



the review

Randy Perkins, PA-C, Editor

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UND PA Program Update — Increase in PA Programs Due to Increasing Need

With the increasing need for primary care providers, especially in underserved urban and rural populations, the PA profession has boomed in the past few years. In response to the increasing need, there have been numerous new PA programs

applying for accreditation through the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA). As of July 2014, there are 187 PA programs throughout the United States. Thirty-two of these programs are still in “provisional” status as they are new and require further evaluation once they have a graduating class. An additional 64 programs have applied for accreditation and will likely start admitting

students in the next couple of years, with accreditation by the year 2018 if the ARC-PA standards are met. This would make a total of over 250 PA programs nationally in 2018.

The UND PA program was established in 1970 and began with a curriculum based off the MEDEX program developed by the University of Washington. In 1972, the program switched its admissions policy to allow only

experienced registered nurses to apply and complete the program. Students had the option of becoming PAs, NPs, or both. The College of Nursing (CON) requested to educate the nurse practitioner students, and the NP degree moved to the CON while the PA degree stayed within the School of Medicine and Health Sciences. In 2004, the PA Program graduated the

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UND Update)*

Mission:

The mission of NDAPA is to promote quality, cost-effective, accessible health care to enhance the health and well-being of the people of North Dakota and to promote the professional and personal development of Physician Assistants.

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My Two Cents Worth

By Curt Kroh, NDAPA President

First off, thanks for your vote of confidence with my re-election as your President. I plan to continue to work improving the NDAPA website as well as the membership renewal process. I also continue to encourage everyone to join the NDAPA; as our membership grows so does our collective voice at the capital. Speaking of our capital, if there is a law affecting PA’s that you think deserves our attention, let us know so we can look into it.

I would also like to recognize Lori Dockter and the CME committee for their efforts with this year’s Primary Care Seminar. Unfortunately, I was not able to attend this year but I hear good quality CME’s were offered.

As I mentioned in an earlier “My Two Cents Worth,” I am currently serving in Afghanistan. I am working in a Troop Medical Clinic seeing a variety of conditions ranging from coughs/colds and orthopedic overuse injuries to Pulmonary Emboli, and medical MASCALs. I am reminded of the tagline from the TV show *Pawn Stars*, “you just never know what is going to walk through those doors.” One thing is certain: I work with the best group of medics in this theater of operation. When they are not working clinic, they are supporting the training of the Afghan medics, teaching them basic life saving techniques. As the US is continuing to withdraw from the region, the quality of medical care provided remains top notch.

UND Update — *(continued from Page 1)*

First master's degrees with the UND School of Graduate Studies conferring a Master of Physician Assistant Studies. In 2006, the program began accepting other experienced clinical health professionals such as paramedics, respiratory therapists, athletic trainers, radiology technologists, etc. This change broadened the applicant pool and allowed more area applicants to consider becoming Physician Assistants

According to the Physician Assistant Education Association (PAEA) in the years 1990, 2000, and 2010, there were 45, 105, and 132 PA programs respectively throughout the United States. By 2020, there will be well over 250 accredited PA programs nationally. In 1990, there were just over 1000 PA students enrolled in PA programs, in 2000 that number went up to approximately 4000 students, and as of 2012 (most recent PAEA data) that number climbed to nearly 7000 students. Many have asked if there is a limit to how many accredited PA programs there should be in the United States. The answer from the ARC-PA is no. With the increasing need for primary care providers, PAs play a vital role in filling in these gaps and if PA programs are successful in doing so, they will continue to strive through the years. Nurse practitioner programs have been on a steady increase as well. There are currently over 350 nurse practitioner programs throughout the United States, many of which are primarily online.

Our most recent student PA class of 35 students, matriculating from 2014 to 2016, range in age from 27 to 54, with an average of 36 years old. Clinical experience averages around 9 years in their healthcare profession. This class represents 16 states throughout the US, with 25% from North Dakota, and 51% coming from the tri-state area comprised of ND, MN, and SD.

In comparison, the national average for PA student age is 28 years, with 3600 hours of patient contact work experience. This would be right around 20 months of full-time experience. These hours are not necessarily in licensed medical occupations, but also include basic EMTs, nurse assistants, medical assistants, etc.

The UND PA program's current admission requirement of 3 years of work experience in a licensed healthcare profession limits our applicants, especially many North Dakota applicants who wish to pursue a career as a PA. Both UND and NDSU have pre-PA courses of study, but the vast majority of students who complete these tracks must move out of state to complete their PA education.

