



HYOSPRAY

The Online Newsletter of the SFI/VCS/STARFLEET Medical Corps

The 2015- compilation of community health information blog posts by the volunteers of the STARFLEET Medical Corps are for the members of the STARFLEET International (SFI) fan association

The STARFLEET Medical Corps members summarized community health information or commented upon different aspects of health and wellness to share with others in this fan association as a way to encourage community health education and health promotion wherever SFI members live.

The following pages present their efforts over the past year.

<http://starfleetmedical.org/hypo/>

HYPOSPRAY

Year 2015, No. 1 (Jan-Feb)

Grand Rounds: Distinction between public health and medicine, global public health awareness campaigns, and an invitation

January 30, 2015

Summary by

Dr. Gregory Fant, PhD, MSHS

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COL, STARFLEET International (Marine Corps), SFMD

As we begin this New Year, please let me share three, public health topics for the good of our pending volunteer work, members of STARFLEET International, and the communities where we live.

Public Health Topic #1: Distinction between Public Health and Medicine

Within STARFLEET Medical, the activities of the STARFLEET Medical Corps will generally focus on community health awareness, community health promotion, and home safety issues. So the focus of our efforts are at the community level. Given this, I thought I would share something which I learned about over 25 years ago when I was making choices in terms of what I wanted to pursue in my studies, profession, and community service work.

The health promotion and home safety focus of the STARFLEET Medical Corps Operational Plan for 2015 (along with related volunteer/community service and collaboration with SFI Regions) are in keeping with the general activities of public health.

The information (below) is from Harvard University's School of Public Health: The Distinctions between Public Health and Medicine.

Distinctions between Public Health & Medicine

PUBLIC HEALTH

- Primary focus on populations
- Public service ethic, as an extension of concerns for the individual

- Emphasis on disease prevention and health promotion for the whole community
- Public health paradigm employs a spectrum of interventions aimed at the environment, human behavior and lifestyle, and medical care
- Variable certification of specialists beyond professional public health degree
- Lines of specialization organized, for example, by:
 - *analytical method (epidemiology, toxicology)
 - *setting and population (occupational health, global health)
 - *substantive health problem (environmental health, nutrition)
- Life sciences central, with a prime focus on major threats to the health of populations; research moves between laboratory and field
- Population sciences and quantitative disciplines essential features of analysis and training
- Social and public policy disciplines an integral part of public health education

MEDICINE

- Primary focus on individual
- Personal service ethic, in the context of social responsibilities
- Emphasis on disease diagnosis, treatment, and care for the individual patient
- Medical paradigm places predominant emphasis on medical care
- Uniform system for certifying specialists beyond professional medical degree
- Lines of specialization organized, for example, by:
 - *organ system (cardiology, neurology)
 - *patient group (obstetrics, pediatrics)
 - *etiology and pathophysiology (infectious disease, oncology)
 - *technical skill (radiology, surgery)
- Biological sciences central, stimulated by needs of patients; research moves between laboratory and bedside
- Numerical sciences increasing in prominence, though still a relatively minor part of training
- Social sciences tend to be an elective part of medical education

URL: <http://www.hsph.harvard.edu/about/public-health-medicine/>
 (Accessed: 3 January 2015)

Public Health Topic #2: Global Public Health Awareness Campaigns

In the "Star Trek" universe, the Federation Council deployed the resources of STARFLEET Command for defensive purposes, to support societal development, and to provide humanitarian assistance throughout Federation space. The view was both inclusive and comprehensive.

In STARFLEET International and the STARFLEET Medical Corps, I believe it's a good idea to remember that our organization is an international fan club which means that we need to be concerned with both local issues and global issues as they impact the purpose of the STARFLEET Medical Directorate (including the STARFLEET Medical Corps). The bumper sticker "Think Globally, Act Locally" comes to mind. I think this is in keeping with the ideals of the "Star Trek" universe which we find in the TV shows and movies.

As the World Health Organization (WHO) notes, "Global public health campaigns offer great potential to raise awareness and understanding about health issues and mobilize support for action, from the local community to the international stage." Below is a list of the WHO's annual global public health awareness campaigns. In the coming year, it might be possible to support a global public health awareness campaign with local efforts in a SFI Region.

- *World TB Day, 24 March
- *World Health Day, 7 April
- *World Immunization Week, last week of April
- *World Malaria Day, 25 April
- *World No Tobacco Day, 31 May
- *World Blood Donor Day, 14 June
- *World Hepatitis Day, 28 July
- *World AIDS Day, 1 December

URL: <http://www.who.int/campaigns/en/> (Accessed: 3 January 2015)

Public Health Topic #3: Invitation to share information using HYPOSPRAY

The STARFLEET Medical Corps Command Staff want to invite all members of the Medical Corps and like-minded individuals in the SFI Regions to consider sharing community health awareness and

home safety topics with each other using HYPOSPRAY. Please see the HYPOSPRAY web site for details.

Please consider sharing a topic that is of interest in your region with us. We might be able to use your insights in local community health awareness and home safety programming in the various regions of STARFLEET International. I hope this helps. Let's have fun!

END OF MESSAGE

HYPOSPRAY

Year 2015, No. 2 (Mar-Apr)

Grand Rounds: Global public health awareness campaigns for March and April 2015, (title for Topic #2), (title for Topic 33), and "Star Trek" disease and a possible connection to the real-world

March 1, 2015

Topic #1: Global public health community observes the importance of continued vigilance against communicable diseases, world-wide.

Summary by

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As discussed in the prior edition, the World Health Organization (WHO) organizes eight, global public health awareness campaigns every year. During the months of March and April, there are several global awareness campaigns:

*World TB Day, 24 March

*World Health Day, 7 April

*World Immunization Week, last week of April

*World Malaria Day, 25 April

Below, please find some "highlights" from the WHO pertaining to the four, global public health campaigns for this time-period:

***World TB Day, 24 March**

World TB Day 2015: "Reach the 3 Million: Reach, Treat, Cure Everyone"

Every year, on 24 March, the world marks World TB Day (WTBD), one of the world's top health challenges with 9 million new TB cases and the deaths of nearly 1.5 million people each year. The Day is an occasion to mobilize political and social commitment for further progress towards eliminating TB as a public health burden by 2035.

Scale of the problem

More than 2 billion people, equal to one-third of the world's population are infected with TB - out of this, 1 in 10 will go on to develop TB during their lifetime. Out of the overall 13 million TB cases in 2013, 9 million were new cases but consistently 3 million people were either not diagnosed, not treated, or officially not registered by national TB programs (NTPs). Many of those missed will either die, follow some unknown treatment but most will continue to infect others. Major efforts are needed to close this gap as despite our best efforts, the proportion of missed cases has been nearly the same for the past seven years.

Among those missed are those most vulnerable to falling ill with TB including very poor and/or malnourished or undernourished people, people living with HIV/AIDS, children and women, migrants, prisoners, refugees and internally displaced persons, miners, the elderly, ethnic minorities, indigenous populations, drug users and homeless persons.

What we really mean

The post-2015 End TB Strategy aims to end the TB pandemic by 2035. A dramatic change needs to take place over the next few years in how we fight TB. Our current tools use technology that is old and outdated, with treatment regimens that are long, complicated and with huge side effects, and with a vaccine that is 90 years old and not very effective, with no point-of-care diagnosis. It is an opportunity to start thinking out of the box through several ways. [In particular...]

