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AUTHOR: SMSgt K. E. White, SNCOA Student, 17 Aug 1992

Reviewed by:

AFEHRI Representative G. R. Akin date 29 Dec 97

EPC Representative Joe Sch date 14 Jan 98

Scanner Operator Samuel date 16 Jan 98

APPROVED BY:

Gary R. Akin

GARY R. AKIN, CMSgt, USAF

Director

Air Force Enlisted Heritage Research Institute

BACKGROUND PAPER
ON
THE HISTORY OF THE PHARMACY TECHNICIAN IN THE AIR FORCE

The history of pharmacy in the military goes back to the Revolutionary War. John Morgan, a physician trained in London, was appointed Physician-in-Chief and Director of the American Hospital in October 1775. This position was the predecessor to what is now known as the Surgeon General of the Army. During the Revolutionary War, the frail system of medical supply failed due to disorganization. Because of this, a set of regulations suggesting supply by means of "Continental druggists" were introduced to improve the supply system. (2:7) The Continental druggists were what is now known as pharmacy technicians. This milestone was not the only event that shaped pharmacy service in the military.

In May of 1939, The 10th International Congress of Military Medicine and Pharmacy established accepted guidelines for the operation of pharmacies in the military. This assembly of medical experts from militaries around the world developed direction for pharmacy practice in the military for years to come. The following is an excerpt from this historic document:

1. The chemico-pharmaceutical service of the Army in times of peace has the following purpose:

- (a.) To provide drugs, medicines and medical supplies
- (b.) To supervise the functioning of analytical

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chemical laboratories.

(c.) To assist the medical personnel in the spheres of hygiene, prophylaxis, etc....

This gathering of experts also indicated that a pharmacist should direct these activities, but it would not come about until years later. (7:214)

Now that I've given a brief look into the early pharmacy years, allow me to give you a roadmap of what I'll cover in this paper. I want to show the evolution of the pharmacy technician from the early days in the Army Air Force to the present. I also want to show the training received, utilization of personnel, and the many innovations throughout each decade of service. To properly gain perspective, I'll begin with pharmacy service in the Army Air Force.

The pharmacy technician started out as a medical technician with no specialized training in pharmacy. He was simply assigned to the drug room. There was no professional assigned to work in the pharmacy, the officer in charge was the medical officer in charge of outpatient services (3:68). His responsibilities were to ensure the pharmacy's management and proper operation. All other pharmacy functions were delegated. A noncommissioned officer in charge was appointed and had assistants assigned to help run the section. At this point in time, the term "pharmacy technician" was not known, they were still considered "medics". The NCOIC was responsible for ensuring prescriptions were compounded in accordance with the U.S. Pharmacopoeia, U.S.

Dispensatory and the National Formulary. He was also responsible to see that due care was taken in compounding. Another responsibility was to make sure prescriptions with prescribed doses that exceeded physiological limits were not issued without verification by the prescriber. Assistants assigned to duty in the pharmacy were not permitted to compound or dispense medicines until the OIC was satisfied with their qualifications. (3:69)

One perspective of this is from Chester Gobel, MSgt, USAF (ret). He stated the technician was self trained by reading in Remington's Pharmaceutical Science and through practical application. He was a medical technician assigned to duties in the pharmacy and/or laboratory, depending upon his assignment. Facilities in his time were small and often called drug rooms or dispensaries, depending on the hospital or clinic size. Their primary function was outpatient dispensing, except in larger hospitals where they used a bulk issue system for wards and clinics. He stated there was little or no pharmacy manufacturing at that time and no real equipment to perform these tasks. Their main function was to dispense medication for treatment of minor colds and coughs, and Sulfa drugs for infections. (4:--) The lack of training was a big problem until the military medical experts came up with the solution.

