

## 1: Moving Toward an (Almost) Opioid-Free Emergency Department

*Find helpful customer reviews and review ratings for The Medicine of Er: Or, How We Almost Die at [www.enganchecubano.com](http://www.enganchecubano.com) Read honest and unbiased product reviews from our users.*

URL of this page: An overdose may result in serious, harmful symptoms or death. If you take too much of something on purpose, it is called an intentional or deliberate overdose. If the overdose happens by mistake, it is called an accidental overdose. Your health care provider may refer to an overdose as an ingestion. Ingestion means you swallowed something. An overdose is not the same as a poisoning, although the effects can be the same. Poisoning occurs when someone or something such as the environment exposes you to dangerous chemicals, plants, or other harmful substances without your knowledge. Information An overdose may be mild, moderate, or serious. Symptoms, treatment, and recovery depend on the specific drug involved. In the United States, call to speak with a local poison control center. This hotline number will let you talk to experts in poisoning. They will give you further instructions. You should call if you have any questions about an overdose, poisoning, or poison prevention. You can call 24 hours a day, 7 days a week. At the emergency room, an examination will be performed. The following tests and treatments may be needed: Activated charcoal Airway support, including oxygen, breathing tube through the mouth intubation , and breathing machine ventilator Blood and urine tests CT computed tomography, or advanced imaging scan EKG electrocardiogram, or heart tracing Fluids through a vein intravenous or IV Laxative Medicines to treat symptoms, including antidotes if one exists to reverse the effects of the overdose A large overdose can cause a person to stop breathing and die if not treated right away. The person may need to be admitted to the hospital to continue treatment. If you receive medical attention before serious problems with your breathing occur, you should have few long-term consequences. You will probably be back to normal in a day. However, an overdose can be deadly or can result in permanent brain damage if treatment is delayed. Concepts and Clinical Practice. General approach to the poisoned patient. Textbook of Adult Emergency Medicine. Elsevier Churchill Livingstone; Toxicology and therapeutic drug monitoring.

### 2: Medicine of Er: How We Almost Die by Alan Duncan Ross

*For the millions of people who love ER, this insider's look at the thrilling, dramatic, and sometimes downright crazy world of the emergency room reveals the facts behind the fiction, deciphering the lingo, recounting true stories of bizarre accidents, exposing some of the funny--and not so funny.*

URL of this page: The episode most often lasts less than a couple of minutes and you usually recover from it quickly. The medical name for fainting is syncope. Considerations When you faint, you not only lose consciousness, you also lose muscle tone and the color in your face. Before fainting, you may feel weak and nauseated. You may have the sense that your vision is constricting tunnel vision or noises are fading into the background. Causes Fainting may occur while or after you: Cough very hard Have a bowel movement especially if you are straining Have been standing in one place for too long Urinate Fainting can also be related to: Emotional distress Severe pain Other causes of fainting: Certain medicines, including those used for anxiety, depression, and high blood pressure these drugs may cause a drop in blood pressure Drug or alcohol use Rapid and deep breathing hyperventilation Low blood sugar Sudden drop in blood pressure such as from bleeding or being severely dehydrated Standing up very suddenly from a lying position Less common but more serious reasons for fainting include heart disease such as abnormal heart rhythm or heart attack and stroke. These conditions are more likely in people over age For example, if you know the situations that cause you to faint, avoid or change them. Get up from a lying or seated position slowly. If having blood drawn makes you faint, tell your provider before having a blood test. Make sure that you are lying down when the test is done. You can take immediate treatment steps when someone has fainted: If necessary, call and begin rescue breathing and CPR. Loosen tight clothing around the neck. If the person has vomited, turn him or her onto their side to prevent choking. Keep the person lying down for at least 10 to 15 minutes, preferably in a cool and quiet space. If this is not possible, sit the person forward with the head between the knees. When to Contact a Medical Professional Call if the person who fainted: Fell from a height, especially if injured or bleeding Does not become alert quickly within a couple of minutes Is pregnant Has diabetes check for medical identification bracelets Feels chest pain, pressure, or discomfort Has a pounding or irregular heartbeat Has a loss of speech, vision problems, or is unable to move one or more limbs Has convulsions, a tongue injury, or a loss of bladder or bowel control Even if it is not an emergency situation, you should be seen by a provider if you have never fainted before, if you faint often, or if you have new symptoms with fainting. Call for an appointment to be seen as soon as possible. If someone saw the fainting episode, their description of the event may be helpful. The physical exam will focus on your heart, lungs, and nervous system. Your blood pressure may be checked while you are in different positions. People with a suspected arrhythmia may need to be admitted to a hospital for testing. Tests that may be ordered include: Blood tests for anemia or body chemical imbalances Cardiac rhythm monitoring.