4. Broadening the spectrum of partners' engagement in the fight against TB by engaging with partners in tobacco, nutrition, diabetes and others as well as non-medical partners to include social development, urban planning, and the private sector.

See this link (<http://www.stoptb.org/>) for more ideas.

Process note: For the STARFLEET Medical Corps we might be able to support local groups in our SFI regions who help the groups at greatest risk for TB on issues of tobacco-use reduction,

better nutrition thru food drives, and community health information related to overall ways to improve health and wellness.

***World Health Day, 7 April**

World Health Day 2015 -
FOOD SAFETY: Campaign at a glance

Every year, the World Health Organization selects a priority area of global public health concern as the theme for World Health Day, which falls on 7 April, the birthday of the Organization.

The theme for World Health Day 2015 will be Food Safety, a theme of high relevance to all people on the planet, and multiple stakeholders, including government, civil society, the private sector, and intergovernmental agencies. Safe food underpins but is distinct from food security. Food safety is an area of public health action to protect consumers from the risks of food poisoning and foodborne diseases, acute or chronic. Unsafe food can lead to a range of health problems: diarrhoeal disease, viral disease (the first Ebola cases were linked to contaminated bush meat); reproductive and developmental problems, cancers. Food safety is thus a prerequisite for food security.

[So what can we do? Here are some examples:]

For Consumers

- Inform yourself. How much do you know about your food?
- *Read the labels when buying and preparing food
- *Familiarize yourself with the dangerous microbiological and chemical agents in your region
- *Learn how to take care when preparing specific foods which can be dangerous if not handled properly (e.g. raw chicken, cassava, etc.)
- *Learn how to prepare and store food from other cultures that you are not familiar with (e.g. sushi)
- Handle, store and prepare food safely
- *Practice WHO's Five Keys to Safer Food when handling and preparing food (keep clean - separate raw and cooked food - cook thoroughly - cook food at safe temperatures - use safe water and raw materials).
- *Avoid overcooking when frying, grilling or baking foods as this may produce toxic chemicals.
- *In your kitchen, store chemical products in a safe place.

*Do not re-use containers that were initially used to store chemicals to store food.

*Practice WHO's Five Keys to Growing Safer Fruits and Vegetables (practice good personal hygiene - protect fields from animal faecal contamination - use treated faecal waste - evaluate and manage risks from irrigation water - keep harvest and storage equipment clean and dry) to decrease microbial contamination when growing fruits and vegetables for your family or community

- Make safe/wise choices

*Take particular care in preparing food for pregnant women, children, the elderly and the sick (those with a weakened immune system)

*Make sure the food you eat is prepared and kept in good hygienic conditions (clean, cooked thoroughly, and kept at the right temperature, i.e. hot or refrigerated/on ice)

*When shopping, keep raw meat, poultry, fish and shellfish away from your basket or your grocery cart and use separate bags for transportation

*When there is any doubt about the safety of drinking water, boil or treat it before drinking.

How to get involved

- What do you want to change and improve? First thing you need to do is understand what the food safety issues are in your community, and what needs to be done. Contact your local food safety authorities for more information.

- Events: If you want to get your community involved, schools, TV shows including cooking segments, public places (like fruit and vegetable markets, public squares) all provide platforms for informative and fun events to raise awareness about food safety.

- Social media: you can engage in an online discussion through Twitter, Instagram, Facebook, YouTube and other platforms, using the #safefood hashtag and share images and stories related to your safe food experience. What does food safety mean in your town and what does it "look" like? Take a photo of your plate of safe food to show us.

See this link (<http://www.who.int/campaigns/world-health-day/2015/event/en/>) for more information.

Process note: For the STARFLEET Medical Corps, some regions may find the "How to get involved" suggestions appealing for local action.

***World Immunization Week, last week of April**

World Immunization Week 2015: Close the immunization gap

24-30 April 2015

World Immunization Week - celebrated in the last week of April (24-30) aims to promote the use of vaccines to protect people of all ages against disease.

Protection throughout life

Immunization is widely recognized as one of the most successful and cost-effective health interventions. It prevents between 2 and 3 million deaths every year and now protects children not only against diseases for which vaccines have been available for many years, such as diphtheria, tetanus, polio and measles, but also against diseases such as pneumonia and rotavirus diarrhoea, 2 of the biggest killers of children under 5. Now adolescents and adults can be protected against life-threatening diseases such as influenza, meningitis, and cancers (cervical and liver), thanks to new and sophisticated vaccines.

But 1 in 5 children is still missing out: in 2013, an estimated 21.8 million infants did not receive lifesaving vaccines. Inadequate supply of vaccines, lack of access to health services, a shortage of accurate information about immunization and insufficient political and financial support all play a part.

Close the immunization gap

World Immunization Week 2015 will signal a renewed global, regional, and national effort to accelerate action to increase awareness and demand for immunization by communities, and improve vaccination delivery services.

This year's campaign focuses on closing the immunization gap and reaching equity in immunization levels as outlined in the Global Vaccine Action Plan (GVAP). The Plan - endorsed by the 194 Member States of the World Health Assembly in May 2012 - is a framework to prevent millions of deaths by 2020 through universal access to vaccines for people in all communities.

See this link (<http://www.who.int/campaigns/immunization-week/2015/event/en/>) for more information.

Process note: For the STARFLEET Medical Corps, perhaps "posting" the vaccine schedule for children and adults might be useful. Additionally encouraging those who are medically-able to strongly consider updating their immunizations/vaccinations after consulting with their medical care provider. The reason why it is important to be vaccinated against vaccine-preventable diseases has to do with the public health science and practice concept of the value of "herd immunity."

***World Malaria Day, 25 April**

On World Malaria Day, WHO is launching a manual to help countries to assess the technical, operational and financial feasibility of moving towards malaria elimination. The new guide, "From malaria control to malaria elimination: a manual for elimination scenario planning", will provide countries with a framework to assess different scenarios and timelines for moving towards elimination, depending on program coverage and funding availability.

Here is the link to the manual:

<http://www.who.int/malaria/publications/atoz/9789241507028/en/>

Process note: Malaria is not common in all parts of SFI, some regions are more prone to this disease than other regions. A disease that is transmitted in a similar way to malaria is dengue. A particular type of infected-mosquito may be the vector for transmitting the disease to people living in a community. STARFLEET Medical Corps members may decide that sharing simple strategies to prevent mosquitos from breeding and protecting people from mosquito bites might be a useful activity.

The above materials (except for the Process notes) were condensed from WHO sources.

Topic #2: Where are age-friendly cities located?

Age-friendly cities

From "Public health round-up" In Bulletin of the World Health Organization (Nov) 2014; 92:776-777. doi:
<http://dx.doi.org/10.2471/BLT.14.011114>

Cities and communities around the world are increasingly taking action to become more age-friendly. Last month [October 2014],

WHO launched a new dedicated website, called Age-friendly World, to support them in these efforts.

An age-friendly city adapts its services and infrastructure so that older people with varying needs and capacities can use them, according to a recent WHO guide on the subject. The idea is to encourage people as they become older to stay active and to give them opportunities to participate in the community.