Though the UND PA program has traditionally admitted students with a significant amount of previous licensed healthcare experience, we must start looking at some of our bright and talented local residents that will stay in North Dakota and practice in our rural areas. Licensed healthcare experience will still play a large role in our admission decisions. However, applicants that show a desire to practice in rural and underserved areas and have experience in a non-licensed healthcare role may also be considered. Applicants without licensed healthcare experience will be in a different track than the traditional UND PA student and must have additional intensive prerequisite classes in sciences including upper level organic/biochemistry, microbiology, and psychology. Other factors that determine the best candidates for the UND PA program include overall and science grade point averages, North Dakota residency, and their personal statement and interview.

The primary mission of the University of North Dakota Physician Assistant Program is to prepare selected health care professionals to become competent physician assistants working collaboratively with physician supervision, emphasizing primary care in rural and/or underserved areas of North Dakota, the United States and the world. With so many ambitious and intelligent students leaving the state for PA education at other institutions, we continually lose these future PAs to other areas when we clearly have a need right here at home.

We highly encourage members of the NDAPA to consider precepting our local talent during their PA education at UND. Without the knowledge, generosity, and time of preceptors during our own education, we wouldn't be where we are today.

Please feel free to contact us with any questions.

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North Dakota PA Arrives to New Home.... Mzuzu, Malawi, East Africa

Cindy Renner, PA-C

We have safely arrived at our new home in Mzuzu, Malawi East Africa. We have only been here for 2 weeks but our former life in the US seems like a long time ago. In the days before we left we vacated our house (which finally sold), had a wedding for our daughter, took my mom to Endocrinology in Fargo (she developed hyperparathyroidism), and packed up, gave away or sold our remaining belongings. I also took my PA Board Exam a year early without studying – and PASSED!

Since my arrival I have done an I&D on a large skin abscess, treated acute asthma, nosebleeds, and allergies, treated a



burn on a hand, counseled older students on multiple behavioral issues, counseled adolescents on hygiene, treated several fungal infections, looked at a draining ear, and today took one of the other missionaries to town for an x-ray

after an ankle injury sustained while walking on one of our uneven rugged paths. One of our girls has been having severe epistaxis episodes, and the source of bleeding is too high in her nasal cavity for me to cauterize. I will have to take her to an ENT specialist which is 2 days drive



from here. Last evening a boy told me that he has been having enlarging breasts and galactorrhea for a year, but didn't want to tell anyone. I would like to get a CBC, for the girl with epistaxis and at least a prolactin level on the boy with gynecomastia/galactorrhea, but finding a good lab is

difficult. I am the person responsible for getting the children new glasses (the frames are handed down to younger kids as new lenses / prescriptions are needed), getting them to the dentist (a local dentist is willing to do checkups and “de-scaling “ for free!) making sure they are served nutritious meals, have their immunizations etc. and are generally staying healthy. The

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Assessment of Ebola Virus Disease, Health Care Infrastructure, and Preparedness – Four counties, Southeastern Liberia, August 2014

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Ebola virus disease (Ebola) is a multisystem disease caused by a virus of the genus Ebolavirus (1,2). In late March 2014, Ebola cases were described in Liberia, with epicenters in Lofa County and later in Montserrado County (3). While information about case burden and health care infrastructure was available for the two epicenters, little information was available about remote counties in southeastern Liberia (Figure 1).

FIGURE 1. Location of the four counties assessed for Ebola virus disease case burden, health care infrastructure, and preparedness — Liberia, August 2014



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Ebola (continued from page 3)

Over 9 days, August 6–14, 2014, Ebola case burden, health care infrastructure, and emergency preparedness were assessed in collaboration with the Liberian Ministry of Health and Social Welfare in four counties in southeastern Liberia: Grand Gedeh, Grand Kru, River Gee, and Maryland. Data were collected by health care facility visits to three of the four county referral hospitals and by unstructured interviews with county and district health officials, hospital administrators, physicians, nurses, physician assistants, and health educators in all four counties. Local burial practices were discussed with county officials, but no direct observation of burial practices was conducted. Basic information about Ebola surveillance and epidemiology, case investigation, contact tracing, case management, and infection control was provided to local officials.