*Top 10 Actors Of Hollywood Who Almost Died on Set And Still Didn't Give Up Shooting Funny Scary Pranks Elevator Gone Wrong Almost Died But Funny Videos New Scary Compilation HD.*

How New Policies Are Affecting Medical Specialties Moving Toward an Almost Opioid-Free Emergency Department How one ED created an acute pain fellowship program that helped retrain the department in alternative treatments for acute pain—only using opioids when other therapies have failed. By Laurie Tarkan Page 1 of 2 One emergency department in New Jersey has taken the lead in fighting the opioid epidemic. Since the program was reported in *The New York Times*,<sup>1</sup> the department has received more than inquiries from EDs across the country and abroad. People who overdose are brought to the ED to receive rescue medications, people who are addicted go to the ED to obtain more opioids, and perhaps most importantly, often the ED physicians are the first people to hand an opioid prescription to a patient, noted Dr. Pain in the ED Pain remains the most common reason why a person visits an emergency department. When opioids are used for acute pain, clinicians should prescribe the lowest effective dose of immediate-release opioids and should prescribe no greater quantity than needed for the expected duration of pain severe enough to require opioids. Three days or less will often be sufficient; more than 7 days will rarely be needed. Rosenberg posited, the patient would not be exposed to a highly addictive medication. Kolodny, a handful of EDs across the country are addressing this concern. Rosenberg wanted to do something comprehensive. The team identified centers in New Jersey and New York that would provide specific training in alternatives to opioids for pain management. Though there are numerous pain management programs, most deal with chronic pain, not acute pain, the kind of pain that ED physicians treat. She conducted evidence-based reviews that identified established acute pain protocols and learned to use them in the ED. These alternatives include a combination of nonopiate medications delivered intravenously, through nerve blocks, intranasally, and orally, as well as the use of nitrous oxide to deal with severely acute pain. Many of these treatments, such as nerve blocks, are not typically performed in the ED, partly because of a lack of training. The hospital has also turned to complementary therapies, such as massage; and, a Pranic healer, who uses energy fields. For patients with kidney stones, the protocol calls for intravenous lidocaine. He believes it also helps patients pass the stones more quickly. All of the ED physicians and staff were trained in how to use the opioid alternatives described in Table 1. But the approach has spread beyond these 5 diagnoses. Many people still need opioids, particularly cancer patients or those with chronic pain syndromes related to trauma or fibromyalgia, but the goal for these patients is to use the lowest dose possible and help them maintain function and an active lifestyle. View Sources Hoffman J. Rupp T, Delaney KA. Inadequate analgesia in emergency medicine. *Rising opioid prescribing in adult US emergency department visits: The opioid prescription epidemic and the role of emergency medicine.* September 15, 1.

### 4: Metformin: Side Effects, Dosage & Uses - [www.enganchecubano.com](http://www.enganchecubano.com)

*The medicine of ER, or, How we almost die. [Alan Duncan Ross; Harlan Gibbs] -- Reveals the medical facts behind the fiction of the television series "ER", recounting the true stories behind the episodes, explaining the characters' lingo, and tracing the show's occasional.*