The new website provides guidance and tools that cities and communities can use when implementing and evaluating age-friendly initiatives. It also provides a forum, where they can share information on projects that are already up and running around the world.

<http://agefriendlyworld.org>

END OF STATEMENT

HYPOSPRAY

Year 2015, No. 3 (May-Jun)

Grand Rounds: Global public health observances and Hepatitis News

Topic #1: Global public health community observes the importance of continued vigilance against tobacco use and safe blood donation, world-wide.

Summary by

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SG, STARFLEET Medical Corps

COL, STARFLEET International (Marine Corps), SFMD

As discussed in the prior edition, the World Health Organization (WHO) organizes eight, global public health awareness campaigns every year. During the months of May and June, there are two global awareness campaigns:

*World No Tobacco Day, 31 May

*World Blood Donor Day, 14 June

Below, please find some "highlights" from the WHO pertaining to the two, global public health campaigns for this time-period:

***World No Tobacco Day, 31 May**

World No Tobacco Day 2015: Stop illicit trade of tobacco products

31 May 2015

Every year, on 31 May, WHO and partners mark World No Tobacco Day (WNTD), highlighting the health risks associated with tobacco use and advocating for effective policies to reduce tobacco consumption.

For World No Tobacco Day 2015, we are calling on countries to work together to end the illicit trade of tobacco products.

From many angles, the illicit trade of tobacco products is a major global concern, including health, legal and economic, governance and corruption.

Scale of the problem

The illicit tobacco market may account for as much as one in every 10 cigarettes consumed globally, according to studies, including information supplied by the global customs community. The European Commission estimates that illicit trade in cigarettes costs the EU and their Member States over €10 billion annually in lost tax and customs revenue.

Illicit trade is not a problem just in high-income countries; almost all countries throughout the world are subject to illicit trade in some form or another. In response to the threat posed by illicit tobacco trade, the international community negotiated and adopted in November 2012 the Protocol to Eliminate Illicit Trade in Tobacco Products, the first protocol to the WHO FCTC.

Goals of the WNTD 2015 campaign

- Raise awareness on the harm to people's health caused by the illicit trade in tobacco products, especially the youth and low-income groups, due to the increased accessibility and affordability of these products due to their lower costs.
- Show how health care gains and programmes, tobacco control policies, like increased tax and prices, pictorial health warnings and other measures are undermined by the illicit trade in tobacco products.

- Demonstrate how the tobacco industry has been involved in the illicit trade of tobacco products.
- Highlight how the illicit trade of tobacco products is a means of amassing great wealth for criminal groups to finance other organised crime activities, including drugs, human and arms trafficking, as well as terrorism.
- Promote the ratification of, accession to and use of the Protocol to Eliminate Illicit Trade in Tobacco Products by all Parties to the WHO Framework Convention on Tobacco Control (WHO FCTC) and its early entry into force through the active involvement of all relevant stakeholders.

The global tobacco epidemic kills nearly 6 million people each year, of which more than 600 000 are non-smokers dying from breathing second-hand smoke. Unless we act, the epidemic will kill more than 8 million people every year by 2030. More than 80% of these preventable deaths will be among people living in low-and middle-income countries.

Key public messages

The illicit trade of tobacco products is detrimental to your health and your interests. Here is why?

1. Illicit tobacco products hook young people into tobacco experimentation and use because they are more affordable. Such illicit products also mislead young tobacco users by not displaying health warnings and sometimes involving children in illegal selling activities.
2. Illicit trade takes tax revenue away from the Government, which could have otherwise been spent on the provision of public services, instead directing such funds into the hands of criminals.
3. Illicit trade strengthens corruption and weakens good governance.
4. Tobacco companies have been known to use loopholes in tobacco control governance systems and indulge in the illicit trade of tobacco products.

Source: <http://www.who.int/campaigns/no-tobacco-day/2015/en/>

Process Note: For members of the STARFLEET Medical Corps, we might consider identifying recent data where members live on tobacco use along with morbidity and mortality data related to smoking. Additionally, working with like-minded persons in the assigned region, develop a list of smoking cessation programs in the local area. Then, distribute in the SFI Region via the RCs, Region Chief for Medical/Health issues, and chapter-level

points-of-contact. Trying to "quit smoking" is tough work. Let's offer compassionate support.

***World Blood Donor Day, 14 June**

World Blood Donor Day 2015: Thank you for saving my life

14 June 2015

2015 World Blood Donor Day campaign

The theme of this year's campaign is "Thank you for saving my life".

It focuses on thanking blood donors who save lives every day through their blood donations and strongly encourages more people all over the world to donate blood voluntarily and regularly with the slogan "Give freely, give often. Blood donation matters."

The campaign aims to highlight stories from people whose lives have been saved through blood donation, as a way of motivating regular blood donors to continue giving blood and people in good health who have never given blood, particularly young people, to begin doing so.

Activities may include commemorative events, meetings, publication / dissemination of relevant stories on media outlets, scientific conferences, publication of articles on national, regional and international scientific journals, and other activities that would help in promoting the theme of this year's World Blood Donor Day (WBDD).

The objectives of this year's campaign are to:

- To thank blood donors for their life-saving donations;
- To promote regular voluntary unpaid blood donation;
- To create wider public awareness of the need for regular donation because of the short shelf-life of blood components;
- To encourage existing and potential donors to donate blood at regular intervals
- To focus attention on donor health and the quality of donor care as critical factors in building donor commitment and a willingness to donate regularly; and

- To persuade ministries of health to show their appreciation of regular voluntary unpaid donors and provide adequate resources to provide quality donor care.

Source: <http://www.who.int/campaigns/world-blood-donor-day/2015/event/en/>

Process note: For members of the STARFLEET Medical Corps, perhaps the most effective activity is to help the Region Chief for Medical/Health Issues and like-minded persons at the chapter-level organize a blood drive. Another activity could be to encourage others to donate blood (and related products) in their local communities, if the individual is medically able to do so.

Public Health Topic #2: Hepatitis News...

"Researchers Find Cheap, Effective Hepatitis Treatment"
by Jessica Berman. Voice of America/Health (online): April 08, 2015

Researchers have discovered that an inexpensive allergy medicine can treat hepatitis C, a serious liver disease.

The medicine is chlorcyclizine HCL, an antihistamine that has been around for a half-century. Researchers at the U.S. National Institutes of Health have found that chlorcyclizine and similar "repurposed" drugs can treat hepatitis C by blocking the virus so it cannot infect liver cells.

The discovery was made using a cell-based, high-throughput screening method. The technique is used to analyze thousands of government-approved compounds quickly for their effectiveness against viral and bacterial infections.

The research is published in the journal Science Translational Medicine.

Jake Liang, chief of the Liver Diseases Branch at NIH's National Institute of Diabetes and Digestive and Kidney Diseases near Washington, where the discovery was made, said that the hepatitis virus "continues to infect new cells as the infection goes on. So, our thought is, if we can prevent or destruct that reinfection process, the infected cells will die eventually, so you would not have any more infected cells."

Hepatitis C is spread through sexual contact or infected blood products. It can lead to liver failure, cancer, and cirrhosis or hardening of the liver.

