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okay great so um hi everybody i'm Peter Schwartz as most of you know i'm the director of the iu center for bioethics

and in this capacity the director of the bioethics and subject advocacy program

of the indiana ctsi and you are very welcome we're very glad to have you here

for our next treats talk translational research ethics applied topics we do

these monthly or every other month um they're meant to be a short introduction to an important topic uh really mainly

aimed at researchers rather than ethicists although we can get into some pretty interesting topics even for

ethicists um all of our talks are recorded and available on the iu center for bioethics website which is

bioethics.iu.edu under the research ethics site or under the uh the um

uh ethics resources area uh please do visit that if you'd like this

and again it's my great pleasure and honor to introduce Dr. Bill Schneider uh here uh today uh i'm gonna call him Bill

please everybody call me Peter uh you can call him whatever you want just don't call him late to dinner uh Bill is

a true uh a titan i'm going to call him a titan of ethics and medical

humanities here at iu he was involved most importantly in the creation of the

iu center for bioethics it's really the pinnacle of his career in addition to his you know many acclaimed books

and the enormous impact he's had on medical humanities medical ethics at iu he is professor i believe he's still

professor of history professor did put emeritus after your name professor of medical humanities uh

other titles you can find on his website and bill has done a lot of lecturing in

our courses through the years on the history of research abuses research transgressions and the source for their

for our codes and uh we decided that it's important of topic to put as a treats talk to be available to people on

the website and to take advantage of bill's um truly encyclopedic and excellent knowledge of this area um plus

he has a summary that will be cited by a little bit they'll be um referenced and available through our treats talk

website as well so with no further ado and with great pleasure and great honor i am

interesting you bill schneider uh to lead us through this as usual these are 20 or 30 minutes bill's been known to

talk a little longer kind of like myself if it goes longer that's fine if it goes shorter that's fine too and then we'll

have a discussion among all of us i assume there'll be lots of questions and opportunities for discussion i

would say i think the topic of history and understanding where we come from is going to be essential in life and think

about where we're going in research ethics and research more generally and truly in medical ethics so again i'll go

and mute and actually turn off my camera and we'll hear from Dr. Schneider thanks Bill

well thank you very much peter you went on too long but um it's okay it's my pleasure to

be able to give this talk um about institutional review boards which are probably the best known and

widely considered the best protection against harm for human subjects of research

certainly the case of my academics but exactly why and how the boards were

established and how effective they are in achieving their purpose are questions best answered i think by beginning to

look at the origins of IRBs a couple of preparatory remarks

as peter suggested i'm not a health care provider

i am a researcher but i don't do clinical research i have uh done research in the history of

medicine there was funding from NIH and NSF which has required me to use the

institutional review boards i essentially had to show that i didn't need to

use the institutional review boards because there was no harm to the human subjects that were part of the research

so we can go into that if you want but i'm also that means i'm familiar with some of the criticisms that is the

bureaucracy claims that the people don't really understand your research and so on which

maybe we can talk about um i

would also as peter has said this talk is based on uh

a longer talk that i've given to the research ethics

course that was established almost 25 years ago following the actually the guidelines of

the office of research integrity requiring uh training by researchers in um

responsible conduct of research this is a hopefully a shortening we'll see how it goes but um

so much for the preface now the two main points of this talk

are in explaining this are that government regulation is not the only way

of safeguarding against research misconduct generally or protecting human subjects specifically in addition to

government researchers themselves there's public scrutiny especially nowadays the press

as well as researchers themselves who have a way of monitoring the research done by their

fellow researchers but from a larger perspective the nature of research in broader society

the nature of government and public awareness are at the root of both the causes of harm the human subjects

um as well as other research and ways of guarding against it

so um let me show you some pictures and

i'll try to talk to explain them and

try to give you something of a feel for how this uh works

so to begin with one of the main points is that concern with what we call research

uh involving humans goes back a long way the question of

research is actually kind of interesting oops

there you go uh it's interesting uh in a sense uh any uh healer

uh learns from the prescription and taking care of a patient

and in that sense it's a kind of an experiment the word experiment has the same root as the word experience and so

experience of one caring for a patient is in a sense an experiment you don't know until after you prescribe the

treatment how it works out so this kind of empirical trial and error is

from long ago how the various remedies were developed and the care of patients is something that

has been monitored by governments going back we have evidence going all the way back to Hammurabi's code some

oh thirty four thousand years we're most familiar with the dictum of an eye for an eye and a tooth for a tooth and this

actually applied to physicians uh in one of the codes so that if a physician makes an

incision with an operating knife and kill him or open a tumor or operating knife and cut out the eye his hand shall