In November 1942, The Army Air Force recognized the need to train technicians in specialized skills prior to unit assignment. (1:Sec III, ch 2) They began procedures to establish a medical training school to meet this need. In November 1943, the Army

Air Forces Medical Service Training School opened at Robins Field, Georgia. This school provided training in medical skills to enlisted men in a variety of career fields. (1:Sec II, ch 3) Pharmacy was one of those areas. The pharmacy course consisted of 88 hours of technical instruction, 18 of which was devoted to laboratory procedures. Seventy hours of instruction was devoted to pharmaceutical calculation, practical compounding, and preparation of various solutions. They also practiced setting up field pharmacies and operating under tactical conditions. At its inception, the school had a small amount of drugs and practically no equipment. By 1944, it had eventually gained an inventory of drugs found in every Group Dispensary and a substantial amount of equipment to include; distilling apparatus, pill tiles, balances and graduated measuring devices. (1:Sec IV, ch 4) At this point, if a pharmacist entered the Army Air Forces, he was enlisted and still attended this school. (1:242) I could not find out what happened to this school when the Air Force became a separate service in 1947. All I know is in 1948, medical training opened at Gunter AFS, Alabama, with pharmacy technician training as one of the courses. (6:--) With the end of this decade, the enlisted pharmacy technician carried pharmacy services into the next.

In the decade of the 1950s few changes in the operation of pharmacy service occurred. While technical training still existed at Gunter, many Air Force pharmacy technicians attended training at Ft Sam Houston, Texas and Bethesda, Maryland. (6:--) The training of this period still focused on outpatient

dispensing with a core curriculum of anatomy and physiology, pharmacy calculations, organic and inorganic chemistry, and pharmacology (8:--). Many still received their training through OJT after completing 4 weeks of basic training, 4 weeks of medical fundamentals training and then direct duty to their next assignment for pharmacy training (5:--)(8:--). Another development of this period was the equipment the technician had to perform his job.

Initially there was no equipment for compounding, it was mostly done by hand. There were a few commercial topical products available, but most needs were filled through pharmaceutical compounding (4:--)(5:--)(8:--). A few "smart" technicians used personal initiative and concocted their own gadgets by using jugs and rubber tubing to make the job of bulk compounding easier. A3C Bill Elderton provides an excellent example of this creativity. He used a large empty jug of soap, cut the bottom off and attached a rubber tube to the tapered end. He would mix an ointment or cream in the jug and by gravity feed would be able to fill smaller ointment jars with his preparation. (5:--) By the end of this decade, commercial compounding equipment began to reach the market and Air Force pharmacies. One such noted piece of equipment was the pharmaceutical processing unit which allowed the technician to mix oral liquids using a tank and filter unit. Another innovation of this time was the capsule filling machine, eliminating the need for the technician to punch out drugs into capsule form by hand. (4:--)

While the NCOIC continued to run the show in the pharmacy, some larger facilities hired civilian registered pharmacists to handle the professional end of the operation. Toward the latter part of this decade, pharmacy business began to get a little more complicated and the need for a "resident professional" in the larger hospitals was evident. (5:--) With this in mind its time to move forward into the 60s.

The decade of the 1960s produced some major changes in pharmacy that effects the career field to this day. From new equipment availability, pharmacy security, commissioned pharmacy officers and the Vietnam War; the pharmacy career field continued to grow and the technician was there as the primary force.

Technical training continued at Gunter AFB until 14 March, 1962, when it was moved to Sheppard AFB, Texas, with the basic core curriculum intact. The primary focus was still on outpatient service. (6:--) To accomplish this, the need for new equipment items became significant.

A major innovation of this time was the explosion of pharmacy equipment available to the technician. Pharmacy prepackaging equipment became available allowing the technician to break down large quantities of drugs into smaller unit-of-use packages. Tablet counters and advanced compounding mixers enhanced the pharmacy's ability to get the job done. (4:--)(5:--)(8:--) This equipment, no matter how contemporary for the time, seems archaic when compared to the "toys" of today.

Another change of this decade concerned the facilities

themselves. Security had never been a problem in the pharmacy until new innovations in psychotherapeutic drugs were out on the market and a new attitude of the times existed. The abuse potential of many of these pharmaceuticals and the increase in drug abusers concerned the commanders on how to curtail the illegal distribution of these drugs. Security in the pharmacy became a prime interest and designs were made to make pharmacies less penetrable. Dispensing windows began to get smaller, dead-bolt locks began to appear and access to pharmacy sections were suddenly restricted. Although the pharmacy was not designated a controlled area as of yet, drug control was an important issue, a sign of the times. (5:--)

Another issue of this decade was the Vietnam War. The pharmacy technician's involvement was not as a combatant, but was just as important. His primary duties included pharmacy service, but his additional duties were a little more interesting. I have heard some retired Air Force pharmacy technicians tell of missions in catchment area recovery (MEDCAT), duties as field medics and work as litter bearers during times of heavy casualties. Remember, the pharmacy technician received training in medical fundamentals prior to receiving specialized training, so he was expected to perform in these situations. (5:--) I guess you could say, no one was exempt from their involvement in this conflict. Now, let me now show you a more positive change of this period.