Millions of people around the world carry the hepatitis C virus or are ill because of it. Liang noted that effective treatments are now available, "but the current drugs are expensive, have side effects and are associated with resistance. Also, these drugs are only active against certain HP strains. So, in light of these issues, I think there's still ... a need in the treatment of hepatitis."

The price tag for current hepatitis C drugs is approximately \$84,000 for a 12-week course. In contrast, chlorcyclizine costs about 50 cents a pill.

Researchers' next step is to determine a therapeutic dose of the antihistamine for treatment of hepatitis C.

<http://www.voanews.com/content/researchers-find-cheap-effective-hepatitis-treatment/2711687.html>

END OF STATEMENT

HYPOSPRAY

Year 2015, No. 4 (Jul-Aug)

Grand Rounds: Good Samaritan Laws, First Aid course, "If your blood sugar numbers are out of control....," An disease from "Star Trek" and a possible connection to real-life, and Invitation to offer a topic for HYPOSPRAY

July 9, 2015

Topic #1: Good Samaritan Laws

Summary by

Dr. Douglas Reagan, PhD, EMT-P

SG Senior Advisor-Administration

BGEN, STARFLEET International (Marine Corps), SFMD

Have you ever come up on the scene of an accident on the side of the road within minutes after it happened? Have you ever seen a child of animal in a vehicle in the parking lot? Too many kids and pets die in hot cars every summer, either left behind by parents and caregivers or by going into an unlocked car. People who walk by a car and see a child in it alone on a warm day can

help prevent tragedies. A recent survey of parents by Public Opinion Strategies for Safe Kids showed that many people are worried about getting involved in such incidents. Some say they are hesitant because they fear a lawsuit.

Please don't let that be a reason to stop you. The large majority of states have a law giving people immunity from a lawsuit if they act to protect a life or answer an emergency. The central focuses of any state's Good Samaritan laws make particular the aspect of acting in good faith, not demanding or receiving compensation for your services, and helping without causing or acting in gross negligence or misconduct.

Even if you are a licensed medical or emergency care provider, you are free of any form of litigation by following your state's Good Samaritan laws, if you attempt to prevent loss of life or further harm to a person in dire need. Check out your own state's laws concerning your ability to render assistance in response during an emergency.

Topic #2: Personal Reactions: Emergency First Aid at Work - Level 2 Course; Attended: 16 June 2015

Summary by
Amanda Barrow
ASG/R20 (UK)
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The 999 operator stayed on the telephone line during the twenty minutes it took the paramedics to arrive. The lady's voice remained calm and the instructions clear.... find the spot at the centre of the chest with the heel of my hand, place the other hand on top and press down for a count of after 20 years the specifics have dimmed.... but in between my compressions, mum breathed life into dad's limp, prostrate form.

Painful memories of that warm August evening surfaced in my mind quite unbidden this morning as I was part of a group gathering around Ann - our practice CPR dummy. Under the watchful eye of our class Emergency First Aid at Work instructor each of us took turns in practicing the rapid pushing down on the chest punctuated by two 'rescue' breathes. It was exhausting. The amount of effort needed to hear Ann's chest click was so much more than anticipated. The positioning tilt of the head was awkward when trying to bend far enough down to perform the two compression breathes required. Yet in the classroom environment, whilst slightly embarrassed to be on ones knees

patting the somewhat docile 'patient' and asking it 'she was alright? And did she need any help?' it was brought home to each one of us the total and absolute importance why we were learning this new skill.

Training in a safe environment is preferable than facing an emergency without any clue what to do and just succumbing to blind panic.

Learning about the 'Recovery Position' threw up some interesting points of interest...it was remarkably easy to turn even a heavier personage using the leverage of the raised knee and arm than first anticipated and that secondly 'arms don't naturally 'do' right angles from the body'.

Although the days course was quite long, it was great mixture of 'how to' videos, and hands on practice and I thoroughly recommend each and everyone to attend this type of training, you just never know when we may have to use our training for real.

Topic #3: "If your blood sugar numbers are out-of-control, you need to see this..."

Summary by
Oliver Savander, Sr.
SG Senior Advisor-Operations
MGEN, STARFLEET International (Marine Corps), SFMD

I came across an eye-catching headline while reading some news items on the internet: "If your blood sugar numbers are out-of-control, you need to see this..." I wasn't really sure about the underlying validity of the claims I read in the internet piece. So I found a textbook to help me better understand the topic.

I found "The Merck Manual Home Health Handbook" by Porter, Kaplan, and Homeier (2009) and found some information on diabetes mellitus among the elderly (Porter, Kaplan, and Homeier 2009, p. 1013). Simply, I learned that diabetes mellitus results from an inability of the human body to produce insulin. The information I read included the usual issues of diabetes management—education, diet, exercise, and the appropriate use medication.

The information on exercise was most interesting (Porter, Kaplan, and Homeier 2009, p. 1013):

Exercise. Older people may have a difficult time adding exercise to their daily life, particularly if they have not been active or if they have a disorder that limits movement, such as arthritis. However, they may be able to add exercise to their usual routine. For example, they can walk instead of drive or climb the stairs instead of take the elevator. Also, many community organizations offer exercise programs designed for older people.

For me, I hope my medical provider and I can find some type of exercise plan that will work for where I am in my life.

Topic #4: A Medical Science Case Study from Star Trek: Enterprise—Pa'nar Syndrome and a possible, associated "real-world" disease

Summary by

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Medical Science Case Study from Star Trek: Enterprise

While attempting to discreetly obtain information on Pa'nar Syndrome from Vulcan Doctors Yuris and Strom in 2152 in order to provide continued medical treatment to Sub-Commander T'Pol, Dr. Phlox noted that one of his colleagues on Denobula had been studying it for some time and found that it had a pathology quite similar to thymic sclerosis.

From Star Trek: Enterprise; episode: "Stigma."

Source: memory-alpha.org

Possible real-world association

Introduction

In the case study at the left, Dr. Phlox requested additional information from Vulcan Doctors about the fictional disease Pa'nar Syndrome. He determined that the pathology of that disease was similar to another fictional disease thymic sclerosis. In the episode, Pa'nar Syndrome was causing neurological damage to Sub-Commander T'Pol.

The fictional disease thymic sclerosis uses the word, sclerosis, in its description. In the "real-world," a sclerosis is generally understood to refer to a condition where the tissue of

the body becomes hard from scarring of the injured tissue. Multiple Sclerosis (MS) is a neurological disease that has an interesting pathology and epidemiology. It is possible that the "real-world" disease MS (or something like it) may have been the basis for the fictional diseases Pa'nar Syndrome and thymic sclerosis. Moreover, concepts from pathology and epidemiology are useful for the scientific study and control of disease, both in the "real-world" and in the Star Trek universe.

Pathology, from a medical perspective, is the scientific study of disease. From the standpoint of pathology, knowing about the etiology, pathogenesis, morphological changes, and functional derangements of a disease are important considerations to better understand a disease in order to provide medical treatment to an individual patient. Additionally, from a public health perspective, epidemiology is the study of the disease patterns in the population and using this knowledge to prevent and or control disease spread in the community or population. An important consideration to the study and practice of public health is preventing disease and promoting health in the population. Let's take a closer look at MS.