be cut off another evidence of long-standing ways

of researchers monitoring or practitioners monitoring their fellow practitioners we can see in the Hippocratic Oaths it

goes back over 2500 years that MD's today a variation of it uh swear in

their white coat ceremonies we're most familiar with this as a list of things that shall not be done

uh ultimately no harm being done to the patient but the earth is actually part of what we can call a kind of a guild

practice where the person who has been an apprentice

enters the practice with fellow practitioners and the fellow practitioners monitor what's done by all

who are part of the killed such that if there is malpractice then they're held accountable

and of course this is something that applies in other circumstances as well

and carries on down to the present day more

like the kind of research we think of was also practiced in ancient times and some of the best known writers and

researchers we can point to and they were also conscious of harm and took steps to minimize harm to their research subjects

galen in ancient rome second century a.d if you look at this picture you can see that is not a portly person that's being

dissected but it's a large pig experiments on animals were a very

important way to this day of minimizing harm to humans if a new

something new is being tried its first tried on animals Avicenna a

physician and philosopher from 11th century Persia also left a lengthy treatise on how one

learns advocating doing testing on animals as well and how one should test and how one

should learn from the experiments so the bottom line of this long-standing

these long-standing practices is that the government and professions as well as religion and the public have long

acted to protect individuals and community interests so the major change in both the practice

of research as well as potential for harm and ways to practice against it

came in the 1600s with the what we call the scientific revolution

scientific revolution best known for the discoveries coming out of

the renaissance and uh learning reviving the learning of ancients and also expanding it were best

known best earliest known uh discoveries were in physics and the laws of motion

but there was also investigation of humans and what we call medicine as well

it's of course greatest importance is the method itself that include such things as controlled observation and

quantitative measurement and so on one of the results of the scientific revolution was to expand the number of

people doing research and since it was applied to humans there was

an increased possibility of harm to humans but the numbers of people involved were small

uh individuals most often in fact the researchers themselves they did experiments on themselves or

their family members a couple of examples as early as William Harvey in 1628 who

published his discoveries of the circulation of the blood almost all of the

experiments and dissections were all the dissections were on animals many animals there's actually an interesting

film that was made in the 1950s re uh creating the experiments that

Harvey did on all sorts of animals to finally figure out just how

and where the various vessels that came were connected to the heart

ultimately met each other although capillaries were too small to be seen by the microscopes of the day he finally

figured out um that there was a circulation because he ultimately measured the volume of the

last chamber of the heart and the number of times the heartbeat and realized that the

60 times 60 times so on uh meant that 200 pounds of blood

was leaving the last chamber of the heart and therefore it had to go somewhere uh this continued on to Edward Jenner uh

perhaps another uh discovery who demonstrated a safer way to inoculate

against smallpox inoculation had been discovered earlier by the Chinese in the 10th century but

he observed milk maids in rural England at the end of the 1700s who acquired immunity to smallpox because of their

exposure to an animal form of the diseased cowpox which was much less risky

giving person a mild case of small bucks ran the risk of

getting a major case which could be 20 or 30 percent fatal in the time of an epidemic this was judged to be

worthwhile but with cowpox the minimal risk was something that was quickly adopted

by governments in England France and elsewhere with some resistance he first tested the

practice though on his own child and then a child uh who was a neighbor

in his town although there was some resistance as we'll see in a minute

now there's examples of concern with the research in the scientific revolution perhaps the best known of which

was the work of Galileo and his examination of the heavens and his conclusion that Copernicus was right and

the earth goes around the sun he faced trial by the pope not in a

religious sense but since the pope was in charge of the

government where Galileo was a university professor in Florence

he was brought to trial ultimately forced to confess and rescinded his conclusion of his book that he published

this is obviously now seen as an unwarranted interference of government with research less well known about the

same time was uh a French doctor practitioner who was brought to

trial by the widow of a man who died after Dennis gave him a transfusion with

calf's blood shortly after the discovery of

the circulation of the blood it was realized that blood from either people

especially young men or animals with a certain disposition might influence the

nature of someone who was suffering and could use an infusion of blood uh in this case the person died Dennis

was acquitted but the French course ban French courts banned transfusion for the next 150 years

um an important element allowing the practitioners to guard

against misconduct and safeguard people that were subject to

research was the review and verification by researchers and um

Harvey when he made his discovery published it in a short book uh the invention of the printing press in the

late 1400s made it possible for people to publish results publish all sorts of

things including those doing research and making their research known but the numbers it was

costly and the people that could do this were limited but within about 40 years of Harvey's

discovery a new way of reporting research was developed the scientific journal

it's interesting how it started it started by correspondence between researchers who would send letters to

