History of invasive and interventional cardiology assignment

Ranging from the birth of categorization to the Intervention Era of Development of surgeries, drugs, imaging, and care, the history of invasive and intervention cardiology is a field of modern medicine that has tapped up to another level, transformed the way medicine is utilized, and ultimately, changed the way America has saved lives. The Birth of Categorization Invasive and Intervention cardiology is the study of a group of methods in which diagnostic testing and non-surgical intervention treatments are used for treating patients who suffer from various heart diseases and disorders.

This field covers a variety of therapies ranging from extents to intramuscular ultrasounds. Invasive and intervention cardiology began with the birth of categorization starting from the early ancient Egyptians going back to 400 B. C. During 400 B. C. , catheters were fashioned by hollow reeds and pipes were used as cadavers to study function of cardiac valves, then in 3000 B. C. , ancient Egyptians performed the first types of categorization which started from the bladder using metal pipes (Chuddar, Raman, Ram, and Hashes 75).

With the very basic beginnings of Inserting pipes and tubes, these ideas began to shape the minds of doctors. The first major breakthrough that led to the birth of categorization was a description of blood flow and blood itself by William Harvey in his “ earth-shaking” publication De Mot Cord’s in 1628 (Bradawl 2031). The direction of blood and its flow was a crucial concept to understanding the pathways that could be used to drive these catheters; and this Is Just what Claude Bernard did.

Bernard applied scientific methods to study cardiac physiology using the cardiac catheter while also performing accumulation (the process of inserting

a tube in the body for the delivery or removal of fluid for the purposes of collecting date) on an equine artery to measure systemic arterial pressure. Meanwhile, a young surgeon, Werner Formants, performed the first categorization on a human being-?? surprisingly, himself. Forewoman’s goal was to rove that these catheters could safely enter the heart, inject drugs, and contrast material Into the right atrium of the heart.

He was able to prove this when he showed his insertion on an x-ray. Soon enough, other physicians began to share the same mind that Formants held (Chuddar, Raman, Jam, and Hashes 75). In 1711, Stephen Hales placed catheters into the left and right ventricles of animals by inserting a brass pipe into a horse and a glass tube into the trachea of a goose (MacGregor 1). In 1941, in hopes of carrying on the catheter legacy, Andre Gourmand performed systematic measurements of homicides of the heart.

Over the years of categorization techniques and practices, the epoch for angiography began. Angiography first developed in 1972 by Portuguese physician Eggs Motion; at this time, Charles Doter was also starting to work on visualizing the heart as well (Chuddar, Raman, Jam, and Hashes 75). The goal of Werner Foreman’s self- cardiac categorization was to safely inject drugs for cardiac resuscitation and many followed his model and ideas to map out the entire circulatory system.

With these ideas, the goal for safer cardiac categorization and disease investigation had started to mold its way through. Though many people of that time saw Forewoman’s procedure as fatal and scoffed and mocked him for his claims and research, all seemed to prove helpful in the future

advancements to come. In 1947, the first studies on congenital and pulmonary heart disease are reported by Dexter in which passage to the distal pulmonary artery was successful.

As cardiac categorization had begun to get used in investigating problems in cardiovascular physiology, Michael and Sharper-Shafer started to do the same in England and over time trans-septa categorization, developed by Ross and Cope (study of the left heart using a method now as “ transmittal” where the left trial pressure in patients with material valve disease is measured), quickly became accepted as a standard technique 1959.

It was in the early sass’s that this technique became further refined and the “ trans-septa” technique was proposed (Point, Store, Lombardi, and Irritate 943) As systemic pressure measurement started to become widely investigated through use of catheters, blood pressure measurement started to evolve as well. The first methods of categorization developed into double categorization techniques which made way for blood pressure measurement . In 1711, Stephen Hales made first measurement of blood pressure and cardiac output using brass pipes into the venous and arterial system of a horse while August Chapeau and E. Inane-Jules Marry did further study and recorded auricular and ventricular pressure on a horse using a double catheter technique (MacGregor 1). Double categorization provided a way of categorization for peripheral arteries, coronary arteries, and precancerous interventions. As these categorization techniques advanced, better design and safer catheters also advanced. The Kidskin (designed by DRP. Melvin Kidskin) catheters were an example of one of the early and high

quality shaped catheters in which a stiff wire was placed to match size and shape of aorta (Chuddar, Raman, Jam, and Hashes 75.