Overview

Multiple sclerosis (MS) is a disease of the central nervous system characterized by the destruction of the myelin sheath surrounding neurons, resulting in the formation of plaques. MS is a progressive and usually fluctuating disease with exacerbations (patients feeling worse) and remissions (patients feeling better) over many decades. In many patients with MS, permanent disability and even death can occur. The exact cause of MS is still unknown.

I summarize some basic facts we should know about Multiple Sclerosis which have been taken from the sources indicated at the end of this piece:

Etiology: the cause of a disease

Although the cause of the disease is unknown, the most widely held hypothesis pertaining to the cause of MS is that the disease occurs in individuals with a genetic susceptibility and is triggered by certain environmental factors; it is believed to be an autoimmune disease, in which the body's immune system attacks its own tissues.

Pathogenesis: the means by which the cause results in the pathological or clinical outcome

Damage to the myelin sheath that protective nerve cells around the brain and spinal cord leads to MS. When this nerve covering is damaged, nerve signals slow down or stop.

The nerve damage is caused by inflammation. From pathology, we know that inflammation occurs when the body's own immune cells attack the nervous system; this can occur along any area of the brain, optic nerve, and spinal cord.

It is unknown what exactly causes this series of events to happen. The most common thought is that a virus or gene defect, or both, are to blame. Environmental factors may play a role. An individual is slightly more likely to get MS if you have a family history of the disease or live in a part of the world where MS is more common.

Basic morphology: structural changes in the cells or tissue that occur following the pathogenetic mechanisms

- MS is a white and gray matter disease of the brain.
- Affected areas show multiple, well-circumscribed, slightly depressed, glassy, gray-tan, irregularly shaped lesions, termed plaques.
- They occur beside ventricles and they are frequent in the optic nerves and chiasm, brain stem, ascending and descending fiber tracts, cerebellum and spinal cord.

Functional derangements: symptoms and signs of disease

Symptoms vary, because the location and severity of each attack can be different. Attacks of MS can last for days, weeks, or months. Attacks are followed by periods of reduced or no symptoms (remissions). Fever, hot baths, sun exposure, and stress can trigger or worsen attacks.

Nerves in any part of the brain or spinal cord may be damaged. Because of this, MS symptoms can appear in many parts of the body.

The Mayo Clinic reports a few typical symptoms of MS to include:

- Numbness or weakness in one or more limbs that typically occurs on one side of your body at a time, or the legs and trunk

- Partial or complete loss of vision, usually in one eye at a time, often with pain during eye movement
- Tingling or pain in parts of your body
- Tremor, lack of coordination or unsteady gait
- Slurred speech
- Fatigue

Treatment: the clinical course of action recommended by the clinician to address the disease

Although there is no known cure for multiple sclerosis at this time, there are treatments that may slow the disease. The goal of treatment is to control symptoms and help you maintain a normal quality of life. (If interested in these treatment options, please consult with a clinician.)

Epidemiology: disease patterns of disease in the population and disease control measures

Epidemiological studies have helped to identify factors that may be related to the risk of developing MS, such as latitude, migrations patterns, genetics and infectious processes.

According to the Atlas of MS (developed by the Multiple Sclerosis International Federation) there are about 2.1 million people in the world with MS, although the number may be much higher as it is likely that many people with MS remain undiagnosed in certain parts of the world. It is found in all parts of the world, including Asia and Africa, although it is more common among Caucasians, particularly people of Northern European descent. Despite being widespread, it is almost unheard of in certain populations such as the Inuits, New Zealand Maoris and Australian Aborigines.

This disease affects more women than men by at least 2-3 times, suggesting a role of hormones in the disease process. Most people are diagnosed between the ages of 25-35, although around 3-5% of people with MS are diagnosed as children and it can also occur in significantly older adults. Since MS is not widely recognized as a childhood disorder, diagnosis is often missed or delayed. In addition, many of its symptoms are similar to those of other pediatric neurological conditions, leukodystrophies, and metabolic disorders. Diagnosis in childhood is difficult due to the lack of universally accepted diagnostic criteria.

Concluding comments

Although not discussed in detail during the episode, when Dr. Pholx said that the pathology of fictional disease Pa'nar Syndrome was similar to the pathology of the fictional disease thymic sclerosis, the concepts of pathology and epidemiology may have been tacitly used by Federation clinicians and medical scientists.

The health themes of Star Trek are interesting and entertaining to me, and, sometimes, help me better understand the similar themes or phenomena in the "real-world."

(Note: the following information is not medical treatment advice but just interesting information about this disease)

Works consulted

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Doring A, et al. Exercise in multiple sclerosis-an integral component of disease management. The EPMA Journal 2012 3:2

Loma I, Heymen R. 2011. "Multiple sclerosis: pathogenesis and treatment." Curr Neuropharmacol Sep (9):409-16

Mayo Clinic-Diseases and Conditions. Entry: Multiple sclerosis. URL: <http://www.mayoclinic.org/diseases-conditions/multiple-sclerosis/basics/symptoms/con-20026689>

Multiple sclerosis international federation. Entry: Epidemiology of MS. URL: <http://www.msif.org/global-ms-research/current-ms-research-areas/epidemiology-of-ms.aspx>

NIH PubMed Health, A.D.A.M. Medical Encyclopedia. Entry: Multiple sclerosis. URL: <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001747/>

Public Health Topic #5: Invitation to share information using HYOSPRAY

The STARFLEET Medical Corps Command Staff want to invite all members of the Medical Corps and like-minded individuals in the SFI Regions to consider sharing community health awareness and home safety topics with each other using HYOSPRAY. Please see the HYOSPRAY web site for details.

Please consider sharing a topic that is of interest in your region with us. We might be able to use your insights in local community health awareness and home safety programming in the various regions of STARFLEET International. We hope this helps. Let's have fun!

END OF MESSAGE

HYPOSPRAY

Year 2015, No. 5 (Sep-Oct)

Grand Round topics: Living with Fibro; Helping someone in an emergency; Topics in general wellness

Topic #1: Living with Fibro

Summary by
Amanda Barrow
ASG/R20 (UK)
LCDR, STARFLEET International, SFMD

July of 2015 marked the 10th Anniversary of the date when I was actually diagnosed with Fibromyalgia.

Fibromyalgia, also, called fibromyalgia syndrome (FMS), is a long-term condition that causes pain all over the body. In addition to the widespread pain, I, also, suffer with:

- increased sensitivity to pain
- fatigue (extreme tiredness)
- muscle stiffness
- difficulty sleeping
- problems with mental processes (known as "fibro-fog") - such as problems with concentration, and memory loss
- headaches
- irritable bowel syndrome (IBS) - a digestive condition that causes stomach pain and bloating

Fibro is not hereditary?

Actually, there seems to be little that physicians do know about this condition - and no two people will suffer with the exact same symptoms, but one thing they do seem certain about is that it is not hereditary. Odd that, because my aunts have it, my cousins have it, my sisters have it, my brother has it, and my

mum thinks she has it - but we think its arthritis (but mum is another story for another time).

So you can imagine what it is like when we all get together. You would think it a pretty miserable time when we have the annual family assemblies - but actually no, each of us in is determined to enjoy life to the full. Diet (what to eat/ what to avoid) is always a favourite topic, as is forms of exercise - obviously marathons are out of the question - but a gentle stroll to the top of the driveway is a hotly debated topic.