one another and pretty soon a few people especially in Paris and London got known as having a

long list of people they could send letters to and so they received letters from researchers and then they would

send out the results to their list this is kind of a letter to the editor which then became soon translated into a

scientific journal this was a way of both spreading the results of what was found and it had

other implications if we look at the various features of the scientific

method that many of us may remember from the science fairs or if you have children

from the various steps that we memorize most of the emphasis is on formulating hypothesis and testing it with an

experiment and so on but crucial in the sense of safeguards was gathering information

previously what we call a literature search and in the end publishing the results

there are two important consequences of this that are often neglected first it both spread the knowledge and meant

that one did not have to reinvent the wheel when built on the shoulders of giants unlike the guilds that kept secret their

knowledge the one of the key reasons for the success of the scientific revolution was

both making a building on the knowledge of others and spreading it to everyone else it also however helped ensure the

quality and integrity of the research results the editors themselves would

be one way of verifying the validity of the research but by sending it out to everyone else it was a way of others

being able to walk a judge whether there was either deliberate fraud or cheating or even

unintended wishful thinking or conclusions based on insufficient evidence and of course

mistreatment of subjects of the research the next major change in research and

ways of safeguarding people involved in the research came in the

1800s and 19th century this was largely the result of broader changes in society

that are too long to go into but briefly listed including the industrial revolution the increase in wealth and

urbanization more democratic governments in the course of the 19th century meaning that

the governments who might monitor research were responsible for more people

government funding and the growth of universities increased the number of researchers at the same time

science was professionalized the American Medical Association formed in 1847 was a way for them to

both accomplish a number of things but in addition to that monitor the

work of their members there was also because of increasing education of the public and

literacy popular awareness of science and reaction to it in mass culture uh

especially with romanticism and as we'll see some reactions to science like Frankenstein which we'll see in a minute

the key to changing medical research we don't have time to go into this was what's called hospital medicine at the

beginning of the 1800s that actually came first in France after the French revolution in 1789

when the government took over abolished religions took over the hospitals which were run by them

uh hospitals up until that time were essentially places where the poor were housed and cared for to a certain

extent by typically nursing orders nuns who would care for them

physicians took care of patients at the bedside

uh but the hospitals run by the government uh had a responsibility and a new

generation of doctors went to the hospitals to both care for patients and they realized that

this was a place where they could learn a lot more from a larger number of patients in other words hospitals became

a place where there were large numbers of people the hospitals soon changed from being places for the sick and poor

to the best place for diagnosis and treatment by the end of the 19th century

the kind of we don't have time to go into this but a French philosopher Michel Foucault

saw the ability of researchers to do research on

poor people who came to be treated as a kind of a tacit contract where in

exchange for free treatment they agreed to be the subjects of what he called the gays or research

likewise when the government took over hospitals those paying the government through taxes benefited

because uh even though the poor were being treated with their expenses the results of them would

benefit them and the physician could save the lives of the rich as well

both of these to a certain extent continue to the present day but getting back to the practice of medicine and

more explicit care and monitoring of abuse laboratory medicine developed at the

same time as hospital medicine after the chemical revolution which uh began about the same time in large

beginning to a certain extent in France uh with an understanding of the way the material

world uh changed from the four elements of going back to the ancient Greeks of earth fire and water

to the discovery of what we now call a table of elements and how they combine to form molecules and we with equations

to uh describe them this ability to understand and refine

these things applied to chemicals used in medical care and treatment including

very early on anesthesia and antisepsis which had tremendous repercussions for

the expansion of surgery at the same time instruments for examining these large numbers of

patients in the hospitals quickly developed beginning with the stethoscope which was

an extension of listening to a patient especially the chest where one could listen

to the heart and listen to the lungs as opposed to simply

feeling for the pulse or watching breathing uh all sorts of other developments for

better instruments from microscopes to monitoring blood pressure uh

culminating before the end of the 1800's with the discovery and application of x-rays

all of these things led to tremendous uh improv improvements in practice of medicine

producing among other things the discovery of cell theory and germ theory

revolutionizing in a fundamental way the understanding of health illness and

healing from a balance of humors of Hippocrates in ancient Greece to disease that was

based in organs and cells as well as physiological functions and a race to discover

the causes of contagious diseases however the 19th century also brought

popular understanding and critiques of medicine and science and the call for more systematic um

calls for protection of human subjects of research a couple of illustrations of the public

critique that can be seen here if you look at the diagram on the right and look carefully

this is a bird in a glass bell

and this experiment being carried out here is to remove the air from the shell

to show that the bird will eventually suffer and die the reaction that the painter is showing

