Dissemination and Implementation Research: Challenges and Opportunities

To view the original video, please go to https://prevention.nih.gov/programs-events/medicine-mind-the-gap/seminars/dissemination-and-implementation-research.

good afternoon my name is dr. grinnell miles and I want to welcome you to the NIH office of disease prevention medicine mind the gap webinar series this webinar series is Ford's research design measurement interventions data analysis and other methods of interest to prevention science our goal is to engage the prevention research community and thought-provoking discussions to promote the use of the best available methods and prevention research and to support the development of better method before we begin I have some housekeeping items to submit questions during the webinar there are two options first you may submit questions via WebEx by clicking on the question mark in the WebEx toolbar and direct questions to all panelists second you may participate by Twitter and submit questions using the hashtag iniah MTG at the conclusion of today's talk we will open the floor to questions that have been submitted via WebEx and Twitter lasty we would appreciate your feedback about today's webinar upon closing the webinar the WebEx meeting you will be directed to a website to complete a what a seminar evaluation and also send an email with a link to the evaluation your insights will help us to continue to improve this webinar series at this time I'd like to turn things over to dr. David and Marie associate director for prevention and director of the office of disease prevention thank you for now dr. Maria Fernandez is a professor of health promotion and behavioral sciences of the University of Texas School of Public Health in Houston she's also director of the center for health promotion and prevention research her research is focused on cancer prevention and control among underserved populations she's conducted studies on the identification and description of basic behavioral conceptual models of cancer screening and vaccination the development and evaluation of new interventions to increase cancer control and the science of understanding and intervening to accelerate the use of evidence-based interventions in real world settings Dr Fernandez has extensive experience in the research translation as well as in dissemination and implementation research she is a member of the unites dissemination and implementation research in health study section a recent contributions to implementation science include studies to better understand factors influencing implementation and sustainability cancer control practice change in federally qualified health centers and the development of a conceptual model to guide dissemination research and intervention planning it's my pleasure to welcome dr. Maria Fernandez and turn the session over to thank you let's see okay thank you very much today I'm going to be talking about dissemination and implementation research and highlighting challenges and opportunities in this area one of the quotes that I really like that I think embodies my interest in this area and and in fact a lot of the attention is this one by kahlil gibran a little knowledge that axe is worth infinitely more than much knowledge best idol and one of the reasons that I became interested in implementation and dissemination research is that through many years of developing cancer control and other types of interventions I found that in some cases even when they work it was unlikely that they were ever used broadly or scaled up of the public health impact that we hope will happen when we develop such interventions and in fact NH has made this statement that I think embodies the importance of this type of work and that is closing the gap between research
discovery and program delivery is both a complex challenge and an absolute necessity if we're to ensure that all populations benefit from the nation's investments in new scientific discoveries and in fact the field of implementation research seeks to close this gap it supports the movement of evidence-based interventions and approaches from experimental controlled environment into the actual delivery context where the program's tools and guidelines will be utilized promoted and integrated so what about this definition the NIH provides these definitions and there are several in the literature but these are good ones to use as guidelines dissemination is the targeted distribution of information and intervention materials to a specific health public health or clinical practice audience and so it answers questions about or it seeks to answer questions about how when by whom and under what circumstances evidence spreads through the agencies organizations frontline workers and consumers of public health and clinical services whereas implementation focuses on the use of strategies to adopt and integrate evidence-based health intervention and change practice patterns within specific settings so here it seeks to understand the behavior of health care providers and support staff health care organizations or others better implementing an evidence-based approach even policymakers in the context of key influences on adoption implementation and sustainability of evidence-based interventions and guidelines so when we think about research to action and we think we recognize that there's a gap we asked questions about who's responsible who's responsible for getting research used to influence public health is it researchers are they program developers implementers health service providers funders politicians one of the barriers to translation is that they're often the people believe that the responsibility for dissemination lies elsewhere I had the experience of going to a very early conference in this area of implementation science in 2002 especially held in Corpus Christi Texas in which we asked folks we divided people up into researchers and practitioners and funders and asked them who is responsible for evidence and evidence-based approaches and innovations to be used in access in public health and the response was not surprising researchers said I don't have the training or interest and approaches to enhance dissemination of research products grant funding doesn't support such activities and in fact promotion and tenure guidelines don't necessarily support those types of activities and then practitioners thought well yes it would be great to be able to use the products of research but how do we do that it's way too hard to do right now and they believe that the responsibility for summarizing and making research products useful and practical laid elsewhere but if if they said they also said that they were easy to find and use that we would do it so implementation science is a relatively new field right it's probably not as in its infancy but maybe it's 20 years and there are many different products now that help provide information and guidelines on implementation in implementation science then they include this excellent resources book by rock brownson and colleagues on dissemination and implementation research and health which really includes many of the fundamentals a journal implementation science which is an excellent journal providing the latest and implementation science research and then some excellent conferences including a conference that I'll I'll highlight at the end of the talk that include it that happens in December of this year so what are we referring to when we talk about implementation science where does the field of implementation science lie and here I'm going to be using a a framework or a diagram subscribed by Enola Proctor that I think does a good job of answering this question the typical sort of research is trying to look at health outcomes as a result of something that's developed it could be an innovation here I'm calling it an evidence-based intervention and so this is really the usual how does this impact health outcomes and when we talk about implementation science though we're talking about questions about well how does this get implemented and used in practice and what are some of those intermediate outcomes that have