As the shapes of these catheters started to advance, different types of catheters started to emerge as a result. The variation in these catheters allowed for deeper study pertaining to cardiac diseases which many physicians were in the process if studying. Mason Cones, an early cardiologist performed the first categorization through arterial access from the upper extremity of the brachia artery Just above the lobo known as transversal categorization.

Known as a “ happy accident”, Cones had accidentally entered the patient’s right coronary artery, but before the catheter could be removed, Cones injected about 30 c of contrast agent into the patient. Meanwhile, the patient had gone into ventricular fibrillation but was then restored. This was the first known coronary arteriolar. DRP. Mason Cones and his team never looked back after their first coronary arteriolar and continued to perform over another cardiologist from France had to explore it as well. DRP.

Lucien Camped darted to explore this technique using French catheters in 30 men with large radial arteries, and throughout the series, he was able to successfully perform transversal coronary mammograms. This transition in history started introducing the intervention era and the advancements and ideas that made further developments in the field of cardiology to become even more advanced. America was becoming a nation that was much more equipped in modern medicine than how it was centuries ago, these new

techniques and treatments posed a future for how America could change its ways and advance medically.

Little did many know how these advancements would start to blend into intravenous procedures and how categorization would lay a foundation for more intervention practices throughout the history of medicine (You, Park, Kim, loon, Yon, and Gone 1-4). The Intervention Era of Development As these new transitions and categorization developed, it was about time that dawn of the Intervention Era had come about. DRP. Mason Cones' revolutionary technique of being able to produce high quality coronary images using special catheters came alive and led the Era of Intervention one step forward.

To kick start the Intervention Era, Charles Doter, another cardiologist, began working on methods to visualize the coronary anatomy through radiographic films in the year of 1958. He developed the method known as occlusive orthography (transient occlusion of the aorta and injection of a small amount of contrast agent into the aortic root). Using this method, images of coronary anatomy were produced and Doter proved that all animals that had undergone this procedure had survived. Even though this procedure proved to be a major development in the history of cardiology, the developments didn't stop there.

Doter's technique Just started in 1964 when working with Melvin Kidskin in Portland, Oregon with the introduction of translational angioplasty. Doter's main focus was to find a way to start increasing the diameter using multiple catheters to open blocked arteries and improve blood flow. However, it

wasn’t Doter who further expanded this but doctors in Europe who had introduced Andrea Grunting to Doter’s ideas. Traditional radiology was no longer simple, instead it began to turn into non-surgical intervention to treat cardiac diseases as Andrea Grunting began to incorporate balloon design to Doter’s technique.

Grunting then began to fashion these in his kitchen so he could develop a trustworthy design. In 1957, Grunting accomplished his goal of developing a double lumen catheter that included a polysaccharide balloon. This was another major revolution that deepened the Intervention Era further. It wasn’t until 1977, when Andrea Grunting performed the first precancerous translational coronary angioplasty (PTA or PC) on September 16th, he also began to use catheters that delivered streptomycin’s to treat acute myocardial infarction based on Charles Doter’s techniques.

This was the first angioplasty ever performed on an awake human which proved to be beneficial results in an AHA (American Heart Association) meeting. With the first angiography developed, new methods of injecting and training started to come into existence. Moray and Chainman were two cardiologists who used a method of transverses heart surgeries for tachycardia treatment) in 1984. As these injecting methods became widely popular, internal devices that could be used to regulate the heart came about.