here varies from the researcher himself here to people who look away and even can't

stand the suffering of the animals of the bird more explicit critique is seen over here

on the left which is a cartoon from 1802 and a reaction against Jenner's

discovery of the new way to prevent smallpox injecting something from animals into

humans was seen as uh not exactly pleasant with people growing horns and things growing out of

their arms and foreheads uh reaction against vaccinations is obviously something that

continues to the present day another cartoon showing a reaction

against blood transfusion making fun of napoleon here receiving an injection of blood from a tiger in order to give him

the courage to face the English this is a British cartoon

better known in the 19th century in literature are critiques of

medical research as we can call it perhaps the best known Mary Shelley's Frankenstein

dating back to 1819 uh Robert Louis Stephenson strange cage case of Dr. Jekyll and Mr. Hyde another

example now the there was also because of the increased

uh research that was done with humans there were also the beginnings of proposals and examples of procedures to

protect the subjects of human research and i'm going to give you three examples and try to

quickly mention uh what they illustrate the first of these is uh William

Beaumont who was an army doctor on the northwest frontier at Fort Mcnier Mackinac in Michigan

after the war of 1812. in 1822 a young Canadian trapper came with a accidental gunshot wound to

his stomach um treated it that after healing a flap developed over the uh stomach

which actually has lifted up allowed access to the stomach and what Beaumont did maybe being out on

the frontier like that gave him the time to do this he did a series of experiments on how the

function of the stomach worked in digestion dropping foods in with tied to a string

extracting fluid and doing results in vivo as well as in vitro and he published the results in

1833 in the physiology of digestion

uh as part of this Beaumont assigned an agreement with San Martin an agreement

it's a doctor of it was basically employment as a servant um uh

and in exchange for lodging and payment of 150 a year uh saint martin also agreed quote to

assist and promote by all means in his power such philosophical or medical experiments as the said William shall

direct a cause to be made on or in the stomach of him

as far as the features of what uh Beaumont guaranteed to do the investigator must be conscientious and

responsible the voluntary consent of the subject is necessary and the experiment is to be continued when it causes

distress to the subject whether this was voluntary consent some have argued may be questionable since San Martin was uh

pretty clearly illiterate given that his signature on the document was an x

by the way uh the other uh feature of this is that this is the old style uh

experiment on one person a very limited number of subjects club Bernard in the middle of the 19th

century was a very famous French physiologist who was responsible for

especially discovering the functions of the liver as well as formulating the idea of homeostasis

the internal milia in addition to his large numbers of researchers he did most of his

experiments on animals but also published a book in 1865 on

experimental medicine which he spent a lot of time talking about conducting research

including such observations that to perform an experiment on anyone that can save a

life is not just the right but the duty but it's wrong to perform an experiment

which might be harmful to him in any extent even though the result might be highly advantageous to science

final example at the end of the century comes it's more fully an example of research with large numbers of subjects

comes from Walter Reed who had a commission to Cuba in 1900 after the Spanish-American war to study yellow

fever in the Spanish-American war between the United States and Spain and Cuba

three or four hundred uh soldiers died from wounds on the battlefield and a couple of thousand died from disease

and among the most dangerous of diseases was yellow fever reed and his commission tested the

vector for transmitting yellow fever that was discovered by Cuban Dr. Carlos Finley and the way they uh tested it was

to collect mosquitoes which had bitten infected patients and then have them bite those that had

not been exposed the volunteers were drawn mainly from American soldiers but also some other

American personnel as well as the Cuban inhabitants uh there were some uh deaths

and they were criticized by the newspapers back in the united states so that's another element that we

can see here in this experience experiment but of note noticed the actual uh

written consent forms that were developed by reed uh to be signed by each of the volunteers this is actually in Spanish

signed by one of the Spanish volunteers or Cuban volunteers which

contains uh that the person understands the well that in the case of danger

uh okay in the case of developing the fever the life will be in danger

um but that he will receive the greatest care a sum of a hundred dollars in American

gold which was a lot of money at that time was also part of the agreement

so summarized by this latest change in the 19th century of uh codes of conduct

and experimentation several of the main features of what later became codes were evident by the

end of the 19th century including a notion of risk versus benefit as well as informed consent

but these practices were not very widespread or very broadly binding

which leads us to the 20th century which in many ways continued the developments

of the 19th century as far as a number of subjects and things to be taken in the grant and so

on but and these include for example that uh

but also becoming even more so the case so public awareness and public concern

continued to rise as the public became even more aware of what was going on mass press

and public opinion democratic government spread even more in the 20th century which were more