a great impact ultimately on outcomes such as the feasibility the fidelity the penetration of sustainability the cost and where some of the service outcomes such as safety effectiveness equity right so this the field of implementation science sort of lies here and and it's actually broadening and i'll tell you in some ways in which it's stretching across the the the whole sort of the whole gamut of research that includes what and and the impact i'll talk about that in just a little bit so oftentimes whereas what are just what are the types of dni questions dissemination implementation research questions that are appropriate and these can include questions about factors influencing adoption implementation and sustainability of evidence-based programs policies practices or other innovations it includes testing models and frameworks i'm going to talk a little bit about some of the common models and frameworks in implementation science but there's much work to be done in that area the relationships between various constructs that we know influence implementation predictors of implementation outcomes and measurement studies and then there's also questions related to the development and evaluation of strategies implementation strategies or interventions that are are developed to increase adopt implementation and sustainability there's questions related to scale up so once do find that something has worked in a particular setting what's the best way to get it scaled up to get it used in multiple settings in multiple populations there's related to that there's questions about adaptation how do you adapt interventions in order to increase scale up and increase fit across different settings and populations then there are questions related to sustainability how do we want you implement something how do you maintain either its effects or how do you maintain the program itself so this is a slide of scars from excellent implementation researcher Brian Mittman in which we see the difference between clinical research and implementation research on a number of different studies features typically in clinical research and and the things we could put public health and here as well the types of the aim is to evaluate a clinical intervention or a public health intervention to change maybe behavior and in an implementation research we're usually evaluating an implementation strategy or an implementation approach to get something that's been developed used in practice or in public health bedding a typical intervention in clinical research can be a drug or procedure therapy a health behavior intervention an implementation research a typical intervention change it tries to change organizational practice it could include a training it could include various approaches such as audit and feedback to change practice and the way things are done typical outcomes and clinical research includes symptoms health outcomes patient behavior whereas an implementation research its adoption adherence level of implementation and then the typical unit of analysis is usually different well whereas in clinical and public health research its authentication or the community member and implementation research it's usually a clinic a team of facility or at school those making the decision to adopt those actually doing the delivery of the innovation so how do we increase implementation well unfortunately this is often a haphazard process and occurred this principle that is laggy at principal from from Jeremy Grimshaw and a present presentation and what do we mean by that it seemed like a good idea at the time right so we don't want to do this we don't want to decide on implementation strategies that's just because they seem like a good idea at the time we want to take as much care in planning and choosing implementation strategies as we do when we're developing innovations clinical treatments and behavioral public health interventions so what our implementation strategies well implementation strategies have been defined as methods or techniques used to enhance implementation right so anything from adoption implementation of sustainability or all of those of a clinical or public health program or practice it's the how-to component of changing healthcare public health practice and I like this quote like Clara Carolyn Clancy it's how to make the right thing to do the easy thing to do so we
often wonder why aren't our interventions adopted why aren't our public health or practice change interventions readily you know use they work there's evidence that they work why don't people use them well many times it's because it's hard to do that it's hard to change practice are to change the way things are done and there may be lots of different factors contextual and otherwise that make them not that easy to do so part of what we want to focus on an implementation strategies is making the right thing to do easy so there are different types of implementation strategies and this is a categorization and by firing Palin and Enola Proctor have described and that includes discrete multifaceted and blended and the difference between these it's really their sort of categories this grease which means it's a single action or process like for example using a system of reminders multifaceted so combination of multiple discrete stratus strategies or blended so blended is usually multifaceted strategies that have been protocols protocol I start in in a particular way and they're often branded there's been a lot of interesting and recent work done in trying to look at the literature and understand these various strategies that are listed there and environments in 2012 published this work a compilation of strategies for implementing clinical innovations and health and mental health and in this looking at varied illiterate eranda various strategies the processes they use ultimately resulted in a compilation of 68 discrete implementation strategies that in that focused on enhancing implementation by planning educating financing restructuring managing quality and attending to the policy concept and then the compilation has since been refined through the expert recommendations for implementing change or Eric study which sought to develop a wider consensus of strategy terms and definitions and they engaged 71 experts in