a potassium overdose.

But can checklists be...

**The Checklist Manifesto Summary Chapter 4: Empowerment and Checklists**

A striking feature of the building industry's strategy for handling myriad steps correctly in complex situations is empowerment.

That's not the way complexity and risk are usually handled elsewhere. Most authorities centralize power and decision-making via a command-and-control model. That's one way of using checklists: to dictate instructions to workers down the line so they do things in a prescribed way.
A construction schedule checklist works that way — but it’s paired with the submittal schedule (the one that establishes communication processes), which is based on a different philosophy of power for solving non-routine problems. The submittal schedule pushes decision-making out from the center. **People have the ability to make their own judgments based on their experience and expertise, but they’re required to communicate with others and take responsibility.**

For example, because determining whether every detail is correct requires more knowledge than any one person can possess, building inspectors mostly make sure that builders have the right checks in place and require them to sign affidavits attesting that they have ensured the structure meets code requirements. They spread the authority and responsibility.

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**Why Empowerment is Important**

**When authorities don’t relinquish power in a complex situation, they’re likely to fail.** The response when Hurricane Katrina hit New Orleans on Aug. 29, 2005 illustrates both how centralized power fails and how empowerment works in such situations.

(Shortform note: While the Katrina example doesn’t demonstrate the use of checklists, it suggests why incorporating empowerment and communication into checklists, as the building industry does, is key to checklists’ success.)

Initial reports after the hurricane made landfall in New Orleans at 6 a.m. were falsely reassuring because, with power and cell service down, they were extremely incomplete. Director Michael Brown and Federal Emergency Management Agency (FEMA) announced the situation was mostly under control.

But by afternoon the levees had been...

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**The Checklist Manifesto Summary Chapter 5: The WHO Checklist Project**

In 2006, the World Health Organization (WHO) asked Gawande to organize a group to solve a problem: Surgery was increasing rapidly worldwide, but surgical patients were getting unsafe care so often that surgery was a public danger. WHO sought a global program that would reduce avoidable harm and deaths from surgery.

Data from 193 countries showed that the volume of surgery worldwide had skyrocketed by 2004. Surgeries exceeded totals for childbirth, but the death rate for surgery was ten to one hundred times higher than for childbirth. At least seven million people a year were disabled by surgery, and one million died.

The growth was due in part to improved economic conditions, which increased people’s longevity and therefore their need for surgeries. Health systems were greatly increasing the number of surgical procedures performed and the types of surgeries. There were more than 2,500 different surgical procedures. Safety and quality of care for surgical patients was becoming a big issue everywhere.

Surgery is often life-saving, even when performed under dire or substandard conditions. But failures leave millions disabled or dead. In the U.S. alone, when Gawande began the WHO project, at least half of surgical complications were preventable, and there were a variety of causes and contributing factors. He set out to find examples of public health interventions and campaigns that had succeeded. He found several examples, all of which shared three characteristics: they were simple, their effects were measurable, and the benefits could be applied elsewhere.

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**Simple, Measurable, and Applicable Solutions**

A U.S. public health worker in Pakistan came up with a way to reduce deaths, infections, and diseases among children in poor areas of Pakistan, with a high level of illiteracy, overcrowding, open sewers, and contaminated water.

The health worker provided soap donated by Proctor & Gamble along with **simple guidelines describing six situations in which people should use it and instructions on hand-washing techniques.** The soap was a...
The Checklist Manifesto Summary Chapter 6: Creating an Effective Checklist

While it should be simple to use, developing an effective checklist isn't a simple task. It requires analysis, real-world testing, and revision.

Daniel Boorman, flight desk designer for Boeing, is an expert at developing checklists. He's analyzed thousands of crashes and mishaps in an effort to figure out how to create checklists that prevent human errors.

Boorman's checklists for Boeing aircraft fill a thick spiral-bound handbook with tabs. Yet each checklist is brief, consisting of a few lines on a page in large, easy-to-read type. Each applies to a different situation; together they encompass a range of scenarios. At the beginning of the notebook are what pilots call "normal" checklists for routine operations — for instance, steps to take before starting the engines. They're followed by "non-normal" checklists for emergency situations such as engine failure, smoke in the cockpit, or an insecure door.

Over two decades, Boorman has learned how to make checklists that work. There are key differences between bad and good checklists.

Bad checklists are:

- Unclear and imprecise.
- Too long, impractical, and difficult to use.
- Created by pencil pushers who lack experience doing what their checklists dictate.
- Overly detailed. They try to spell out every single step, as if the users are clueless.
- Mind-numbing, rather than engaging.

Good checklists:

- Are precise, efficient, concise, practical, and easy to use even in the most difficult circumstances.
- Don't try to spell out everything. They provide reminders of only the most important steps that even an experienced professional could miss.

How to Create a Checklist

(Shortform note: also see the Appendix: A Checklist for Checklists.)

Before creating a checklist, decide two things:

1) Define a clear "pause point" at which the checklist is to be used (unless the moment is obvious, such as when something malfunctions).

2) Decide whether to create a Do-Confirm list or a Read-Do list.

To use a Do-Confirm checklist, team members perform their jobs from memory. Then...

The Checklist Manifesto Summary Chapter 7: WHO Tests a Checklist

With information from Boorman on how to create an effective checklist, Gawande and his team created and began testing a Surgical Safety Checklist for WHO.