For me though - like many of us I know who are reading this... even before getting out of bed each morning is where the battle to live begins. Many of us, like me, rely on loved ones to get us through the worst of days and make the most of those brief interludes when the pain is under control.

Sensible Diet and Gentle Stretches

For me though I really, really HAVE to pay attention for my diet, no white bread (my sister calls it 'licensed cyanide) no tomatoes, no cakes, no pineapples, actually the list is quite endless and comprehensive but over the years and by trial and error I have just about sorted out what makes the pain worse and what really works.

The other part of my life that I have had to change quite significantly is the form of exercise I can undertake. Long gone are the days when I could spend a couple of hours in the gym or swim 40 odd lengths in the pool (without stopping)... So I have had to find other forms of exercise and one thing that I have found absolutely wonderful is Tai Chi. Not only does it Tai Chi allow for the muscles taut with lactic acid to stretch and flex - but I have found it is a wonderful way to meditate and allow the much overwork tired brain cells to become calmer and clearer.

If you want to learn more about Fibromyalgia, then please visit the links (below):

UK Fibromyalgia

URL: <http://www.ukfibromyalgia.com/>

Fibromyalgia-NHS Choices

URL:

<http://www.nhs.uk/Conditions/Fibromyalgia/Pages/Diagnosis.aspx>

Topic #2: Helping someone in an emergency

Summary by

Oliver Savander, Sr

SG Senior Advisor-Ops

MGEN, STARFLEET International (Marine Corps), SFMD

As a retired Fire Chief at a small local fire department in Florida, the "Good Samaritan" piece we read last month reminded me that there is a similar issue in the Health and Safety arena, as well. Is there an obligation for me to act as a public safety person when I am needed? I remember reading such a piece just last year.

Please let me share with you a section of the blog post I found:

Duty to Act: Legal Obligation vs. Community Expectations
by Anthony Mangeri, MPA, CPM, CEM

March 5, 2014

Over the years, there have been several stories of public safety personnel, on and off duty, failing to meet the response expectations of their community. A recent incident in the District of Columbia involving the death of a man who collapsed near a fire station and not receive immediate aid, made it even more unclear if emergency responders have a legal duty to act versus an expectation by the community to aid those who seek help.

The term Duty to Act is a legal term that defines an individual or organization's legal requirement to take action to prevent harm to a person or the community as a whole.

Events like the D.C. incident stirs debate about who has a legal duty to act and what that obligation actually means. More importantly, there can be a conflict between the legal obligation to respond and the community's expectation of response.

Firefighters and emergency responders are hired/selected, trained, and funded by the community to respond to the public's request for assistance in time of emergency. Even a department's mission statement may establish a legal duty or relationship between the fire or rescue department and the community.

Legal Reality on Duty to Act

In 1981, the District of Columbia Court of Appeals ruled in *Warren vs. District of Columbia* (444 A.2d. 1, D.C. Ct. of Ap., 1981). The Court stated that it is a "fundamental principle of American law that a government and its agents are under no general duty to provide public services, such as police protection, to any individual."

A quick review of state statutes found that very few states actually have laws that mandate a duty to act. Such statutes, which require an individual to respond to another being harmed, are relatively new.

EMS responding

Duty to Act laws often emerges from cases of individuals standing by while others are injured. Vermont was one of the first states to pass a Duty to Act legislation and has one of the most clear and specific statutes. Vermont statute 519(a) states:

A person who knows that another is exposed to grave physical harm shall, to the extent that the same can be rendered without danger or peril to himself or without interference with important duties owed to others, give reasonable assistance to the exposed person unless that assistance or care is being provided by others.

The law goes on to say that a person who provides reasonable assistance as listed above shall not be liable for civil damages unless his acts constitute gross negligence or unless he will receive, or expects to receive, remuneration.

Minnesota has very similar legislation to Vermont. Each state has embedded Duty to Act into the state's Good Samaritan statutes.

These statutes seem to be very clear. However, it will be up to a court to determine the details and application of the statute based on the situation. There have been numerous "duty to act/failure to act" cases that have reached our courts. Many times, courts have ruled that there is no duty to act unless a duty is created by statute or by actions of the agency or personnel, which creates a duty.

The Public's Expectations of Duty to Act

Perhaps more importantly, is the public's expectation of how firefighters, emergency medical services, and other emergency professionals respond to requests for help.

What are the expectations of your community leaders and the public as a whole?

There are few simple answers and many of the issues are dependent on the laws of your state and the standards within your community. There appears to be neither national standards nor laws that would require public safety professionals to respond. However, once engaged, there are many requirements to render care.

Regardless of the law, there most likely will be a community expectation to render care when a person is in need. Moreover, nothing can destroy confidence in an emergency service organization more than to appear thoughtless and uncaring. This impact to the reputation of the organization can result in reduced funding and even community outcry for changes in leadership. Jurisdictions must research how their state statutes define a responder's duty to act both on and off duty.

(More can be found here:

<http://inpublicsafety.com/2014/03/duty-to-act-legal-obligations-vs-community-expectations/>)

In a way, the concepts of the "Good Samaritan" and "Duty to Act" reminded me of a comment which the character Jean-Luc Picard made in ST:TNG "Pen Pals." Remember, Data was about to sever the communications links with the little girl Sarjenka when she made a call for help to Data. Picard heard this and said, "That whisper in the darkness has become a plea. We cannot turn our backs."

It seems to me that if we know how to help someone in-need-of-assistance in an emergency—because we've taken a "first aid" course, for example—then, maybe, we should help. Helping someone in-need in an emergency because we are a concerned person who can render some type of assistance in that emergency situation seems "okay" to me until professional EMS/Fire & Rescue arrive on the scene to take-over.

Professional fire and rescue personnel, who are licensed to act in emergency situations, may render assistance using a different set of considerations in an emergency situation.

Topic #3: Topics in General Wellness

Summary by

Dr. Gregory Fant, PhD, MSHS

SG, STARFLEET Medical Corps

COL, STARFLEET International (Marine Corps), SFMD

(Note: This particular statement is reproduced here from "Flight Surgeon's Journal Update" URL:

<http://fsusstiberius.org/flight-surgeon-updates/>)

By taking steps to keep healthy in body, mind, and spirit throughout the year, our bodies will "be ready" for planned vacations or a last-minute trip with our family and/or friends. In this first-part of a two installment piece, please allow me to share what I have found on the topic of general wellness which we can consider.

The following are some "healthy living tips" from The Merck Manual of Health—Home Health Handbook (2009):

Diet and Nutrition

- *Eat less, particularly less sugars, simple carbohydrates, trans fats
- *Eat more fruits, vegetables and whole grains
- *Vary your diet
- *If your medical condition requires a special diet, follow it.

Substance Use

- *Don't smoke
- *Drink alcohol only in moderation, if at all
- *Don't take any drugs that aren't intended to treat a medical problem

Vitamins and Supplements

- *If you're a breast-fed baby, take Vitamin D; if you're a bottle-fed baby, use formula with iron
- *If your over 50 years old, take calcium and Vitamin D
- If you're pregnant (or thinking of becoming pregnant), take prenatal vitamins

Exercise and Sleep

*Do 30 to 60 minutes of structured exercise (aerobic and resistance) that is appropriate for your age and medical condition (fun is good) at least 3 times per week

*Walk more-and take the stairs

*Keep as regular a sleep schedule as possible

Citation

Porter RS, Kaplan JL, Homeier BP. 2009. The Merck Manual of Health-Home Health Handbook. Whitehouse Station, NJ: Merck & Co., Inc.