At the time of the evaluation, no cases of Ebola infection had been reported from any of the four counties. Each county has one referral hospital (100–150 beds) with outlying health centers and 17–24 clinics. Before the epidemic, six physicians served all four counties (range = one to three per county). At the time of the evaluation, only three physicians remained; the others had left Liberia because of the epidemic. In two of four hospitals assessed, nursing staff members were not coming to work or had abandoned facilities; in another hospital, health care providers had not been paid for 3 months but were still providing basic care. Frequently, nursing students, nursing aides, and community health care volunteers were providing basic medical care and responding to obstetric and surgical emergencies.

Supplies of nonsterile gloves and sterile obstetric and surgical gloves were depleted or absent in all four counties. Hand washing stations rarely were available in the facilities assessed, and if available, were typically located only in operating theaters. Hand washing stations in most health care settings consisted of water jugs, and even these were scarce. To compensate, bamboo hand washing stations were constructed for use at entrances to hospitals, county checkpoints, and in towns (Figure 2). Supplies of soap, bleach, or alcohol-based hand gel also were depleted. Rudimentary isolation facilities were present in two counties; neither had water, electricity, or waste disposal facilities. Communication between the county health office and hospitals and clinics relied on cell phones and radios, with intermittent Internet availability. In one county, only six of 19 health facilities had radio or cell phone contact with the health office; the other 13 required site visits by a district health officer. Transportation of specimens and patients was challenging; the counties each had only one functioning ambulance for all medical or specimen transfer, and no air transport was available.

Ebola emergency preparedness plans at the county and hospital level were lacking. Although Ebola task forces had been established in each county, according to reports from the field, the infrastructure and leadership were hampered by limited resources and difficulty communicating with and mobilizing the local communities. In all counties, there was insufficient personal protective equipment to care for patients with Ebola. Health care providers had not received training on the donning and removal of personal protective equipment. No training on case investigation, case management, contact tracing, or safe burial practices had been provided at either the county or hospital level. No Ebola surveillance systems were in place.

After basic training on case definitions and surveillance was provided to local officials, River Gee County health officials reviewed recent deaths and identified a patient with suspected Ebola. On August 3, a pregnant woman (patient 1) died during a spontaneous abortion after leaving Monrovia where she had contact with an infected person at a funeral; she was buried by the community in the week after her death. On August 24, 2014, Maryland County authorities identified a man hiding in a rice truck who had signs and symptoms of Ebola (patient 2). The truck had departed from Fish Town, River Gee County, and was destined for Pleebo, Maryland County. The man, who was reported to have participated in the burial of patient 1, was sent back to Fish Town, where he later was reported to have died of laboratory-confirmed Ebola. This was the first evidence of secondary transmission of Ebola in southeast Liberia.

FIGURE 2. Residents use one of the bamboo hand washing stations* that were erected to improve health care practices at entrances to hospitals, county checkpoints, and in towns — Liberia, August 2014



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Africa (continued from page 3)

government social services director told me he will pay me a visit soon – apparently I am also responsible to make sure the children are not deprived of opportunities to experience their Malawian culture.



I contract with a local tailor who works outside with a foot treadle sewing machine, to make our school uniforms, and a person with a knitting machine that makes all the sweaters (for which he charges about \$5.00 each).

I have discovered that there is a huge diabetic population here. On my first day, a doctor at a local clinic asked me to come and help in his diabetic clinic which is held twice a month. Another physician who I met in passing asked if he could come and visit with me about diabetes because he would like to know something about it. I

learned that they can usually get insulin for their patients, but not always the same kind each time, which means the patient may some-



times be getting NPH, sometimes a premix like 70/30, or maybe just Regular, Humalog or Novolog! There are no home meters, or

insulin pens. They get a FBS tested when they go to the clinic, but no other lab work. To keep their insulin cold they are supposed to put clean wet sand on the floor and use a new clay pot to cover it. The insulin vial is placed into the wet sand and the clay pot covering keeps it relatively cool. I had to tell the physicians that I didn't have time right

now to help with diabetes in the clinic, but I did consent to teaching an evening class for persons with diabetes in the community on basic diabetes management principles.

I'm glad I will get to use my diabetes knowledge to help people in Africa, but that was not the purpose of moving here – I am trying to conserve my time and energy

for the 98 resident children, multiple African nationals who work here as guards, teachers, kitchen and laundry helpers, groundskeepers, assistants, and of course the Mamas”...

We fall into bed each night

completely exhausted, and wonder how we are going to keep up. I pray each night to be “equal to the task...”

We are in significant need of medical supplies. If anyone has access to leftover supplies from suture kits, gauze, iodine swabs, large Band-Aids, rubber gloves, lidocaine, antibiotics (even recently outdated is OK) we could sure use them. We could also use skin care products for the adolescent children. They each have only their own bar of bath soap to use for their face. They could **also** use new good quality tooth brushes. These could

be sent to me at Cindy Renner, Rafiki Foundation, PO Box1018, MZUZU, Malawi, East Africa.