responsible to their subjects there was increased support for research

not just by universities but also the government uh providing research as well as foundations the Rockefeller

foundation and as we'll see ultimately in the last part of the 20th century in the united states

national endowment for national institutes of health

research itself changed requiring more subjects for research especially the discovery of germ theory and infectious

diseases and the treatments required large numbers of subjects and large numbers of

subjects were found not just in hospitals but also in schools and in prisons and in asylums and these became

the places where the large numbers of subjects were found for research

there were also some unpredictable accidents in the 20s of history in the 20th century most important of which were

world wars that produced in addition to unprecedented government spending on

research including medical research a change in the balance of the benefit

versus risks wartime like epidemics have increased

benefits for doing research and therefore it loosens the or increases the willingness to take risks

this was not just this was actually the case in the united states but of course more most notoriously in the experiments

of the Nazis and Japanese medical experiments in concentration camps

so it's been documented some of these abuses

in American medical research we don't have time to go into them but some examples some of these

the committee on medical research that was established during the war provided tremendous funding for two or

three hundred experiments some of which were most of which were very beneficial and quite spectacular the most

spectacular which was the ability to produce penicillin in quantities large enough to treat people which was perhaps

the most important uh cure discovered and other experiments uh

were also quite successful but a few of these have been noted uh afterwards

wherein there was not sufficient protection of subjects including vaccine

that was attempted to be developed against dysentery which was done at a orphanages and institutions for the

quote feeble-minded the source of quinine to protect against malaria with the American troops having

to go fight in the south pacific was important when the Japanese took over the trees that produced quinine so a

synthetic form was important to be developed and many of these synthetics were tempted tested on mental patients

vaccine against influenza was seen as being very important because of what happened after world war one with the

1918 pandemic and so many attempts to find vaccines for influenza were tested

on institutions for the quote uh

the Japanese research was on a whole other scale and a whole other level

uh not as well known as the nazi experiments but the Japanese unit 731 was a subject of a horrendous

use of prisoners for various hypothermia experiments testing plague they actually

tested germ warfare which was used against populations in Korea and Manchuria

the section which is actual experimentation on living humans was also part of it but the best known of

the abused these horrendous abuses uh was by the Nazis and we know about it

because of the trial and the uh ultimately the Nuremberg code that came

out of the trial for the German doctors in December 1946 the military tribunal

opened proceedings against 23 leading German physicians this was following the war trial war crime trials previously

and this was for them uh being willing participants in crimes against humanity the specific charges are quite lengthy

as what they did as far as experiments high altitude freezing experiments

spotted fever sterilization experiments prisoners

to test what would happen to pilots in the air at low altitude oxygen was removed from chambers

there's an example of experiments with seawater they were far worse than these whereas

prisoners prisoner camp inmates were shot in order to see what happened

with infections from gunshot wounds as well as um well i don't need to go on

the results of the trial of the 23 defendants seven were acquitted seven received death sentences and the

remaining ten the remaining uh received sentences from ten years to life

um i mean two of the American doctors who were consultants to the trial uh Andrew Ivey and Leo Alexander

submitted a memorandum at the end for the judges to use and they included it in a section called permissible medical

experiments the 10 points of which have now been become

known as the Nuremberg code the main points of the code if you're not familiar with it are arranged from

voluntary consent uh being needed uh to the quality of the experiments and the experimenters

based on animal experimentation and as well as the question of risk uh

being warranted for degree of risk being warranted by the importance of the research being done

um no experiment safeguards no experiments should be done if death or disabling injury could occur and

scientists must be prepared to terminate the experiment at any stage

the nerve code did not carry the force of law but it was a pretty complete statement

about the use of humans and experiments and was pretty much the basis of subsequent

codes but it was very naive as far as its assumptions about enforcement

and as i said it did not carry any force of law

meanwhile another result of the second world war was government funding of research which was extended after the

war and became the basis of the national science foundation in the united states as well as nih

i see i'm going on a little long i better hurry up uh here's a graph showing the amount of research that was

funded from the 1950 to 1965. take your time

okay good time it's fine it's great it's a very adapting and i think you're doing a terrific job so

take as much as you did i hope you can see if people are awake i can't tell but

anyway um funding from NIH uh beginning in 1950 of 15 million for

external research grew to 593 million dollars for external research in 1965.