END OF MESSAGE

HYPOSPRAY

Year 2015, No. 6 (Nov-Dec)

Grand Rounds: World AIDS Day Statement, Cancer Stories, A-fib-Things I Didn't Know and Want To Share, Medical Holograms, Common Signs of Stroke, Flu Pandemic Preparation, Identifying and Preventing Non-emergent Hypoglycemia

Topic #1: World AIDS Day statement

By

Dr. Gregory Fant, PhD, MSHS

SG, STARFLEET Medical Corps

COL, STARFLEET International (Marine Corps), SFMD

December 1, 2015, will be World AIDS Day. The members of the STARFLEET Medical Corps wish to mark this day with a brief statement.

UNAIDS provides a summary of the global AIDS Epidemic in the figure (see next page):

Global summary of the AIDS epidemic | 2014

Number of people living with HIV	Total	36.9 million [34.3 million – 41.4 million]
	Adults	34.3 million [31.8 million – 38.5 million]
	Women	17.4 million [16.1 million – 20.0 million]
	Children (<15 years)	2.6 million [2.4 million – 2.8 million]

People newly infected with HIV in 2014	Total	2.0 million [1.9 million – 2.2 million]
	Adults	1.8 million [1.7 million – 2.0 million]
	Children (<15 years)	220 000 [190 000 – 260 000]

AIDS deaths in 2014	Total	1.2 million [980 000 – 1.6 million]
	Adults	1.0 million [760 000 – 1.8 million]
	Children (<15 years)	150 000 [140 000 – 170 000]



In September 2015, UNAIDS called for continued support of the “UNAIDS Fast-Track approach to finding new and innovative ways of delivering essential health care to people most in need.” In the data presented above, we note the number of young people living with and infected with HIV around the world. We support global efforts aimed at HIV prevention, treatment, care and support of adolescents and youth at-risk of HIV exposure.

A key concern for us is what can be done in the communities where SFI members live to bring about the prevention and treatment of young people at risk of exposure to HIV. Where local, public health professionals needs the support of community members in efforts to both educate young people on ways to prevent exposure to HIV and provide treatment, we encourage SFI members to consider the best ways to support these professionals in their work.

There are, also, two actions which we, as individuals, might consider. First, we can take steps to learn about the ways in which HIV is contracted; the World Health Organization has health education information that describes how HIV is acquired and which all of us can learn. Second, and most important, we can each show genuine compassion, understanding, and, where possible, assistance for young people living with HIV/AIDS.

Until biomedical research finds a cure for HIV/AIDS that medical professionals can then use to treat this disease, public health measures (such as community health education) aimed at

preventing further spread of HIV/AIDS is something we can support and implement as the global public health community works to remove HIV/AIDS from the world by 2030.

Topic #2: Coping—Cancer Stories

Human Interest: Cancer Story—a blog

By
Amanda Barrow
ASG/R20 (UK)
LCDR, STARFLEET International, SFMD

(Reprint from ASG/R20 webpage: September 28, 2015)

I came across this blog the other day “Cancer Story – Research on effectiveness of herbs and alternative therapies for cancer” (URL: <http://cancercaresmalaysia.com/>).

Several beloved people in my life have been attacked by Cancer. Surprisingly a very small number survived (much to our great relief and joy). A very dear friend is our latest joyousness, and, in a couple of weeks’ time, the five of us will be meeting up to celebrate not only her life but to catch up on a year’s worth of news and gossip, to put the ailing world to rights and very probably to indulge in a couple of glasses of a very fine red wine.

During the time from her diagnosis, through the (seemingly) endless treatments, surgery, more chemo, hair loss, and trips to the hospital, Beloved faced a raft of incredibly hard choices, including having to decide whether to have both breasts removed or undergo radical chemo which would make her incredibly sick. Incredibly sick, along with the loss of her hair. Beloved has braved all of this with fortitude, grace and determination. Unlike me (and the rest of our group).

I suspect next weekend will be very emotional for us all. I know that I, for one, haven’t coped very well with her illness. I want to hear her story, indeed more than [ever] I NEED to hear her story. I don’t think the shock will go away, and I am probably alone in this when I say that being on the outside, with all the feelings of helplessness and futile frustration has to be worse than being the patient themselves.

My younger sister too is battling, not cancer, but something equally as insidious, degenerative bone disease. Her choices?

To undergo radical surgery to fuse the neck spinal bones - which doctors say will probably leave her paralyzed from the neck down or do nothing. The doctors have not given her an alternative, no medicine, no other treatments, nothing...so my sister has researched and researched, visited medical doctors, and her conclusions are quite intriguing.. Beloved 3 has adopted a simple lifestyle - which for many of us means "radical". Out has gone processed foods, white flour, cakes, beef, pork and in has come fruit for breakfast; vegetables, vegetables and more vegetables. Together, we have been experimenting with spelt and corn flour - often neither of us can tolerate the 'additional' ingredients that hide in brought food. Beloved 3 maintains that the "cheap - quick fix processed foods" we buy from our supermarkets is slowly killing us. I suspect she may have a point.

[Note: The World Health Organization has a list of health topics for us to review, as needed: <http://www.who.int/topics/en/>]

Topic #3: A-fib: What I didn't know and would like to share

By

Oliver Savander, Sr.

SG Senior Advisor-Ops, STARFLEET Medical Corps

MGEN, STARFLEET International (Marine Corps), SFMD

The World Health Organization describes a stroke as:

A stroke is caused by the interruption of the blood supply to the brain, usually because a blood vessel bursts or is blocked by a clot. This cuts off the supply of oxygen and nutrients, causing damage to the brain tissue.

The most common symptom of a stroke is sudden weakness or numbness of the face, arm or leg, most often on one side of the body. Other symptoms include: confusion, difficulty speaking or understanding speech; difficulty seeing with one or both eyes; difficulty walking, dizziness, loss of balance or coordination; severe headache with no known cause; fainting or unconsciousness.

Source: http://www.who.int/topics/cerebrovascular_accident/en/

If you've been diagnosed with atrial fibrillation, you know your heart rate or rhythm is irregular. Do you also know that your stroke risk is now higher?

I found this article (below) where a heart expert explains the connection between A-Fib and stroke and which I would like to share:

http://www.livescript.com/health/centers/atrial_fibrillation/articles/atrial_fibrillation_linked_to_stroke_risk.aspx

Topic #4: Are medical holograms part of science-fiction, only?

By
De Rush
ASG/R4
FCAPT, STARFLEET International, SFMD

Are medical holograms a part of science-fiction, only? We remember the character from ST: Voyager called "The Doctor" (URL: [https://en.wikipedia.org/wiki/The_Doctor_\(Star_Trek:_Voyager\)](https://en.wikipedia.org/wiki/The_Doctor_(Star_Trek:_Voyager))) and played by Robert Picardo.