These were cardiac pacemaker and the most preliminary pacemaker to e known was the first implantable one developed in 1983 which was invented by Wilson Greathearted. With such advancements and developments to

utilize in treatments, since its start from 400 B. C. , serious intervention cardiology training arose and begun in 1999. During this year, a bigger awareness of techniques evolved throughout the Intervention Era that training had to be incorporated to promote a future in advanced medicine (Chuddar, Raman, Jam, and Hashes 78). Although angiography made progress throughout the Intervention Era, the U. S. Ejected hose ideas of angioplasty for almost 1 5 years because of such complexity and difficulty reproducing these techniques while Doter's techniques and practices were further studied by doctors in Europe like DRP. Bertha Zestier in Germany and DRP. Andrea Grunting. Little did many realize that this would become a big part of diagnostic imaging where non-surgical intervention would be used for treating cardiovascular disease. Grunting was a role model for many that in 1967, Rene Flavor performed first sousaphones vein graft in Cleveland, Ohio, and in 1986, Jacques Pull and Lurch Swart insert the first Steen into a human artery.

A year later in 1987, intervention and rotational devices started to be used worldwide along with intramuscular ultrasound. Taking on the angioplasty spirit of the Intervention Era, each of these doctors designated their time to produce the first extents and devices to create a brighter future in the world of medicine and benefit the lives of many Americans today (Chuddar, Raman, Jam, and Hashes 78). Because of the breakthrough procedures that had been developed throughout the sass's people began acknowledging and applauding these breakthrough procedures and economizing the people who made it possible.

As the sass’s start approaching, technology starts to spindle upward in improvements of angioplasty technology where intervention cardiology has been altered forever. Organization such as the International Dilation Society and the National Heart, Lung & Blood Institute started to flourish because of these techniques and techniques; in support the first 1000 angioplasties are performed worldwide, balloon systems are introduced, and fully developed brachia catheters and guide wires in 1982 (Chuddar, Raman, Jam, and Hashes 78).

It was these two major breakthroughs that brought these procedures into existence; the first human coronary angioplasty performed during bypass surgery in 1967 and the first coronary angioplasty performed on an awake person in 1977. These techniques opened a whole new future for cardiologists, especially in diagnosis. It was with noble men that these procedures were developed, men that foresaw a future in the world of medicine. However, many of the notable men who led the road of invasive and intervention cardiology had deceased, but their ideas held revolutionary advancements into the future.

Because of them and their inventions, Steen development had begun to pry its way into the medical industry. Balloon catheter development started in 1986 and the monorail system was introduced by Bonzes in which guided wires passed through the balloon and ran along a shaft through the guidance of the catheter where it could be used for concept returned in the mid-sass’s using a “ balloon on wire” concept while the “ over the wire” system started to become less used.

Then, in 1985, tragedy had struck as Doter, Cones, Kidskin, and Grunting all pass away (“ History of Angioplasty Timeline”). From that time on, self-expanding devices that could be placed into arteries started to become a theory but came into reality when Jacques Pull implanted the first intrapulmonary Steen (small metal tubes that open up the artery after balloon angioplasty to prevent collapse of re-opened arteries) in Toulouse, France on March 24, 1986 (“ Timeline: 30 Years of Progress in Intervention Cardiology’).

Even though many of these pioneers in cardiology had deceased during the greatest time in medical history, their legacy still led a chain of devices that introduced and developed into the medical technology we have today. As internal devices became a popular theory, new intervention devices were developed; lasers, rotational tracheotomy (Rotator), intramuscular ultrasound (TV’S), and extents between 1987 and 1993. Palm-Scat balloon expandable intrapulmonary Steen is developed.

These began to get approved worldwide (Chuddar, Raman, Jam, and Hashes 79). The results of this Steen were proved to be better than balloon angioplasty with lower chances of sudden closure and pert-procedure heart attack. Because extents were still new, angioplasties remained a common procedure that, over 1 million angioplasties ere performed, making it the most common medical intervention in the world (“ History of Angioplasty Timeline”). As the basic Steen derived, drug eluting extents began to get marketed in 2002.

With the development of the Cipher Steen manufactured by Johnson & Johnson (drug-eluting Steen), it was designed to release a chemotherapeutic agent known as scurrilous (an instrumentation, eliminating old and abnormal white blood cells). This was the first drug-eluting Steen approved by the FDA which proved to be a major advance to reduce resister's (" History of Angioplasty Timeline"). Then in March 2004, Boston Scientific had its Taxes drug- eluting Steen approved in the U.