here's a graph of scientific and technical journals from 1839 and you can see after world war ii how this sort of

uh dramatic rise shows the amount of research that was being done

meanwhile the adoption of the principles of the Nuremberg code was slow

as witnessed by the declaration of Helsinki almost 20 years later uh the world medical association was

taking up the various features of it and finally coming up with um essentially

the same principles uh but this was um

increased the awareness of people about the various problems and protocols but it ultimately depended on national

medical associations to adopt the various features of the Helsinki declaration and so

it um was of limited practical use as late as the mid-1960s

and meanwhile uh what had happened is examples of scandals of involving human

subjects had arisen in the pre in those 20 years since Nuremberg

two of which were the Brooklyn Jewish disease hospital and the Willowbrook school for mentally

uh the Brooklyn Jewish hospital was a case where a story broke in 1964 at the

Cornell medical school where senile and demented patients at a hospital were given

live cancer cells the so-called HeLa cells you probably know about these

from another experiment we don't have time to go into the idea was to essentially try to

immunize them against cancer see if it would protect them subjects were told they were receiving

some cells where cancer was omitted researchers said they obtained oral consent but

evidence showed that there were some attempts to cover up another famous example was the

Willowbrook school for the mentally where incoming some incoming patients were given a mild form of hepatitis i

believe this was hepatitis a purposely in order to test for a

possible vaccine the rationale of researchers was that everyone in the school was getting this

hepatitis and they were testing for they were they would be given special treatment and would be

monitored and ultimately they discovered hepatitis b in this but the questionable research as

far as how well parents were informed of their how their children were treated was a

cause for concern i want to focus though on Henry Beecher who

was arguably the provided the most complete and persistent expose of these cases

that ultimately led to the establishment of institutional review boards finally were here feature was a professor of

anesthesiology at Harvard very much concerned with the ethics of research and

first presented his findings uh in March of 1965 in a conference paper wherein he described 18

cases of clinical research without the consent of subjects um these 18 cases were drawn from 22

he found from studying 50 in the published literature by researchers

since 1948 at major u.s medical research centers

the article was published in early 1966 but to give you an example of

them um not being obscure or minor

the various research labs that conducted these quite this questionable release research is listed here at the bottom

Harvard NIH western reserve these are the top medical research institutes nor were these secret the journals that

published these uh findings were the top medical journals in the field of medicine in New England journal of

Medicine, JAMA, journal of clinical investigation

of note and features in Beecher's article uh was the reason he found for the

ethical breaches he attributed it primarily to the increase in research funding of NIH

his conclusion was that these resources for research are greater than the supply of responsible

investigators in other words people weren't sufficiently qualified to do the research not that they were deliberate

but it was more question he said of thoughtlessness and carelessness rather than the willful disregard of patients

rights equally interesting in Beecher's recommendation was his remedy his remedy

was that publication of experimental results must show quote informed consent has been

obtained and the gain anticipated from an experiment must be commensurate with the risk involved now this is currently

the practice but it was not the remedy adopted by the establishment of

the regulation uh issued by the U.S. public health service

in February of 1986 called the clinical investigation clinical investigations involving human

subjects wherein they because of the publication of these various scandals sought to

find a way to protect research involving human subjects

so it's a short statement uh which you can read maybe later i won't

read the whole thing but essentially rather than Beecher's proposal to tie enforcement to publication it tied

enforcement to funding no new renewal or continuing grant was to be given

unless the institution and here's the other key element it's the institution that takes the responsibility

should do a prior review by a committee of associates in other

words not just the judgment of the researcher themselves

the point of it was to guard the rights and welfares of the individuals and moreover a statement of informed

consent was not enough it also had to describe the appropriation appropriateness of the methods involved

as well as the appropriateness of the risk versus the potential medical benefits

to of the investigation this memo establishing review boards uh

was very quickly amended as questions arose broadening the policy to more grants question of who served on it

and the question of people beyond the

question of standards as well so the take on point from the

establishment of the review boards is that um these were created in 1966

involved independent reviewers and the mechanism tied to compliance tied to

funding with compliance warranted by uh monitored by uh the institutions where the

researchers uh were settled uh were employed

now i can't end this talk without mentioning the tuskegee syphilis study and

i mentioned it as an example of a test of how effective government

regulation is as well as monitoring of research by fellow researchers or the press

as many of you probably know in july maybe not you don't know it's july but in 1972 a newspaper article uh revealed

that a research study conducted by the public health service beginning in 1932 involved hundreds of low-income

African Americans with a high incidence of syphilis infection periodically examined over 40 years to

determine whether the course of the disease in African Americans from syphilis was

different in the course of the disease in whites subjects were not told about their disease

and even though a proven cure existed at the time of the project beginning

Salverson and a much more effective one penicillin became available in the early 1950s the study continued until 1972

with both participants and their families being denied treatment now we can talk about this if you want

but i want to look at this from the standpoint of the question of a larger question of the effectiveness of guarding subjects of research