Many of our children have no sponsor, which means they never get a letter or birthday card except from us. If you would like to sponsor a child please contact me for

more information at the above address, or email me at eatcloc8@aol.com.

As I reread what I have just written, it doesn't sound like all that much fun, and that is NOT the case. The children are delightful and very bright. They are appreciative and loving. The Mamas are dedicated and truly love the children in their care. The other missionaries here have dedicated their lives to helping these children. We feel humbled and blessed every day!

Ebola (continued from page 4)

Although additional Ebola cases have been reported in southeastern Liberia since this assessment was completed, there have been improvements in the level of Ebola preparedness. County health care staff received multiple trainings on surveillance, infection prevention and control practices, and burial practices. County Ebola task force meetings take place regularly, and an Ebola incident management system is in place. Additional ambulances and pickup trucks have been provided to county health teams. Three Ebola treatment units and multiple community care centers are planned for these southeastern counties. Still, obstacles to preventing spread of Ebola remain, and personal protective equipment,* sufficient personnel for effective contact tracing and case management,† efficient patient transport, and regional diagnostic laboratory capabilities are urgently needed. The Ebola disease case burden in southeastern Liberia is still lower than other areas of Liberia, but additional public health actions to strengthen preparedness and response efforts are needed to prevent further disease spread.

The latest updates, including case counts, on the 2014 Ebola outbreak in West Africa are available at <http://www.cdc.gov/vhf/ebola/outbreaks/guinea/index.html>. The most up-to-date clinical guidelines on the 2014 Ebola outbreak in West Africa are available at <http://www.cdc.gov/vhf/ebola/hcp/index.html>.

* Additional information available at <http://www.cdc.gov/hai/prevent/ppe.html>.

† Additional information available at <http://www.cdc.gov/vhf/ebola/hcp/monitoring-and-movement-of-persons-with-exposure.html>.

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Acknowledgments

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Not Your Traditional MASCAL

By MAJ Curt Kroh MPAS PA-C

I believe that pretty much everyone is in agreement that multi-casualty incidents (commonly called MASCAL) are difficult at best. I would propose that as multi-casualty incidents go, medical “MASCAL’s” are especially more challenging. Often with medical multi-casualty incidents (MCI) there is no known event to offer a clue that something has happened as well as a sort of visual clues as to just how many patients are potentially involved. With a medical MCI, all you know is that suddenly you are getting a run of patients, one right after the other, with similar signs and symptoms and don’t know what is making the people sick nor just how many there is going to be. The following is a summary of just this kind of incident that the 814 Area Support Medical Company Troop Medical Clinic, consisting of a couple of providers and a handful of medics, faced while deployed in Afghanistan in 2014.

Patient #1: 29 year old male who was found unresponsive in a vehicle with vomit on his face and clothes. Medics were alerted at approximately 1915 but before they could arrive on scene the pt was transported by private vehicle to the Troop Medical Clinic (TMC). Upon arriving at the TMC patient was found to be unresponsive without a pulse so CPR was started. The patient’s past medical history was unavailable. Events prior were reported that the patient was participating in a BBQ type celebration of cooked local chicken with cooked rice.

At approximately 1918 hours the on-call medical providers arrived at the TMC and began advanced resuscitation efforts. IV access was obtained, epinephrine was given, an ET tube was placed with respiration achieved by bag valve and confirmed by auscultation and colorimetric CO2 device. Lifepack EKG pads were attached and showed asystole in lead II. CPR was continued as staff worked thru the H’s & T’s giving multiple rounds of epinephrine and rhythm reassessments, which continued to show asystole. Portable bedside ultrasound was used and complete cardiac standstill was noted.

Patient was pronounced dead at 1938.

Patient#2: At approximately 1945 a 34 year old male friend of patient #1 presented to the TMC after reportedly passing out outside the TMC after hearing of his friend’s death. Patient was being carried in by his friends initially unresponsive but become responsive with gentle sternal rub. Patient was then A&O x3 and communicated being very upset over the loss of his friend. Patient continued to hyperventilate and in turn becoming more anxious. Patient was given lorazepam 1mg IV initially but was felt to be still quite anxious so another 1mg lorazepam IV was given.

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MASCAL (continued from page 6)

Patient then was much more calm and was released from the clinic with his buddy.