Metformin is an oral diabetes medicine that helps control blood sugar levels. Metformin is used together with diet and exercise to improve blood sugar control in adults with type 2 diabetes mellitus. Metformin is sometimes used together with insulin or other medications, but it is not for treating type 1 diabetes. Important Information You should not use metformin if you have severe kidney disease or diabetic ketoacidosis call your doctor for treatment. If you need to have any type of x-ray or CT scan using a dye that is injected into your veins, you will need to temporarily stop taking metformin. You may develop lactic acidosis, a dangerous build-up of lactic acid in your blood. Call your doctor or get emergency medical help if you have unusual muscle pain, trouble breathing, stomach pain, dizziness, feeling cold, or feeling very weak or tired. Before taking this medicine You should not use metformin if you are allergic to it, or if you have: If you need to have surgery or any type of x-ray or CT scan using a dye that is injected into your veins, you will need to temporarily stop taking metformin. Be sure your caregivers know ahead of time that you are using this medication. Tell your doctor if you have ever had: This may be more likely if you have other medical conditions, a severe infection, chronic alcoholism, or if you are 65 or older. Ask your doctor about your risk. Blood sugar control is very important during pregnancy, and your dose needs may be different during each trimester of pregnancy. Tell your doctor if you become pregnant while taking metformin. Metformin may stimulate ovulation in a premenopausal woman and may increase the risk of unintended pregnancy. Talk to your doctor about your risk. You should not breast-feed while using this medicine. Metformin should not be given to a child younger than 10 years old. Some forms of metformin are not approved for use by anyone younger than 18 years old. How should I take metformin? Take metformin exactly as prescribed by your doctor. Follow all directions on your prescription label and read all medication guides or instruction sheets. Your doctor may occasionally change your dose. Use the medicine exactly as directed. Take metformin with a meal, unless your doctor tells you otherwise. Some forms of metformin are taken only once daily with the evening meal. Do not crush, chew, or break an extended-release tablet. Measure liquid medicine carefully. Use the dosing syringe provided, or use a medicine dose-measuring device not a kitchen spoon. Some tablets are made with a shell that is not absorbed or melted in the body. Part of this shell may appear in your stool. This is normal and will not make the medicine less effective. Low blood sugar hypoglycemia can happen to everyone who has diabetes. Symptoms include headache, hunger, sweating, irritability, dizziness, nausea, fast heart rate, and feeling anxious or shaky. To quickly treat low blood sugar, always keep a fast-acting source of sugar with you such as fruit juice, hard candy, crackers, raisins, or non-diet soda. Your doctor can prescribe a glucagon emergency injection kit to use in case you have severe hypoglycemia and cannot eat or drink. Be sure your family and close friends know how to give you this injection in an emergency. Blood sugar levels can be affected by stress, illness, surgery, exercise, alcohol use, or skipping meals. Ask your doctor before changing your dose or medication schedule. Metformin is only part of a complete treatment program that may also include diet, exercise, weight control, regular blood sugar testing, and special medical care. Your doctor may have you take extra vitamin B12 while you are taking this medicine. Take only the amount of vitamin B12 that your doctor has prescribed. Store at room temperature away from moisture, heat, and light. Dosage Information in more detail What happens if I miss a dose? Take the medicine as soon as you can, but skip the missed dose if it is almost time for your next dose. Do not take two doses at one time. What happens if I overdose? Seek emergency medical attention or call the Poison Help line at An overdose can cause severe hypoglycemia or lactic acidosis. What should I avoid while taking metformin? It lowers blood sugar and may increase your risk of lactic acidosis. Metformin side effects Get emergency medical help if you have signs of an allergic reaction to metformin: Some people using this medicine develop lactic acidosis, which can be fatal. Get emergency medical help if you have even mild symptoms such as:

## 5: Smallpox - Wikipedia

*Note: Citations are based on reference standards. However, formatting rules can vary widely between applications and fields of interest or study. The specific requirements or preferences of your reviewing publisher, classroom teacher, institution or organization should be applied.*

Some young people have thoughts about suicide when first taking an antidepressant. Your doctor will need to check your progress at regular visits while you are using venlafaxine. Your family or other caregivers should also be alert to changes in your mood or symptoms. Venlafaxine may cause serious lung problems in a newborn if the mother takes the medicine late in pregnancy during the third trimester. However, you may have a relapse of depression if you stop taking your antidepressant. Tell your doctor right away if you become pregnant while taking this medicine. Venlafaxine can pass into breast milk and may harm a nursing baby. You should not breast-feed while using this medicine. Venlafaxine is not approved for use by anyone younger than 18 years old. How should I take venlafaxine? Take venlafaxine exactly as prescribed by your doctor. Follow all directions on your prescription label. Do not take this medicine in larger or smaller amounts or for longer than recommended. Venlafaxine should be taken with food. Try to take your dose at the same time each day. Do not crush, chew, break, or open an extended-release tablet or capsule. To make the extended-release capsule easier to swallow, you may open the capsule and sprinkle the medicine into a small amount of applesauce. Swallow all of the mixture without chewing, and do not save any for later use. It may take several weeks before your symptoms improve. Keep using the medication as directed. Do not stop using venlafaxine without first talking to your doctor. You may have unpleasant side effects if you stop taking this medicine suddenly. Your blood pressure will need to be checked often. This medicine can cause you to have a false positive drug screening test. If you provide a urine sample for drug screening, tell the laboratory staff that you are taking this medicine. Store at room temperature away from moisture and heat. Dosage Information in more detail What happens if I miss a dose? Take the missed dose as soon as you remember. Skip the missed dose if it is almost time for your next scheduled dose. Do not take extra medicine to make up the missed dose. What happens if I overdose? Seek emergency medical attention or call the Poison Help line at What should I avoid while taking venlafaxine? Drinking alcohol with this medicine can cause side effects. Ask your doctor before taking a nonsteroidal anti-inflammatory drug NSAID for pain, arthritis, fever, or swelling. This includes aspirin, ibuprofen Advil, Motrin , naproxen Aleve , celecoxib Celebrex , diclofenac, indomethacin, meloxicam, and others. Venlafaxine may impair your thinking or reactions. Be careful if you drive or do anything that requires you to be alert. Venlafaxine side effects Get emergency medical help if you have signs of an allergic reaction to venlafaxine: Report any new or worsening symptoms to your doctor, such as: Call your doctor at once if you have: Seek medical attention right away if you have symptoms of serotonin syndrome, such as: This is not a complete list of side effects and others may occur. Call your doctor for medical advice about side effects.