The major event of the 1960s was the commissioning of

pharmacists to act as pharmacy officers. When the Biomedical Sciences Corps was established in 1967, it provided the opportunity for pharmacists to work in their primary profession. It also opened the doors for many innovations in military pharmacy services that are changing even today. (6:--) The one drawback for this was Top 3 slots were taken away to make room for the officers, but I feel it was well worth the change to get the professional guidance that had been needed for a long time. (5:--) While the '60s were ripe with changes in pharmacy the 70s erupted with innovations in service.

With the addition of the commissioned pharmacist to the pharmacy team, changes began to develop in the services the pharmacy provided. Inpatient pharmacy became a new concept in the military setting. Pharmacy technicians began training on intravenous admixtures and sterile product compounding. These procedures became a part of the curriculum at the tech school at Sheppard. (6:--)(9:--) While training is important, another development of the 70s was the availability of pharmaceuticals on the market.

More commercial products became available from the pharmaceutical manufacturers placing a bigger demand on the technician's skills to recognize products, therapeutic classification, and accepted dosages. This was a challenge of the times with more and more products appearing on the market and expanding technologies emerging every day. (5:--)(6:--)(9:--)

During the 70s, the advent of new equipment began to appear.

Automated Prescription Dispensers (Baker Units) were utilized at first in the larger facilities, but they eventually made it to all levels of Air Force pharmacy service. (5:--)

New technologies in sterile product compounding were being utilized in inpatient services to increase the technicians efficiency in preparing I.V. admixtures, I.V. piggy back doses, and the reconstitution of single dose antibiotics. Such innovations included the Vacutainer pump and the Laminar Flow Hood. (9:--)

This growth in pharmacy service led to even more expansion of the career field in the 1980s.

During the 80s, more emphasis was placed on inpatient pharmacy training. Technical training was gearing more and more towards I.V. admixture and sterile product manufacturing. Technicians were utilized more in the inpatient pharmacy section to prepare the sterile products. When the demands for chemotherapy emerged as a treatment for cancer, technicians were used in the manufacturing of these vital, life-saving treatments. (9:--)

To make these changes easier to enact, pharmacy began looking at something to help in processing the information required to accomplish the job.

The TriPharm Information System was implemented to enhance pharmacy's ability to handle the immense workload that had grown over the past several years. Increasing patient populations, too numerous and complex drug classifications, and growing pharmacy inventories proved a need to modernize the pharmacy setting and replace the typewriter as the primary tool for producing pharmacy

labels. Pharmacy needed an automated system to handle patient census, prescription processing, inventory control and clinical screening to improve its ability to service the patient. The TriPharm system has done just that and still is today. (9:--)

As we are just beginning the 1990s, pharmacy service is still expanding and the demands on the pharmacy technician will continue to grow. As greater demands are placed on the pharmacy officer, the technician must rise and take his place in the conventional pharmacy role. More involvement in drug distribution, sterile compounding and outpatient services is not just needed, it's required. Today's technician is challenged with a demanding workload, the need for advanced skills and knowledge, and a need to serve our ultimate purpose, the patient.

With this in mind, I would like to review everything I've covered. First, I provided you the information on how the medical technician was assigned and used in the pharmacy setting, in the AAF, with no formal training until the AAF Medical Services Training School was established in 1943. Next, I explained the technicians place in pharmacy service in the 1950s, pharmacy technical training held at Gunter AFS, AL, and the lack of materials and equipment in the era. Then, I described pharmacy of the 1960s, the signs of the times with pharmacy security awareness increasing, pharmacy's involvement in Vietnam, and the commissioning of pharmacy officers. Next, I covered the expanding innovations of the 1970s with inpatient services ever increasing and the advent of new equipment available. Finally, I

portrayed the technician of the 1980s up to now, their place in the inpatient service and in advanced technologies, such as chemotherapy and their challenges as we go into the 1990s.

Pharmacy technicians have had a definite impact on the history of medical service as well as pharmacy service in the Air Force. It looks like Dr. John Morgan had a pretty good idea when he made the "Continental druggists" responsible for resupplying his surgeons. In the future, pharmacy technicians will play a vital role in the evolution of an ever changing career field. We have made a difference and will continue to in the future.

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