They chose a Do-Confirm approach to give people greater flexibility in performing their tasks, but had them stop at key points to confirm they hadn't missed any steps. When researchers tested the checklist in a simulated surgery, they realized they hadn't designated who was supposed to pause things and launch the checklist. They decided to have the circulating nurse call the pause rather than the surgeon, to send the message that everyone is responsible for the overall well-being of the patient in surgery.
They had a team in London try the checklist, then one in Hong Kong, and continued to improve it. The final WHO checklist listed 19 checks with three pause points and it took two minutes to go through. The checks were divided as follows:

- Before anesthesia: seven steps, such as checking patient consent, medication allergies, and availability of replacement blood.
- After anesthesia and before making the incision: seven more checks, including making sure team members have been introduced by name and role and have discussed aspects of the operation.
- Before the patient leaves the OR: five checks, including an accounting of all surgical equipment and a review of plans for the patient’s recovery.

Next was a pilot study of the Safe Surgery Checklist in eight hospitals around the world.

The researchers chose a diversity of hospitals, rich and poor, because failures can happen anywhere.

To establish a baseline, they collected data on current complications and death rates at the test sites. Of 4,000 patients, 400 had developed major complications from surgery and 56 died.

About half the complications involved infection, and a quarter involved failures that required a return to the OR to fix something or stop bleeding. Complication rates ranged from 6 to 21 percent, which indicated room for improvement everywhere.

They began implementing the checklist in the pilot hospitals in spring 2008. To...

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**The Checklist Manifesto Summary Chapter 8: Heroism in Medicine and Aviation**

If someone discovered a new drug that reduced complications from surgery as much as the checklist did in the pilot study, it would be rushed to the market. Competitors would start making better versions. If the checklist were a medical device, every surgeon would want it.
Since the results of the WHO checklist were published in early 2009, more than a dozen countries pledged to implement checklists. By the end of 2009, about 10 percent of U.S. hospitals and 2,000 worldwide had implemented or pledged to implement the checklist.

However, since this early enthusiasm, it's proven more difficult to persuade doctors to change their Lone Ranger culture to one of teamwork, starting with checklists. If they did, good checklists could become as important for them as stethoscopes (which, unlike checklists, have never been proven to improve patient care).


Being a test pilot was extremely dangerous when the job began — pilots needed courage and an ability to improvise: the right stuff. But as knowledge and complexity of flying grew, and pilots began using checklists and flight simulators, the emphasis shifted from grandstanding to safety, effectiveness, and teamwork in high-risk, complicated situations.

A similar shift is occurring in medicine and other fields as complexity demands new approaches, including checklists. Checklists don't replace the need for skill, boldness, and courage — they enhance these qualities by improving focus, making sure you have critical information when you need it, and minimizing human error. What's needed in today's complex world is an updated definition of heroism. Again, aviation offers a model.

**Redefining Heroism**

On Jan. 25, 2009, US Airways Flight 1549 left La Guardia Airport with 155 on board, hit a flock of geese, lost both engines, and crash-landed in the icy Hudson River. Investigators later called it the most successful ditching in aviation history. Pilot Chesley B. "Sully" Sullenberger III was hailed as a...

**The Checklist Manifesto Summary Chapter 9: Saved by a Checklist**

In 2007 as soon as the Safe Surgery Checklist took shape, Gawande began using it in his surgeries. Hardly a week went by without the checklist enabling the team to catch something they would have otherwise missed.

For instance, in one week, there were catches in five cases, including:

- A patient hadn't gotten the antibiotic she should have.
- The surgeon learned of a breathing risk at the last minute.
- The team discovered drug allergies, equipment problems, confusion about medications, and labeling mistakes.

In another case, the checklist saved the patient's life. Gawande was performing surgery to remove a man's adrenal gland because of a tumor. He made a...

**The Checklist Manifesto Summary Appendix: A Checklist for Checklists**

Creating a checklist involves three phases, each with key steps, including the following.

**Development**

Establish clear, concise objectives. Each task you include should be:

- A critical safety step that is easily missed.
- A step not covered by other means.
- Actionable, requiring a specific response.
Designed to be read aloud. Also, include items to improve communication among team members. Involve team members in creating the checklist.

**Drafting**

The checklist should:

- Use logical breaks in the workflow (pause points). There should be fewer than ten items per pause point.
- Use simple sentences and language.
- Have a title reflecting its objectives.
- Have a simple, uncluttered, and logical format.
- Fit on one page.
- Minimize the use of color.
- List the date of creation or latest revision.

The...

**Shortform Exercise: Applying a Checklist**

Checklists help to prevent mistakes because: 1) our memory and attention to detail tend to fail when we're distracted by more urgent matters and 2) we have a tendency to skip steps even when we remember them. Consider how you might use checklists in your everyday life.

Think of an important task you do regularly, such as changing the oil or doing other vehicle maintenance, that requires multiple steps. Think of a time when you forgot or skipped a step. What was the result?

**Shortform Exercise: Checklists at Work**

Checklists are widely used in the construction and aviation industries, as well as. Also, the book describes uses in medicine, finance, and in the restaurant industry. The author argues they’re applicable in virtually any field, but are underutilized. Consider how you might use checklists to improve your effectiveness at work.

Do you or anyone else at work use checklists in your occupation to improve outcomes for customers? If not, what are some ways they could be incorporated? What would the benefits be?

**Shortform Exercise: Make a Checklist**

Checklists should be short, clear, and contain the “killer” steps (the ones with the greatest consequences if you miss them) as well as routine steps you might miss. Create a checklist to increase the effectiveness of your routines at work or at home.
Think of a task that you or others perform at home or at work that is error-prone (if you like, you can use the example you chose for one of the previous exercises). Describe what a checklist for this task would look like — define the task, determine the pause points or logical breaks in the workflow, and the steps to be taken after each pause.

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