

“So You Want To Work In Central Sterile?” By Pamela Caudell RN, CNOR,  
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- **Objectives:** The reader will have an understanding of the role of a CS employee in the hospital.
- The reader will understand the importance

of the CS employee to the delivery of safe patient care.

- The reader will understand the functions performed by the CS employee.

You are just out of school and don't want to work in McDonald's or Burger King. You want to go to college but not just yet. There is an ad in the paper for someone to work in Central Sterile at the local hospital with no experience required. So you put on your best shirt and pants, fill out an application, do the interview thing and amazingly enough you get hired. Now what? You think to yourself, “self, what exactly is Central Sterile and what am I going to do there”? Fortunately for you, there is someone in the Central Sterile area that likes to teach. Your first day there, he/she starts to precept you with all the basic information you will need to work in Central Sterile.

You will be taught the five basic divisions of Central Sterile starting with what Central Sterile is and progressing thru decontamination, processing (inspection, assembly and packaging), sterilizing, sterile storage and distribution. You and your preceptor will go over each of these areas individually until you feel comfortable with the knowledge before you go on to practical training.

She will probably start out by teaching you the very basics. What **is** Central Sterile and what does it do in the hospital? Central Sterile is the department within a health care facility in which both sterile and non-sterile equipment and medical/surgical supplies are cleaned, prepared for sterilization, processed, sterilized, stored and issued for patient care. Most of these items are used in direct patient care. Which means, if you don't care for these items in the appropriate fashion, someone can become ill or infected with a disease. You will also learn that Central Sterile (CS) did not evolve until the early 1920s. Until that time most of the different nursing units took care of their own med/surg supplies. The Misericordia Hospital (now Mercy Catholic Medical Center) in Philadelphia is credited with being the first to establish a complete and separate area for sterilizing supplies. The first sterilizer was invented in the mid 19<sup>th</sup> century. Charles Chamberland, who was a student of Louis Pasteur, developed the first sterilizer and it looked very much like a large pressure cooker, imagine that.

The Central Sterile is arguably the most important department in the hospital. Think about it. Without your diligence to cleaning and sterilizing of all the used equipment and instruments in the

hospital, the chances of patients having the appropriately cleaned and ready to use equipment is non-existent. Can you imagine an OR without sterile instruments, or an ER without the proper equipment and supplies? Something else the CS department does for the rest of the hospital is provide consulting services, in-service educational programs and occasionally a review of their policies and procedures to make sure the correct way of doing things has been documented. As your preceptor points out to you, there are many units that really do not understand the processes of sterilization so it will become your job, once you become proficient, to teach others what they need to know about sterilization. So you see, the job you have aspired to is really an important one.

As your preceptor continues to talk, two things start to happen; first, you have the feeling that you are in **way** over your head, but secondly, you start to feel that this job may just be more important than you first thought. Hey, it might even be something you want to do for the rest of your life, imagine that!

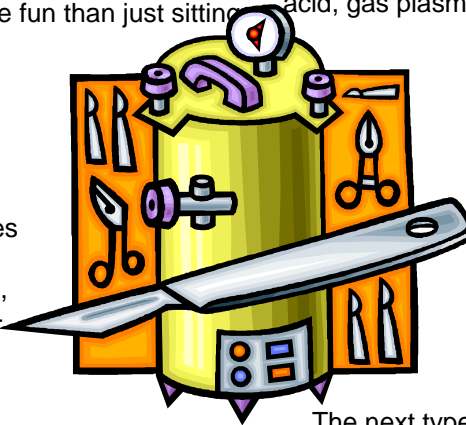
Once you have learned the basics of Central Sterile, you will begin to learn about the individual areas and how each of them has their own importance and how each fits together to give you a completely sterile product for use in direct patient care.

Your preceptor would have you read about the different areas first before you actually had hands on. This would involve the different policies and procedures that each CS department uses, which are mainly taken from both the AORN Standards of Practice as well as the AAMI Guidelines and the regulatory boards such as OSHA, JCAHO, FDA and the EPA.

That ends week one and your head is so full of information, you're not sure you will remember it all. And to beat it all, starting Monday, you learn about decontamination and chemicals. As you approach the next week with trepidation, your preceptor smiles and says it won't be that bad. Decontamination is defined as the area that all reusable equipment, instruments and other supplies are cleaned in order to make them safe to handle. In other words, the supplies that are used by the hospital are returned to decontamination with germs and other debris on them and you are responsible for making them safe enough for the rest of the hospital, including yourself, to handle with bare hands. In order to protect yourself against unknown germs and virus that are lurking on the used equipment, you must first protect yourself. This protection is called personal protective equipment or PPE for short. PPE consists of surgical scrubs that are laundered by a hospital facility, hair covering, shoe covers, safety glasses or a full-face shield, an impervious gown or apron and gloves. To yourself, you think that this is not the way to get a girl but you don't say anything out loud. Next your preceptor starts to talk about cleaning agents like detergents. Isn't detergent something your mother uses to wash clothes, you ask your preceptor? She smiles and says it's not quite the same thing and goes on to explain that the detergent used to wash clothes is a soap that is alkaline and could cause pitting and corrosion on certain types of surgical instruments. Soap can also leave a film