Tuskegee obviously the Tuskegee study uh revelation of the study obviously

heightened awareness of the need to protect human subjects and assure voluntary um

consent um it also increased suspicion among African American communities but the

question is it was not something that was prevented either by the new IRB requirements of

the government oversight after all the study custody study was carried out by the very public health service that issued the requirements for IRBs so they

were unaware of the Tuskegee study moreover the study was not prevented by

the publication of results because contrary to this editorial cartoon showing that the researcher was doing

this in secret results of the Tuskegee study had been published since the 1930s in the general

literature without it being able to recognize or stop the study it was not one of the

abuses that Beecher found nor as i said did public health service know about it

in fact the Tuskegee study stopped because of the news report public health worker Peter Buxton told

gene heller a reporter for the Washington star about it and she wrote the story in July 25 1972 that broke the

story very quickly within days other newspapers picked it up and it spread

around the country from Milwaukee to south bend to St. Louis to Oregon and

beyond editorial cartoons demonstrated that and

ultimately government action followed as you can read here we don't have time to go into it um

it took a little while for the public health service to end the study uh hearings began

a lawsuit was filed lawsuit was settled in 1974.

treatment finally extended to families in 1975 and Clinton's apology in 1997

you may remember from our standpoint finally to summarize

this talk Tuskegee experiment can obviously be seen as evidence that the safeguards

that i've mentioned did not work the government conducted the study three of the studies three of the cases

studied by Beecher was done by the government and the government funded 11 of the cases that Beecher published in

his article Tuskegee results were published from the 1930s and 1960s

five of Beecher's cases were published in the New England journal of medicine and others this did not uh result in

them being recognized or stopped at least immediately and it took over 40 years

until 1972 for the press to break the news about Tuskegee

on the other hand in a broader sense the safeguards eventually did work

irbs and subsequent government regulations were established after 1966

as a result of partly Beecher's article which depended on published reports of

questionable experiments as well as the government being aware of the published reports and of course the Tuskegee whistleblower

um knew about published literature and heller's Washington post article got the

government to do something changes to the IRBs have come afterwards

as you can see from this list on

including the national research act that actually followed largely from Tuskegee and ultimately resulted in the Belmont

report common rule in 1981 and the 1994 nih requirement of training for

responsible conoco research and that's basically the origin of this talk which came when indiana university established

its uh research uh ethics course that was is still to this day being used to train

researchers here at indiana university okay i'm going to stop sharing and go back and see if

anybody's awake and if there's any questions or comments

we're all awake though on the edge of our seats i will defer to others i can always grab you over coffee to ask you a

million questions about what you said but uh let's let anybody would like to go um please go ahead and bill you can

you can call on them and raise your hands just start talking great thanks

jane hey bill i wrote this in the chat but i'm going to go ahead and read it first of all this is a great talk i so

appreciated it and i'm sure you didn't put anybody to sleep at all um you know you're you're

the visuals are fantastic as well i can see it took a great deal of time and attention to put together this

information um i'm going to ask a really broad and general question because i think you

know like many people i've been really troubled by

what we see as a kind of creeping anti-science mentality and i wonder if it makes sense

to understand today's anti-vaxx mentality as a cultural reaction uh albeit a slow

moving one on the part of social groups who historically have been disadvantaged

by human subject testing in the era before informed consent and all this risk benefit analysis had fully

developed you know it almost feels like it's this kind of slow wind-up of

um of irritation and um of a way to kind

of seize the authority or status that people didn't have earlier on it's a very

general question and i don't know if you can answer it but i'd be interested in your thoughts

well yeah okay briefly um

reactions to vaccines have come and gone since uh Jenner uh spread it widely for a while and the end

of the 19th century was suspended in England as you may know but it has proceeded

smallpox eventually was eradicated as a result of it um anti-science

skepticism uh has been there it has served some good purposes um

uh but the general pattern of science and medicine in particular

has sort of reached it's reached a kind of a golden age

in the course of the 20th century to mid-century um and then

the reaction against it especially in the 60s but even a little bit earlier has come

by a patient authority patient autonomy there's a whole movement against it that has

sort of brought science back from what arguably could can still be called today an overconfidence

so it is a broad question and there's been a waxing and waning but the general pattern from what i've seen in the

history of medicine is a general rise of confidence and

appreciation not totally at all through the mid-20th century and then the in the second half of the 20th

century sort of a um i won't call it a waning but certainly a

criticism of it bringing it i think appropriately into uh

a good accountability of course you can also be abused there's plenty of cases of abuse and real

um anti-science based on ignorance and prejudice and other things politics perhaps

that's mixed into it as well but those are the broad patterns that i comment on

thanks

anybody else do i see eric meslin's name really on

this list

come on guys this is your chance i i can i can talk bill's ear off uh all the time so anybody with questions about

this or about um oh here we go we have a we have a chat one so do you have chat open i can

read it to you or david you could read it ah

we've got a question about public trust this thing is a moment right so it's very interesting that we're in the moment now where Jane's question now

