In the Spotlight

Web Expansion: Interview with James Augustine, M.D.

By Courtney McCain

The summer 2008 issue of the IAFC's EMS Section newsletter, EMS Chief Advisor, featured an article about the Emerging Diseases Task Force. This online feature offers expanded statements from an interview with James Augustine, M.D., FACEP, a member of the Emerging Diseases Task Force. Dr. Augustine is medical director of Atlanta Fire Rescue Department and several other suburban Atlanta agencies. He is a member of the clinical faculty in the Department of Emergency Medicine at Emory University, and is chair of ASTM Task Group E54.02.01, which develops standards for hospital preparedness under Committee E54 on Homeland Security Applications. He has also served as a firefighter and EMT for more than two decades and has published numerous articles related to emergency medicine and preparedness.

Hopes for the Emerging Diseases Task Force

"I have been a part of the IAFC's Emerging Diseases Task Force for some years. I specialize in emergency medicine, but have learned a lot about infectious diseases through other agencies here in the Atlanta area. We have a large, international airport (Hartsfield Jackson International), and we also have the Centers for Disease Control. We have extensive interactions with public health and the CDC.

"Through the Task Force, we are able to share some of the resources and disseminate among IAFC members information that helps us do exposure control practices better and look forward to potential exposures that we'll have in the future, and much of the work recently has been preparing for potential pandemic flu outbreak. We can't look at prior experience necessarily to know what we'll do in the future. But the Task Force is working on that.

It's the responsibility of the IAFC and its working groups to think through those issues, and offer guidance to the fire service leaders to make sure there aren't bad outcomes for our people.

About the impact of removal of responder notification from the Ryan White Act

Somebody needs to speak on behalf of our providers to ensure that existing pieces of both legislation and regulation that impact fire and EMS personnel are protected. It has been this group's responsibility to think through what changes in the wording might mean protection for our personnel.

The other danger that's been lying there for a few years in HIPAA. Some people have misinterpreted HIPAA to absolutely refuse to release any information about a person's medical condition. That's not the design of HIPAA, but it's been an unintended consequence.

There have been problems in Atlanta with hospitals not sharing information, both before and after (the Ryan White Act was reauthorized). But now it's more difficult. I've had to use my personal influence to get the results we desperately needed.

It's our responsibility, the IAFC and its working groups, to think through those issues and offer guidance to fire service leaders and make sure there aren't bad outcomes for our people.

In the past, the IAFC had looked at SARS, which was a very important issue for us, particularly for our front-line firefighters serving Atlanta's international airport. They also had assisted the IAFC with gathering information about Avian flu, hepatitis and HIV. Now we're looking at pandemic flu.

About coordinating with area law enforcement and corrections so there's consistency

"Ryan White is also intended for law enforcement, but in some ways it's worse for them. That poor police officer who gets exposed to an infectious disease feels just as isolated. They don't routinely interact with hospitals, so they often don't have that type of relationship. Keeping your exposure control program consistent with that of your area law enforcement allows city government to understand it much better and allows you to get the funding you need to protect all those people who have exposures at the workplace.

About the flu

This year we had the vaccine, but it wasn't as effective and didn't cover 2 of the 3 major strains that occurred last year. Sometimes there's newly evolved or variant versions of the bug, and that's what happened last year. We had 2 unexpected strains that had already been identified but they weren't expected to become as prevalent as they did. And then we found that our favorite antiviral drugs all of a sudden had no effectiveness against these viruses.

That is what happens when we have to plan which vaccine to produce one year ahead. Sometimes, there are newly evolved or variant versions of the bug, and that's what happened earlier this year. Of the three strains that were seen, we had two unexpected strains that became very prevalent in the U.S., and vaccines didn't cover those. All three strains had been identified before.

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The two that became more virulent were not expected to become active, and some of our favorite antiviral drugs, amantadine and rimantadine, weren't effective. Tamiflu sometimes prevented or reduced the intensity and duration of the flu.

But we are not at the point where we have a treatment for any flu or any other virus, other than supportive care. That's one of the myths that we struggle against, is that every time there's an outbreak, there will be a treatment, a pill to pop or something like it.

How our bodies develop immunities

The reality is, our bodies don't develop immunity to any disease until we've been exposed to it. For many diseases we use vaccines, given multiple times to build long-term immunity. We have vaccines for childhood diseases like chicken pox to more complex diseases like hepatitis.

Children by their nature communicate viruses (especially respiratory viruses) very easily, and that builds their adult immunities. It would be nice if we can give them minimal sickness so we can build immunity, but that isn't always effective. In some cases, they need to be sick.

Immunity and the flu

Last year's flu shot will be beneficial to people who received it if they have a future exposure to that strain of the flu.

The elderly were particularly hard-hit by the flu this past year. Previously this group had not been hit by that strain of the flu. We can't develop a vaccine for everyone, and they need to have a natural immunity by being exposed to lots of bugs, especially as children.