implementation and clinical practice in a modified Delphi process and this resulted in a refined compilation of 73 discrete implementation strategies and and these these are the ones that are that came out of that process so these are again there's sort of categories of implementation strategies and I think that this has done an excellent job in moving the field forward in this regard that I also think that there's a lot that needs to be done there needs to be there up there's a lot that needs to be done in trying to understand what are the change mechanisms that exist in these strategies why do we think these strategies are going to work and thats some of the work that needs to be done in the planning of implementation strategies and in the decision-making for which type of strategy you're going to use so the evidence base for implementation strategies is mixed there are several strategies that are found to be effective under some but not all circumstances most strategies results in modest improvements passive approach is generally don't work so well and there's actually mixed evidence regarding the effectiveness of multifaceted implementation strategies so again a lot of work to be done in this area but where can you find them one there's are several areas that you could find implementation strategies include reviews and compilations text books treat searches learning from positive events situations and of course developing your own and in just a little bit I'm going to talk a little bit more about the process of developing your own implementation strategies and some key concepts behind that so looking them at this continuum of the stages of research and in understanding understanding where DNI studies typically fit in we're usually looking at this process that can start with very early pre intervention studies than efficacy studies and effectiveness studies and then finally all of these different types of studies that look at the process of implementation now this is sort of the way things usually work but there's a lot of there's a lot of negatives to this and shortcomings to this type of sequential model and some of them have been highlighted by Jeffrey Curran and at his colleagues and they include tradition the fact that traditional clinical effectiveness research tends to declare victory early and is considered finished when effects are shown in one or more settings right but they may be results from us efficacy studies and may not really
have a lot of application or external validity so there's some limitations there and then on the other end traditional implementation research tends to buy into the fantasy that the innovation is ready for dissemination just because it has some established efficacy but what do we do the problem is that there could be this could result in endless rcts of innumerable tweaks of various specific applications and different settings each followed by an implementation study it says long lues long time to public health impact so obviously we don't want this right so Jeffrey Curran and others have suggested some alternative and so there's this excellent paper effectiveness implementation hybrid designs in which he talks about a number of different approaches for really kind of combining effectiveness and implementation research so why are these types of designs desirable one is that des speed that we also Sarah weary fête's it's pretty slow of moving research findings into routine adoption could be improved if you consider these designs that combine elements of effectiveness and implementation research so in these cases we aren't waiting for the perfect effectiveness data before moving forward to implementation and at the same time were we're still looking at effectiveness data are so essentially backfilling effectiveness information while we're testing implementation strategies they're not waiting to test the implementation strategies until we have all of the information of effectiveness so spatially speaking in in this diagram from Brian Mittman where we're looking at efficacy studies and effectiveness and implementation and scale up and spread this is where it fits this is where hybrid designs fit and they describe three different types of designs hybrid type 1 type 2 and type 3 and they really fall on this continuum from effectiveness research to implementation research or a hybrid type one is putting this emphasis on testing the clinical or prevention intervention and observing information on implementation as a secondary sort of emphasis so you're testing the effectiveness of this approach and you're also gathering information on implementation for type 2 it's more of an equal attention to testing a clinical prevention intervention but also testing is an implementation strategy and then type 3 it's really the flip of type one where the primary objective is to test implementation strategies but you're still gathering information about clinical or prevention outcomes now this isn't this is a nice approach when you're testing implementation strategies as a primary concern but all of the information about the effectiveness is about that particular innovation is not yet available or perhaps not available in the types of settings and populations that you're working in I'm going to switch now to some discussion about theories and frameworks in DNI science and I'm going to highlight sever first of all what do we mean when we talk about theories and frameworks and what are just differences between these theories describe a way of understanding events and behaviors they provide descriptions of interrelated concepts or constructs that explain or predict events or behaviors by spelling out the relationship between the variables so series by definition are not content specific their generic their abstract and they're broadly applicable that's what makes some theories frameworks are conceptual structures or scaffold that can provide a systematic way to help develop manage and evaluate interventions because they're more context specific and while they're conceptually different and and often frankly used interchangeably in the literature and otherwise both theories and frameworks can be used to enhance DNI research so good theories I want to just give a caveat for the use of models or framework so I often use the term model to refer to both so you're both theories and frameworks so there's no comprehensive model that is appropriate for every study or every program while there's some really nice models that help and you'll see some of them that help us understand the context and the influences on implementation partly because the field is relatively new not all of these models are well operationalized yet right we're not sure how to measure these constructs within these frameworks and that model should be considered dynamic particularly in in a relatively new field as we learn more about
the relationships of these constructs we may actually realize that there needs to be some tweaking or or
different categorization of these frameworks so in 2012 havoc and colleagues did a review of various
frameworks and models and they use snowball sampling to identify them and ultimately you know
identified 109 and then after excluding some for various reasons type 61 models and they came up with