that will interfere with germicidal action. The detergent your preceptor is talking about breaks down fat, oil and grease and causes soil to break into fine particles that can be suspended rather than reattaching themselves to the instrument being cleaned. She goes on to talk about things called antiseptics and disinfectants as well as other chemicals that can be used as sterilants. But you can hardly keep your eyes open. You realize that you are going to have to study a lot harder than you thought to learn all that your preceptor is trying to teach you. Toward the end of the week, Ms. Preceptor takes you into the decontamination department and you get dressed in the appropriate PPE and you start to learn about the machinery used to make something clean from something dirty. She explains the difference between a washer/decontaminator and a washer/sterilizer. You actually get to use the cart washer. And that big ultrasonic thingy was a gas. When she had you stick your hand into it to feel the ultrasonic waves, that was cool. Of course, she explained how everything worked and you started to feel excited and interested again. Now this was a lot more fun than just sitting in a classroom. So much for week two. On to week three.

This week you start to learn about the instruments themselves and how they are divided into certain key areas or categories. The first of these categories includes handheld, non-powered surgical instruments that are used for cutting, clamping, retracting, chiseling, holding and manipulating bone or tissue. The second category includes those instruments that are powered by electricity, batteries, compressed gas and lasers, for example, saws, drills or cauteries. The third group contains those instruments that are used endoscopically or via a telescope. Instruments that are used to look inside the bladder or on a video monitor would fall into this category. You also start to learn about the names of the different instruments and what their function is as well as what sizes they come in. For instance, you learn that a forceps is anything that grasps tissue, sponges or dressings. That they can be locking or non-locking and be many different lengths depending on the use. Ms. Preceptor also teaches you the structure of each instrument so that you know which parts are the box link, the jaw, what the shank is, the ratchet mechanism and the finger rings. She gives you a book of instruments for you to match names with the instruments she gives you for demonstrations. You are instructed on how to examine each instrument for cracks in the box links, any corrosion on the instruments, that the scissors still cut and the needle holders hold needles. Something else you will be taught is how to look at the endoscopic instrumentation and check for insulation problems and that the endoscopes themselves are not foggy. It is also important to check the light cords to ensure that the light fibers are not being broken and still carry a sufficient amount of light. After adding instrumentation to your list of things to study, you are very glad to see the weekend come. You can't wait to see what the next week holds. When you get to work on Monday, you find out the preceptor is going to



be at a conference for the week and you are going to work with the senior technician. You will spend two days in decontamination then you will spend the rest of the week learning about the different instruments and how to maintain them correctly. The time passes quickly as the tech you are working with is very good and even lets you check some of the trays against the pick sheets. This week, the preceptor is back and she is very excited about the conference she attended. She tells you about some of the new things she has learned as she lays out your new learning packets. You see by the top sheet that you are going to study sterilization. Sterilization is defined as the destruction of all living organisms by exposure to physical or chemical agents. You already learned about some chemical sterilization earlier but Ms. Preceptor starts to talk about steam sterilization, ethylene oxide, paracetic acid, gas plasma and dry heat. She tells you that the

most common sterilization process is steam. This involves saturated steam under pressure and is the most economical and reliable method of sterilization. You also learn that the essential parameters of steam are time, temperature and the presence of saturated steam. The entire load must be exposed to steam that is hot enough to destroy all microorganisms in the time allotted for sterilization.

The next type of sterilization is ethylene oxide (EtO). This is a colorless gas that has an odor similar to ether. It is an ideal sterilant for heat sensitive devices. EtO gas will kill all known microorganisms by a process called alkylation. This is a chemical reaction that interferes with the metabolism of all types of microbial life, including bacterial spores. You also learn that this type of sterilization does have some disadvantages. The first being that it takes a long time for one cycle to complete. This is due to the need for lengthy exposure and aeration times. It is also more expensive and there are known serious health hazards associated with the continued exposure to EtO.

Dry-heat or "hot air" sterilizers are used only for specialized purposes for the most part. This involves very high temperatures which ordinarily would destroy or damage most items that a hospital usually autoclaves/sterilizes. Dry heat sterilization actually burns up microbial cells. Powders such as cornstarch are things, which are sterilized using dry heat.

Paracetic acid sterilization is considered a chemical sterilization. This is used as a low temperature sterilization system. This system is used primarily as a "just-in-time" sterilization system. In other words, it is