But are medical holograms closer to reality than we think? That's the question I asked myself as I reviewed this online video, entitled, "Future Doctors Could Be Learning With Holograms." Please let me share this with you:

<http://www.vocativ.com/video/culture/science/future-doctors-could-be-learning-with-holograms/>

Wow...how interesting is this?

Topic #5: Common Signs of Stroke: Quick Identification

By
Dr. Douglas Reagan PhD, EMT-P
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BGEN, STARFLEET International (Marine Corps), SFMD

THINK YOU KNOW SOMEONE ELSE IS HAVING A STROKE?
CALL 9-1-1 IMMEDIATELY!

F.A.S.T. is an easy way to remember the sudden signs of a stroke. When you spot the signs, you'll know that you need to call 9-1-1 for help right away.

F.A.S.T. is:

F Face Drooping -- Does one side of the face droop or is it numb? Ask the person to smile. Is the smile uneven?

A Arm Weakness -- Is one arm weak or numb? Ask the person to raise both arms. Does one arm drift downward?

S Speech Difficulty -- Is speech slurred? Is the person unable to speak or hard to understand? Ask the person to repeat a simple sentence, like "The sky is blue." Is the sentence repeated correctly?

T Time to call 9-1-1 -- If someone shows any of these symptoms, even if the symptoms go away, call 9-1-1 and get the person to the hospital immediately.

Check the time so you'll know when the first symptoms appeared.

Additional information: <http://www.cdc.gov/Stroke/index.htm>

Topic #6: Flu Pandemic Preparation

By

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Team Leader for Public Health Emergency Issues Team

STARFLEET Medical Corps

LT, STARFLEET International, SFMD

Flu Pandemic - What to Expect & How to Prepare

Though the first worldwide flu pandemic of the 1900's was the worst (The Spanish Flu of 1918 that took 50 million lives), we continue to struggle with them at irregular intervals, with the next ones following in 1957 and 1968. Then, only six years ago in 2009, we were stunned by the H1N1 "Swine Flu", that spread quickly across the U.S. and the world. It was a public health emergency, with 74 countries involved. A whopping 43-89 million people were affected by it, with 8-18 thousand dead. Although the vaccine supply was limited at first, 80 million finally received it, lessening the impact of this deadly foe. It was over by August, 2010.

A flu virus is mostly spread from coughing and sneezing, as virus droplets may be breathed in or touched by our hands. A pandemic can last for several months and the sick will likely be cared for at home as the hospitals handle the worst cases. This is why it is so important to make plans and share those plans with family members or other possible caretakers.

Now that we've been through such experiences in our generation, and with the advent of the Information Age and world wide web, we are now more organized and can disseminate information quickly on how to prepare and react in case of a future

epidemic, for individuals, communities, health professionals and governments. Read the sources at the bottom of this article for more detailed information.

Here are some key tips:

BEFORE A PANDEMIC:

Store:

- A two-week supply of food and water for you, your family and pets
- Health supplies (prescription drugs, pain relievers, cold medicine, vitamins, electrolyte fluids, tissues, thermometer, soap, hand sanitizer and face masks)
- Copies of health records (Online locator: <http://healthit.gov/bluebutton>)
- List of phone numbers and email addresses for important contacts

Plan:

- Talk to family members about their needs and plans for care
- Find out your company's policy and plans and your options for working at home during a pandemic. Check with your children's schools also.
- Get involved in the community
- Consider volunteering with local groups

DURING A PANDEMIC:

- Avoid or limit close contact with people who are sick
- Stay home if you are sick
- Wash your hands OFTEN
- Mouth and nose - Use a tissue when coughing or sneezing and avoid touching your mouth, nose and eyes

We all have a part to play to do our best to protect ourselves, our loved ones and our communities that will reduce the impact and lessen the spread across the world. We can make a difference. Be informed and be ready!

"An ounce of prevention is worth a pound of cure." – Benjamin Franklin

Sources for this article or further reading:

<http://www.ready.gov/pandemic>

<http://www.flu.gov/pandemic/history/>

<http://www.flu.gov/planning-preparedness/community/index.html>

www.flu.gov/planning-preparedness/community/nextflupandemic.pdf

www.flu.gov/planning-preparedness/community/plannow.pdf

Topic #7: Personal Health Information-Identifying and Preventing Non-emergent Hypoglycemia

By

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USS Liberty/R1

What is it?

Hypoglycemia is the condition that occurs when someone, most especially a diabetic, has abnormally low blood sugar levels. For most people, a blood sugar below 70 mg/dL is considered hypoglycemia, though poorly-controlled diabetics might experience the symptoms at higher levels. This is due to their average blood glucose remaining much higher than a non-diabetic's.

What can happen?

Low blood sugar is a serious condition that should be treated right away. When someone is hypoglycemic, they are not in full control of their actions, which could lead to serious consequences, such as driving impaired. If low blood sugar is not addressed, the person can even experience a seizure or lose consciousness.

How do I recognize it?

Typical symptoms of hypoglycemia include confusion, mood change, sweating, dizziness, tremor, and visual disturbances. However, some people may be hypoglycemic and not experience any symptoms, which is one reason why diabetics should check their blood sugar routinely. These symptoms typically go away when the person receives treatment in the form of a quick administration of sugar (in the form of glucose).

Treat with the Rule of 15

If someone is hypoglycemic, they should remember the "Rule of 15," which refers to providing 15 grams of quickly absorbed carbohydrates and checking the blood sugar again in 15 minutes.

Readily available sources of these emergency carbohydrates include half a can of regular soda or half a glass of juice.

Sugar-free versions of soda and juice will not work, of course. Alternatively, diabetics can also carry glucose tablets (available at any pharmacy over the counter) with them. Diabetics should avoid slowly absorbed carbohydrates, such as a peanut butter sandwich, as these will not provide relief in an emergent situation.

After receiving treatment, the person's blood sugar levels should be close to or above 100 mg/dL when checked again in 15 minutes. The person should then eat their next meal as scheduled. If the person is still hypoglycemic, repeat the process. If they are still hypoglycemic after two administrations of carbs, they should seek medical attention.

The best treatment is prevention

Diabetic medical treatments can be complex, ranging the gamut from oral medications to intricate insulin and other injectable regimens. Certain diabetic medications called sulfonylureas, for example, cause the pancreas to release insulin and are taken ahead of meals to help ensure the sugars from the meal are properly used by the body. If someone takes glipizide (one such drug), and forgets to eat, the pancreas will still release the insulin, even in the absence of newly absorbed sugar from a meal, and the person can wind up with a much lower blood sugar as a result. Short-acting insulins also should be taken ahead of meals, and meals must not be skipped if the insulin is taken. It is beyond the scope of this article to go further into medication management, but patients are strongly recommended to contact their pharmacist or provider to discuss their diabetes management and how best to use their medications.

References:

ADA: hypoglycemia (low blood glucose) [Internet]. Alexandria: American Diabetes Association; 2015 July 1. Available from: <http://www.diabetes.org/living-with-diabetes/treatment-and-care/blood-glucose-control/hypoglycemia-low-blood.html>

Joslin Diabetes Center: how to treat a low blood glucose [Internet]. Boston: Joslin Diabetes Center; 2015. Available from: [http://www.joslin.org/info/how to treat a low blood glucose.html](http://www.joslin.org/info/how_to_treat_a_low_blood_glucose.html)

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