## 6: Overdose: MedlinePlus Medical Encyclopedia

*The Medicine of ER, Or, How We Almost Die (Paperback) Published October 21st by Harper Perennial Paperback*  
Author(s): Harlan Gibbs, Alan Duncan Ross.

Aerospace medicine deals with medical problems related to flying and space travel. Addiction medicine deals with the treatment of addiction. Medical ethics deals with ethical and moral principles that apply values and judgments to the practice of medicine. Biomedical Engineering is a field dealing with the application of engineering principles to medical practice. Clinical pharmacology is concerned with how systems of therapeutics interact with patients. Conservation medicine studies the relationship between human and animal health, and environmental conditions. Also known as ecological medicine, environmental medicine, or medical geology. Disaster medicine deals with medical aspects of emergency preparedness, disaster mitigation and management. Diving medicine or hyperbaric medicine is the prevention and treatment of diving-related problems. Evolutionary medicine is a perspective on medicine derived through applying evolutionary theory. Forensic medicine deals with medical questions in legal context, such as determination of the time and cause of death, type of weapon used to inflict trauma, reconstruction of the facial features using remains of deceased skull thus aiding identification. Gender-based medicine studies the biological and physiological differences between the human sexes and how that affects differences in disease. Hospice and Palliative Medicine is a relatively modern branch of clinical medicine that deals with pain and symptom relief and emotional support in patients with terminal illnesses including cancer and heart failure. Hospital medicine is the general medical care of hospitalized patients. Physicians whose primary professional focus is hospital medicine are called hospitalists in the United States and Canada. Laser medicine involves the use of lasers in the diagnostics or treatment of various conditions. Medical humanities includes the humanities literature, philosophy, ethics, history and religion, social science anthropology, cultural studies, psychology, sociology, and the arts literature, theater, film, and visual arts and their application to medical education and practice. Health informatics is a relatively recent field that deal with the application of computers and information technology to medicine. Nosology is the classification of diseases for various purposes. Occupational medicine is the provision of health advice to organizations and individuals to ensure that the highest standards of health and safety at work can be achieved and maintained. Pain management also called pain medicine, or algiatry is the medical discipline concerned with the relief of pain. Pharmacogenomics is a form of individualized medicine. Podiatric medicine is the study of, diagnosis, and medical treatment of disorders of the foot, ankle, lower limb, hip and lower back. Sexual medicine is concerned with diagnosing, assessing and treating all disorders related to sexuality. Therapeutics is the field, more commonly referenced in earlier periods of history, of the various remedies that can be used to treat disease and promote health. Tropical medicine deals with the prevention and treatment of tropical diseases. It is studied separately in temperate climates where those diseases are quite unfamiliar to medical practitioners and their local clinical needs. Urgent care focuses on delivery of unscheduled, walk-in care outside of the hospital emergency department for injuries and illnesses that are not severe enough to require care in an emergency department. In some jurisdictions this function is combined with the emergency department. Veterinary medicine; veterinarians apply similar techniques as physicians to the care of animals. Wilderness medicine entails the practice of medicine in the wild, where conventional medical facilities may not be available. Many other health science fields, e. Medical education and Medical license Medical students learning about stitches Medical education and training varies around the world. It typically involves entry level education at a university medical school, followed by a period of supervised practice or internship, or residency. This can be followed by postgraduate vocational training. A variety of teaching methods have been employed in medical education, still itself a focus of active research. Since knowledge, techniques, and medical technology continue to evolve at a rapid rate, many regulatory authorities require continuing medical education. Medical practitioners upgrade their knowledge in various ways, including medical journals, seminars, conferences, and online programs. A database of objectives covering medical knowledge, as suggested by national societies across the United States, can be searched at <http://> In