S. , while the year before its approval was accepted in Europe in 2003. Three years later, another Steen makes its way into approval. A newly designed Steen by Condor Meditates had gotten approved in February of 2006, this Steen had a foreseeable polymer to transmit an anti-resister's drug. As these companies started selling and promoting their extents, in 2007, Johnson & Johnson had purchased Condor (Chuddar, Raman, Jam, and Hashes 79-80).

These extents that developed between 2003 and 2007 began to take shape in the hearts of many Americans, this was not the end but a whole new beginning in the transformation of American medical systems and technologies. Cardiovascular surgery, drugs, and coronary units started to change the way heart disease was treated in America, that in 1953, John Gibbon at Thomas Jefferson Hospital in Philadelphia, performed first open-heart surgery using total cardiopulmonary bypass successfully closing an trial septa defect.

Gibbons also led the development of the first heart-lung machine (resurveying oxygen that the body cells have removed at the right pressure to supply to all organs) in 1931 (Baldwin, Leftwards, and Kop 313).

Cardiovascular surgery was also first performed systemically by Robert Gross in 1938 in which he successfully closed a patent ducts arterioles (Bradawl 2032). The heart-lung machine and first open-heart surgery were two successes that were needed to save treatments became more readily available, more pharmaceutical application became involved.

During the sass's, the British pharmaceutical company, Imperial Chemical Industries, had developed the first beta-blockers. This company was led by James Black who had first developed beta-blockers, because of this he received honor for his and his other discoveries along with a Nobel Prize. Beta-blockers have treated patients in numerous ways starting from acute and chronic myocardial schemas, heart failure, and arrhythmia to hypertension. But, in the sass's, it was Cushman and Indention who had isolated the first negotiations-converting enzyme inhibitor known as capacitor.

These inhibitors became very effective in diseases pertaining to heart failure and hypertension, while the first HAM-Coca reeducates inhibitor was isolated by Kara Endow by Shaky Pharmaceuticals in 1976 (Bradawl 2032). Part of the Invasive and Intervention Era was care as well. Coronary care became a necessity, as many people before 1961 were treated with neglect, especially those with myocardial infarction who were sedated at bedsores. The mortality that existed with these acute myocardial infarction patients was more than 30%.

But, in 1961, Despond Julian put the new idea of a coronary care unit on the tables of many. This development stood on four basic points; constant

electrocardiograph monitoring and arrhythmia alarms, cardiopulmonary resuscitation which included external ventricular defibrillator, and keeping myocardial infarction patients in an isolated unit where killed personnel, drugs, and equipment were always available. The need that Julian found the most important was the fact that trained nurses should initiate resuscitation. Many believed this would cut the mortality rate in half.

Soon enough these needs started to be fulfilled and were used worldwide, they also started to become a requirement for hospital accreditation which greatly profited many patients who were in need of urgent care and treatment for special diseases (Bradawl 2032). As care developed, so did diagnosis. And in 1952, a Swedish cardiologist and physicist brought the world a fruitful collaboration. Engine Adler and Helmut Hertz adapted he idea of a human sonar device based on the sonar devices used to detect submarines in World War II.

This device provided recorded movements of the heart walls and material valves which made invasive techniques unnecessary. This technique became known as cardiograph’s which would run via an cardiograms. By being able to visualize the heart through non-invasive imaging, it had made a lot of nuclear techniques and radiological techniques (CT and MR.) a lot more powerful. This made a great advancement in both diagnostic treatment and care. Now, there were devices that could sense electric signals in the heart! But, that wasn’t all, there were devices that could regulate your very own heart too.

In 1952, Paul Cool developed the first external pacemaker and in 1959, Elmhurst and Sensing reported the first internal use of a pacemaker. Pacemakers were implants that could be surgically inserted into the heart to regulate the heart rhythm in those who may suffer from arrhythmia or tachycardia. Defibrillators were also a way of restoring heart rhythm, except these would give the heart a shock in an emergency where the heart ay go into a deep low. This is Just what an Israeli cardiologist did. Michael Mirror’s, invented an implanted a certificated-defibrillator, this was a both a primary and secondary prevention of cardiac death.