With herd immunity, if everybody else around you is protected against a disease (even if you aren't protected), they won't get it, and they can't transmit it to you. If the rest of the herd can't transmit the disease, they can't give it to you. So, the more we have groups of people who are immune, who can't develop infections, the greater an individual is protected (even if that individual has never been exposed to that disease).

About MRSA

"Methicillin-resistant Staphylococcus aureus bacteria (MRSA) is becoming a big concern.

What has recently become a problem is community-acquired MRSA. We don't understand how community MRSA is spread, but so far there isn't a good test for it. Nasal swabs clearly don't do a good job of identifying those persons until they develop infections. Nasal swabs aren't good screening tools for community-acquired MRSA, but these tests have been used for hospital-acquired MRSA because those strains often colonize the nose.

We had an outbreak in a couple of the recruit fire classes in Atlanta several years ago, and we had to take steps in controlling that outbreak. It really disrupted their training for awhile, but ultimately within a month their members were back in training or on duty. You have to do a certain amount of cleaning and reduce colonization status of people.

Most of the time, (community MRSA) looks like a bug bite. That's the presenting symptom: "it looks like I got bit by a spider," and then we need to be aggressive with treatment, with drainage of abscesses we need to be smart about the use of antibiotics so further complications don't develop.

Difficulties with C.diff

C.diff (Clostridium difficile, a species of spore-forming bacteria) is one example of what can happen with antibiotics. What tips the balance is when they're getting antibiotics, those antibiotics kills the natural microbes in the GI tract. Where we have trouble with c-diff is where they get overwhelming infections and colitis due to prior and current antibiotic treatment.

You're exposed to a bug like c-diff all the time. You have staph all over you. It's there to protect you. You have bacterium lining our bodies and our guts, and it's there to protect us. When we set something out of balance, that's when we get into trouble. C.diff represents an imbalance.

Assumptions of readiness can be deadly

"We've been scooting along for a few years assuming we won't have a problem with an outbreak, or that someone will come up with a single answer for it. That's dangerous, we can't assume this is going to be easy. We have to be prepared for aggressive spread, and spread where we don't know how it's spread right away (contact, airborne, etc), like with SARS.

And we need to realize that we won't get out of this outbreak through the use of vaccines or antibiotics. In some cases like SARS, we couldn't develop a vaccine in time, and there was no antibiotic available for treatment of this very fatal disease.

Rescuers' "it won't happen to me" attitude

Complacency is a natural response. Many firefighters also have been fortunate enough to be healthy, and they tend to have great immune systems. They're exposed to bad stuff every day. But we need to remember that taking care of our immune system is the most important thing we can do to prevent the spread of disease.

CONTINUED ON PAGE 3 ⇨

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About what chiefs can do before an outbreak

There are four, preventative things we can do:

First, infection control officers should work on a routine basis with hospitals where we transport patients. Personal interaction is a great way for relationships to be built.

Second, they need to make sure the legal advisor to the department is aware of the specifics of HIPAA and Ryan White and other public health laws that affect exposure incidents.

Third, maintain ongoing relationships with local hospitals to ensure we have timely information. It's a struggle, and its an ongoing battle to maintain relationships we need with local hospitals.

Fourth, plan ahead. What might future exposures look like for your area? What steps we'll need to protect our communities and our people? The elements of planning for an outbreak, whether it's flu, MRSA, or VRE or C.diff or drug-resistance TB or SARS or whatever it is. . .the elements are all the same. It's just that in dealing with pandemic flu, the implications will be much more far-reaching and we really would need to develop this in modules.

About developing infection control programs for departments

In dealing with this, we need to keep in mind four things:

1—Our goal is to produce healthy retirees. At the end of their careers, we can't send them home to their families so immunocompromised that they can't enjoy the rest of their lives. That's why these programs are so important in every day and in long-term life.

2—Exposure control is part of an ongoing safety program

3—We have an unusual industry. Our personnel have to live together. There are few other industries where we have to cover almost every facet of what ordinarily would be home life.

4—Illness leads to injury in ways that you only appreciate how sick people can be. What happens is that our good, hard-working firefighters want to come in to work even when they're sick. So they do, but they're compromised. And when they go to that house fire and trip over a hose or fall down the stairs, they wind up injured. Illness contributes to injury and other lapses in judgment.

About Atlanta area infectious diseases resources

We do primary EMS at the airport (5 stations, 3 full-time units), and there, we get exposed to the worst, most complicated, world-wide set of diseases. Our infection control programs there are much more extensive. We work very closely with the CDC quarantine station there, and at all times, our crews are dealing with infectious diseases that are considered global.

At every point were there's a disease and outbreak worldwide, the fire and EMS personel who work at international airports and seaports need to be aware, need to know how to respond and work with public health to prevent spread of these diseases. It's much more complicated to work in these areas as public safety personnel. ✠

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