general, this entails a medical degree from a university and accreditation by a medical board or an equivalent national organization, which may ask the applicant to pass exams. This restricts the considerable legal authority of the medical profession to physicians that are trained and qualified by national standards. It is also intended as an assurance to patients and as a safeguard against charlatans that practice inadequate medicine for personal gain. While the laws generally require medical doctors to be trained in "evidence based", Western, or Hippocratic Medicine, they are not intended to discourage different paradigms of health. In the European Union, the profession of doctor of medicine is regulated. A profession is said to be regulated when access and exercise is subject to the possession of a specific professional qualification. The regulated professions database contains a list of regulated professions for doctor of medicine in the EU member states, EEA countries and Switzerland. Doctors who are negligent or intentionally harmful in their care of patients can face charges of medical malpractice and be subject to civil, criminal, or professional sanctions.

## 7: Fainting: MedlinePlus Medical Encyclopedia

*Book Reviews MicroReviews by the Book Review Editor: The Medicine of ER: Or, How We Almost Die: Harlan Gibbs, M.D., and Alan Duncan Ross.*

He comes from a very wealthy family. Carter had a brother with whom he had a good relationship. Once, Carter and his brother were playing on top a tree and Carter was accidentally pushed off, and his brother made him promise not to tell their mother. Carter, having an good bond with him, kept it a secret despite his mother secretly knowing. In earlier seasons, Carter mentions he has a sister, but the audience never sees her. Carter also had a great relationship with his grandmother, having many fond memories of her. For instance, he would often stop by and visit her while in high school. Carter comes to County General as a third year medical student. As a medical student, Carter is characterized as not always being the most gifted physician, but he is very dedicated and compassionate with his patients. On his first day he is introduced to the hospital by Benton and taught how to insert an IV. However he also witnessed the darker, more difficult side of the E. R, making him unexpectedly sick while attending to a car crash victim. While sitting down in the ambulance bay catching his breath, Greene stops by and supports him. He teaches him that there are two kinds of doctors: Throughout his days as a student he often butts heads with Benton, however at times Carter does impress Benton. During his time at County General as a med student he had issues dealing with the trauma at the workplace, for instance, an wrestler starving himself, and more dramatically, a transgender patient who commits suicide. The trauma eventually takes its toll when it leaves Carter unsure if he made the right career choice, but after helping a woman give birth his choice is reconfirmed. Carter develops a cavalier and disdainful attitude towards patients during this time, which adds stress to various professional relationships. Just before graduation, John requests a review of his transcript in order to determine whether he will graduate with honors. He is informed, however, that he has not seen a sufficient number of pediatric patients, and in order to graduate on time, he will need to serve a rotation with Doug Ross in Pediatrics, rather than the Plastic Surgery rotation he was interested in. However, after extended exposure to the emergency room, and a short discussion with Dr. In order for Carter to change from his surgical residency to an emergency medicine residency, he agrees to work for free for his first year, since County General had no more funding for an additional spot. As a resident, his confidence grows, and he often does whatever is in his power or, sometimes, things outside of his power, much to the annoyance of his superiors to help patients. Carter about to undergo surgery. In *All in the Family*, Kerry Weaver heads into the Exam Room and discovers Carter and Lucy lying on the ground, both unconscious, promptly bringing the party to an abrupt end as the ER staff work to save both their seriously injured colleagues. After Abby Lockhart catches him shooting up Fentanyl following a trauma, Kerry Weaver and the other doctors stage an intervention in the Season 6 finale episode, "May Day" where they demand that Carter go to an inpatient rehab center for medical doctors in Atlanta or be fired and brought up on charges. Although initially opposed to going, Carter eventually agrees to go with Dr. Carter reacted strangely calm at first but upon heading into a hospital bathroom, vomited. In *On the Beach*, following the death of his predecessor, Mark Greene from brain cancer, Carter became the new Attending, Carter even donning his own version of the green scrubs that Greene himself had worn in the past. Season 9 During Season 9, Carter dates Abby after they were quarantined in the ER for three weeks because of the outbreak of monkeypox. They have long been attracted to each other, and their romantic relationship is the natural next step. Worse, Abby and Carter continue to disagree over whether or not Abby a recovering alcoholic should be drinking at all, even moderately. Carter is broken by his grief, yet Abby feels it is her duty to go and get her destitute brother, essentially leaving Carter alone to grieve. While there, he is nearly killed by guerrilla soldiers. He returns after two weeks. Around this time, Wyle had his first child, and requested to have three months off from the show in order to spend time with his infant son. Producers complied with this request. To deal with this absence, Carter remains in Africa for several months. They initially differ on approaches to treatment, but come to respect and love each other see more about Kem below under "Related Characters: It will be named after his stillborn son - "The Joshua Carter Center. After a very awkward reunion, their