Patient#3: A 43 year old male presents to the clinic being the third patient to be carried in by 4 people. On exam, patient was found to be completely unresponsive with clenched teeth, right pupil was fixed and abnormally dilated (which was later determined to be due to an old pre-existing eye injury) with pin point left pupil. There was also some blood and emesis in the corners of his mouth. Vital Signs initially were 170/93, HR 112, respirations reported at 12/ minute O2 sat 98% on room air. Initially nasal trumpets and oxygen nasal canula were placed but as seizure type activity stopped then an oral away adjunct was successfully placed and pt was ventilated with a bag valve mask. An anticubical IV was attempted but unsuccessful so a EZ IO in the left tibia was successfully placed. Narcan 0.4mg IO and 1 amp of D50 IO was given immediately after establishing IO access. Vomiting with emesis occurred compromising the airway which was suctioned and Rapid Sequence Intubation (etomidate and succinylcholine) was performed with ET tube placed and confirmed with auscultation, colormetric CO2 device, and CXR. Patient was then place on an Eagle ventilator. Patient was initially given fentanyl for post intubation sedation but response was less than optimal resulting increased irritability with tube placement. At this time the medical staff considered opiate overdose and the use of fentanyl may not be effective so the decision was made to use IO Ketamine which was successful in calming the patient down.

Patient was evacuated to medical role 3 hospital. Patient was extubated within 24 hours and reportedly in stable condition without obvious deficits.

Patient #4: A 34 year old male presents to the clinic being the fourth person to be carried in by 4 other people having attended the same BBQ type celebration as the others. On exam patient had markedly reduced Level of Consciousness responding to very loud verbal stimuli also of significant note was his pin point pupils. Remainder of the primary exam was negative with stable vital signs. IV access was obtained and 2mg narcan IV was given. Shortly after receiving the narcan the patient become much more responsive and pupils became less pin point. At the time the patient become more uncooperative, trying to pull out the IV, refusing a glucose finger stick, or the pulse ox on his finger. Patient was verbally calmed, monitored for approximately 90 minutes with vital signs remaining stable. The patient continued to demand to be allowed to leave. Vitals were stable and demonstrated he was alert and competent so he was turned over to the MP's who then took him into custody requiring him stay until they could get a urine drug screen from him. He could not produce any urine and oral hydration resulted in occasional watery emesis, in spite of this the patient continued to refuse medial care and/or IV hydration. Eventually the patient agreed to allow IV access and was hydrated with NS and given IV zofran for nausea.

At this time the patient was becoming increasingly lethargic, to the point that his respiratory drive was compromised. The patient was then given another 0.4mg narcan after which he would become responsive and alert with normal respirations. After receiving about 1500ml of IV fluid he was able to urinate which did test pos. for opiates and THC. At this time it was clear that the patient could not be discharged so it was decided to keep him over night expecting him to improve well enough for discharge by morning. However the patient continued to have cycles of respiratory depression, noting apnic spells and O2 sats in the 60-70% range every 60-90 minutes, each time responding to 0.4mg narcan IV. This cycle remained throughout the night at which time it was decided that the patient would be evacuated to a medical role 3 hospital for further monitoring and treatment as needed. Patient was discharged 12 hours later without obvious deficits.

Patient #5: A 53 year old male with a chief complaint of nausea and vomiting after eating the chicken and rice at the same BBQ type celebration earlier this evening. At this time an IV was established starting IV normal saline and labs including a drug screen were ordered. Patient was also given 4mg zofran IV after which the patient's nausea did improve some. The labs came back significant only for positive for opiates. After receiving about 1000ml of NS the IV was discontinued and he was given zofran 4mg PO for some remaining nausea symptoms. At this time he was discharged from the clinic in stable condition and released to the MP's.

In conclusion, I believe the key to any MCI is the need to be aware of your surroundings, communication between providers not only in the treatment room but also with the medics on the ground. Another very important point is to promptly reset after EVERY case so you are ready for then next one that comes in the door. It is important to resist the urge to sit back and reflect on the last case in turn wasting valuable time to prepare for the next one that may come in. The US ARMY medical personal train mostly for trauma, realizing most of their normal clinic care will actually be medical in nature. Never forget toxicology, remember to consider a potential group overdose and/or poison. In the end "Train as you fight" resisting the urge to limit your training to trauma. Even though the initial cause was not immediately identified with this MCI, the medics and health care providers reacted as a team, adjusting "fire" as each patient arrived, preventing at least two deaths.



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