David's question is about um about is about trust and this current situation i would say part of this i

would i'm just add some flavor to this a little more because i can't help talking either is

that um you know you described a history where the place of science and society and

status was continually questioned and continually struggling and

and developing and facing resistance as you said reasonable and unreasonable so it's

interesting that this time we say oh this is all new you know rejecting science is all new science should be accepted it's like it always has been

that's not the story you tell i'd say anyway now there are a lot of questions coming in here do you have your chat open build you want to choose which ones

you have might be easier for you to read let me let me comment on the one about public trust and science the answer is yes it's

both it's both increased and uh there is uh sort of a um

a questioning of science um it's uh

the discoveries and the ability of science to do things is uh continues to

defy all predictions of what it can do um on the other hand i think

it's legitimate even for those within the scientific community to be critical of science over promising what

it does um one other thing uh

the abuses of human subjects and it's its importance in questioning of

science i think is uh is only part of the reason for questioning of science one of the

reasons for questioning of science in the mid-20th century was the ama's opposition to universal health care

people resent doctors who were motivated

according to the critics more by their own uh ability to gain income rather getting

wealth just not all medical doctors but uh that certainly was one of the reasons there's also the general questioning

authority in the 60s and after uh and other movements as well

that were important um yeah so actually so David i see you came

off of mute and came on camera if you follow up your question and then i'd like to get to Corey Rice's question

also go ahead David if you'd like or yeah the whole ama opposing you first

health care is interesting kind of reminds me of the current argument against so-called big pharma their

interest in medicine and medical ethics and how that's making people question

uh science today government funding of research is of

course another element that's kind of a bargain because there is an accountability and there's sort of a legitimate

question of taxpayers money being used to support things that benefit the few rather than the pet

taxpayers who pay for it we're betting cutting no one at all

cory would like to speak your question if you don't i can i can read it out to bill um go ahead and go ahead um thank you so

much uh dr schneider for this talk it's been fascinating i'm actually an iu alum i work in Vermont now at the VA in

research um yeah so i'm really excited to be here well in this zoom environment i guess

but uh my question is about translational science and how we balance um

the efforts of translational science and um you know how the public kind of

seemingly believes that they're their own experts especially in terms of you know uh vaccinations uh that we were

just talking about and saying that they're doing their own research yet they're technically are not the experts

doing that research they're just googling stuff um however you know i as a researcher

myself i have to also appreciate the effort that's being done

by the public to educate themselves on their own health however how do we how do we balance all

of that well you know obviously i'm not sure

might be it's not something i've studied in depth i could give you a reaction um

i think that doctors have been fooling themselves all along even in the golden age to think that only they were the

ones who ever prescribed how people treated themselves people have self-treated from the beginning

there was a study done in the early 90s that showed that people were spending as much money on

aromatherapy gnc take your pick uh such that ultimately the NIH established this

institute for complementary medicine so that they'd know what people were doing and so that the what they're prescribing

they could tell was um you know not doing harm even if people didn't uh admit that and if

anything since the 90s i think it's grown people's self-prescription self-medication

um on the other hand obviously if things work they work but uh

i mean that's sort of the one sort of historical comment i'd had to give you some perspective on it

and if practitioners know the benefits and disadvantages of parents

apparent patients coming in having done some research depending on what you mean by the

research it can be helpful it can be can work against it great well um we go on for hours i'm

sure people have additional questions bill's information is available we'll make it available through the website the treats talk uh and also he's

he's a pretty accessible guy we're going to put that that sort of uh brief essay i wrote up which kind of summarizes this

um it something i wrote up about 20 years ago as part of self-education and study

but but if you look at the questions bill there may be some questions about historical perspective on things you may be helpful with beyond that that essay

which is wonderful and we can always stretch you to bill and we can help to help too i was going to say bill i was surprised you went over uh on the length

because you started with Hammurabi right so it's good how could you possibly go over if you

start with something from and i did say the one thing to be aware of as we all complain about the IRB that it could be

worse that we would lose our hand for doing bad research so i guess just um be thankful to our IRB friends who are

on this call so again thanks everybody this will be posted on our on our website uh as i described before thanks

again bill for just a great talk and a great time so thanks everybody