relationship begins to grow again, and Carter offers to go to Africa with Kem and start all over. Carter goes back to Chicago to finish out his work with County General, and, after saying goodbye to his friends, goes to Africa to be with Kem. Season 15 In Season 15, Carter returns in a five-episode arc close to the end, reappearing on Chicago and taking shifts at County General while waiting for a kidney transplant. Since his character was the most visible resident, and residents in the U. However, with the departure of several lead male actors, beginning with George Clooney in , Wyle was groomed to assume a greater role on the series - both as male lead and central love character. When Anthony Edwards decided to leave after eight seasons in , Noah Wyle was essentially promoted to the top lead, and received top billing on the show. Greene had been told exactly the same thing, by Dr. Carter, in turn, said the same thing to Dr. Archie Morris as Carter left the ER for the last time. He and Carter have an awkward relationship. Carter is very close to his grandmother whom he calls "Gamma" and intermittently lives at her home. Carter, with the assistance of his colleague Anna, attempts to detox and rehabilitate him, but fails. Chase eventually overdoses, resulting in severe brain damage. Carter pleads for the family to keep Chase in physical therapy, and Chase improves significantly. In earlier episodes, Carter mentions having a sister who lives in London and who traveled to Chicago for his med school graduation, but she is never seen, nor named, and in later episodes she is never mentioned at all. Romantic A variety of actresses were called to play the love interests of Carter. Significant girlfriends and the actresses that played them are listed below: Harper Tracey Christine Elise , a fellow med student, they dated during Season 2. She cheats on Carter very early in the relationship with Dr. Carter forgives her, only for her to dump him a few months later because Carter tricks another med student in order to get a procedure. She begins a pediatric surgical rotation with Dr. She was a new resident in the ER. She eventually returns to Philadelphia and makes up with her ex-boyfriend, a doctor and former painkiller addict. Roxanne Please Julie Bowen , an insurance salesmen and patient of Carter, the two began dating in Season 5. The relationship falls apart for many reasons, including both of their busy work schedules and perhaps because Carter liked Med Student Lucy Knight. Despite character popularity, Kellie Martin decided to leave the series; her character died from injuries after she was stabbed by a schizophrenic patient in the Season 6 episode, Be Still My Heart and All in the Family. Rena Trujillo Lourdes Benedicto , Carter briefly dates Rena during Season 7, until he finds out that she is still a student and is only He dates her for a brief time until she dumps him because she knows he has feelings for Abby Lockhart. As Carter had a crush on her during her first tenure on the show, this dropped plot was resumed. But, after finally dating, during Season 8, their chemistry is very low and they never share a physical relationship. They split amicably after Susan tells him to "tell Abby". Abby Lockhart Maura Tierney , both date during Season 9, after being very good friends during Seasons 7 and 8. She is a nurse in the ER. After a series of personal crises and general dysfunction on the part of them both see "Key Events" above , their relationship finally dissolves when Carter goes to the Congo for seven months. He breaks up with her by letter. However, she loses the baby after eight months of pregnancy, and begins to shut down emotionally. During their separation, they date others, but when Carter visits her while she is in France, they reconcile, and give their relationship another chance. During Season 12, we learn that Kem and Carter got married.

## 8: What You Need To Know About The Rise In Antibiotic-Resistant UTIs | IFLScience

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Species Variola virus Smallpox was caused by infection with variola virus, which belongs to the genus Orthopoxvirus, the family Poxviridae and subfamily chordopoxvirinae. Evolution The date of the appearance of smallpox is not settled. It most likely evolved from a terrestrial African rodent virus between 68, and 16, years ago. One clade was the variola major strains the more clinically severe form of smallpox which spread from Asia between 1, years ago. A second clade included both alastrim minor a phenotypically mild smallpox described from the American continents and isolates from West Africa which diverged from an ancestral strain between 1, and 6, years before present. This clade further diverged into two subclades at least years ago. If the mutation rate is assumed to be similar to that of the herpesviruses, the divergence date between variola from Taterapox has been estimated to be 50, years ago. Better estimates of mutation rates in these viruses are needed. Diversification of strains only occurred in the 18th and 19th centuries. Four orthopoxviruses cause infection in humans: Variola virus infects only humans in nature, although primates and other animals have been infected in a laboratory setting. Vaccinia, cowpox, and monkeypox viruses can infect both humans and other animals in nature. Poxviruses are unique among DNA viruses in that they replicate in the cytoplasm of the cell rather than in the nucleus. In order to replicate, poxviruses produce a variety of specialized proteins not produced by other DNA viruses, the most important of which is a viral-associated DNA-dependent RNA polymerase. Both enveloped and unenveloped virions are infectious. The viral envelope is made of modified Golgi membranes containing viral-specific polypeptides, including hemagglutinin. It was transmitted from one person to another primarily through prolonged face-to-face contact with an infected person, usually within a distance of 1. Rarely, smallpox was spread by virus carried in the air in enclosed settings such as buildings, buses, and trains. The virus can be transmitted throughout the course of the illness, but this happened most frequently during the first week of the rash, when most of the skin lesions were intact. The overall rate of infection was also affected by the short duration of the infectious stage. In temperate areas, the number of smallpox infections was highest during the winter and spring. In tropical areas, seasonal variation was less evident and the disease was present throughout the year. Vaccination immunity declined over time and was probably lost within thirty years. Microscopically, poxviruses produce characteristic cytoplasmic inclusions, the most important of which are known as Guarnieri bodies, and are the sites of viral replication. Guarnieri bodies are readily identified in skin biopsies stained with hematoxylin and eosin, and appear as pink blobs. They are found in virtually all poxvirus infections but the absence of Guarnieri bodies could not be used to rule out smallpox. All orthopoxviruses exhibit identical brick-shaped virions by electron microscopy. Definitive laboratory identification of variola virus involved growing the virus on chorioallantoic membrane part of a chicken embryo and examining the resulting pock lesions under defined temperature conditions. Serologic tests and enzyme linked immunosorbent assays ELISA, which measured variola virus-specific immunoglobulin and antigen were also developed to assist in the diagnosis of infection. Chickenpox and smallpox could be distinguished by several methods. Unlike smallpox, chickenpox does not usually affect the palms and soles. Additionally, chickenpox pustules are of varying size due to variations in the timing of pustule eruption: A variety of laboratory methods were available for detecting chickenpox in evaluation of suspected smallpox cases. In contrast to the rash in smallpox, the rash in chickenpox occurred mostly on the torso, spreading less to the limbs. An Italian female smallpox patient whose skin displayed the characteristics of late-stage confluent maculopapular scarring, Smallpox vaccine Components of a modern smallpox vaccination kit including the diluent, a vial of Dryvax vaccinia vaccine, and a bifurcated needle. The earliest procedure used to prevent smallpox was inoculation known as variolation after the introduction of smallpox vaccine to avoid possible confusion, which likely occurred in India, Africa, and China well before the practice arrived in Europe. Because the person was infected with variola virus, a severe infection could

result, and the person could transmit smallpox to others. Variolation had a 0. In , Edward Jenner , a doctor in Berkeley, Gloucestershire , rural England, discovered that immunity to smallpox could be produced by inoculating a person with material from a cowpox lesion. Cowpox is a poxvirus in the same family as variola. Jenner called the material used for inoculation vaccine , from the root word vacca, which is Latin for cow. The procedure was much safer than variolation, and did not involve a risk of smallpox transmission. Vaccination to prevent smallpox was soon practiced all over the world. During the 19th century, the cowpox virus used for smallpox vaccination was replaced by vaccinia virus. Vaccinia is in the same family as cowpox and variola, but is genetically distinct from both. The origin of vaccinia virus and how it came to be in the vaccine are not known. Voltaire does not speculate on where the Circassians derived their technique from, though he reports that the Chinese have practiced it "these hundred years". The current formulation of smallpox vaccine is a live virus preparation of infectious vaccinia virus. The vaccine is given using a bifurcated two-pronged needle that is dipped into the vaccine solution. The needle is used to prick the skin usually the upper arm a number of times in a few seconds. If successful, a red and itchy bump develops at the vaccine site in three or four days. In the first week, the bump becomes a large blister called a "Jennerian vesicle" which fills with pus, and begins to drain. During the second week, the blister begins to dry up and a scab forms. The scab falls off in the third week, leaving a small scar. Neutralizing antibodies are detectable 10 days after first-time vaccination, and seven days after revaccination. Historically, the vaccine has been effective in preventing smallpox infection in 95 percent of those vaccinated. If a person is vaccinated again later, immunity lasts even longer. Studies of smallpox cases in Europe in the s and s demonstrated that the fatality rate among persons vaccinated less than 10 years before exposure was 1. By contrast, 52 percent of unvaccinated persons died. There are side effects and risks associated with the smallpox vaccine. In the past, about 1 out of 1, people vaccinated for the first time experienced serious, but non-life-threatening, reactions, including toxic or allergic reaction at the site of the vaccination erythema multiforme , spread of the vaccinia virus to other parts of the body, and to other individuals. Potentially life-threatening reactions occurred in 14 to people out of every 1 million people vaccinated for the first time. Based on past experience, it is estimated that 1 or 2 people in 1 million 0. By , routine vaccination had ceased in all countries. Vaccination four to seven days after exposure can offer some protection from disease or may modify the severity of disease. Flat and hemorrhagic types of smallpox are treated with the same therapies used to treat shock , such as fluid resuscitation. People with semi-confluent and confluent types of smallpox may have therapeutic issues similar to patients with extensive skin burns. The drug must be administered intravenously , and may cause serious kidney toxicity. It was approved for use in the United States by the U. FDA on August 31, It contains live vaccinia virus, cloned from the same strain used in an earlier vaccine , Dryvax. While the Dryvax virus was cultured in the skin of calves and freeze-dried, ACAMs virus is cultured in kidney epithelial cells Vero cells from an African green monkey. Efficacy and adverse reaction incidence are similar to Dryvax. The overall fatality rate for children younger than 1 year of age is 40â€”50 percent. Hemorrhagic and flat types have the highest fatality rates. The fatality rate for flat-type is 90 percent or greater and nearly percent is observed in cases of hemorrhagic smallpox. The case-fatality rate for variola minor is 1 percent or less. The cause of death from smallpox is not clear, but the infection is now known to involve multiple organs. Circulating immune complexes , overwhelming viremia , or an uncontrolled immune response may be contributing factors. Cause of death in hemorrhagic cases involved heart failure , sometimes accompanied by pulmonary edema. In late hemorrhagic cases, high and sustained viremia, severe platelet loss and poor immune response were often cited as causes of death. Respiratory complications tend to develop on about the eighth day of the illness and can be either viral or bacterial in origin. Secondary bacterial infection of the skin is a relatively uncommon complication of smallpox. When this occurs, the fever usually remains elevated. Pustules can form on the eyelid, conjunctiva , and cornea , leading to complications such as conjunctivitis , keratitis , corneal ulcer , iritis , iridocyclitis , and optic atrophy. Blindness results in approximately 35 percent to 40 percent of eyes affected with keratitis and corneal ulcer. Hemorrhagic smallpox can cause subconjunctival and retinal hemorrhages. In 2 to 5 percent of young children with smallpox, virions reach the joints and bone, causing osteomyelitis variolosa. Lesions are symmetrical, most common in the elbows, tibia , and fibula , and characteristically cause separation of an

epiphysis and marked periosteal reactions. Swollen joints limit movement, and arthritis may lead to limb deformities, ankylosis, malformed bones, flail joints, and stubby fingers. Smallpox was probably introduced into China during the 1st century AD from the southwest, and in the 6th century was carried from China to Japan. In India, the Hindu goddess of smallpox, Sitala Mata, was worshiped in temples throughout the country. Smallpox is not clearly described in either the Old or New Testaments of the Bible or in the literature of the Greeks or Romans. By the 16th century smallpox had become well established across most of Europe. The settled existence of smallpox in Europe was of particular historical importance, since successive waves of exploration and colonization by Europeans tended to spread the disease to other parts of the world. By the 16th century it had become an important cause of morbidity and mortality throughout much of the world. There are no credible descriptions of smallpox-like disease in the Americas before the westward exploration by Europeans in the 15th century AD. Smallpox devastated the native Amerindian population and was an important factor in the conquest of the Aztecs and the Incas by the Spaniards.

### 9: Tens of thousands die in Africa each year due to fake drugs | Reuters

*Over the course of a year-long study in a California emergency room, 1, patients tested positive for UTIs, 6 percent of which were caused by drug-resistant bacteria. Almost half of the.*

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