several categories including which models had constructs flexibility were in line with the socio-ecological
framework were dissemination models versus implementation model so that's a very interesting
important paper and trying to understand you know some of what's out there and there was also a
review by Neilson in 2015 and and here he conducted a narrative review of selective literature to
identify the series models and frame refused and implementation science and categorizing them into
these three sorts big buckets and said where there's models that are process models and process
models subscribe or guide the process of translating research to practice there's evaluation framework
so models that that help us think about evaluation in in a with and implementation context within an
implementation context perhaps looking at implementation outcomes and things like reach and impact
in addition to impact and then there's frameworks for understanding or explaining what influences
implementation outcomes and under those he categorized three different sort of sub categories of
these understanding and explaining frameworks and those were determinants framework classic series
and implementation fairies so I'm going to give you an example of some implementation frameworks
and I'm going to start with a one of the oldest ones and that's a diffusion of innovation theory I had th
the pleasure of meeting Everett Rogers actually was at that 2002 conference that I mentioned and as a
student in health promotion who had studied diffusion of innovation theory I was it was like quite an
honor to meet with him and talked with him about some of these issues but Rogers was one of the first
to start talking about the process of how innovations are adopted and implemented and it started his
work started in in agriculture in trying to understand why certain farms use technologies and
innovations and others didn't so it describes how new ideas products and behaviors become norms it
addresses let all levels individual interpersonal community and organizational and the success of
implementation and diffusion is determined by things like the nature of the innovation and the
characteristics of that innovation there are certain innovations that are more likely to be adopted and
implemented than others the communication channels that are used the time that that's available for
adoption and then also the social system and and how different organizations or systems interact with
each other and influence each other in terms of implementation so the fugitive innovation theory is still
often used in grant applications and papers and trying to understand implementation but what's
important to note as well is that in other frameworks and models that have been proposed including the
ones that I'm going to couple of the ones I'm going to describe here many of the concepts of diffusion of
innovations theory are incorporated into those and another framework that is a very popular framework
that is used to understand implementation and adoption implementation and sustainability is the riain
framework many people think of it as an evaluation framework that signals the kinds of outcomes that
we need to track right reham draws upon work in several areas including diffusion of innovation multi-
level models proceed proceed and it helps us understand who it is that we're trying to reach via the
assessment of effectiveness how do you develop support for adoption how do you ensure that
interventions are delivered properly and how do you incorporate intervention so it's delivered over the
long term there's actually an excellent website and if you just should have listed it here but if you just
type in riain it'll come up that has a lot of resources on rain so every aim is an acronym you've probably
figured it out from the last slide that includes reach of the target population affect efficacy or
effectiveness adoption implementation and maintenance the next framework that I'm going to highlight
today is the consolidated framework for implementation research and this was developed by Lara damn Schroeder and it builds on on work that had been done by Trish drink on others but this framework describes a number of different domains and constructs within those those domains that describe how an intervention sort of move through a organization and and is influenced by the inner setting of that organization the individuals involved the process that's used as it's implemented and then also the outer setting that influencing and influencing this process so the consolidated framework for implementation research or sefer as its referred to often is an overarching typology right in it and it is to promote implementations theory development so it's not a theory in and of itself but it it can help us understand and and test different relationships within these constructs to build theory mention it built on green health since assistive oath of 500 sources plus newer articles and it's considered meta theoretical so this is I think one of the reasons I really like this framework and if the reason that this framework has been utilized a lot and implementation science and it's because it is meta theoretical that it's a synthesis of existing theories however there's really no depiction of the interrelationship ecologic levels or you know specified hypotheses of how these work together it's composed of five major domains I already mentioned these and within each of those domains there are different constructs so in characteristics of the intervention they include things like if they're a relative advantage how adaptable is it how complex is it so things that actually comes from diffusion of innovation theory it includes constructs in the inner setting such as the structural characteristics of that organization the networks and communication the cultures the climate and readiness for implementation it includes this outer fitting domain that has constructs like patient needs and resources cosmopolitanism peer pressure external policies and incentives right so these are all things that can influence whether something is implemented and then characteristics of the individuals so how much knowledge there is about the intervention how much self-efficacy confidence in their ability to implement it and various other attitudes and then there’s the process of implementation so what kind of planning and gauging executing reflecting and evaluating goes on okay so those are all I mean I know that this is a really quick overview but the intention is to just give a little bit of exposure of some of these main implementation frameworks and models and then for you to look into it a bit more if are interested so there's a lot of opportunities for research and one of the areas is in measurement and this is an area that that I have been interested in and my colleagues from the cancer prevention control research Network has done a lot of work in this area in assessing c4 constructs right so there's the work includes assessing constructs force aliens being able to operationalize them understand what levels the constructs should be evaluated in and then the timing for that measurement ok I'm going to switch to another framework this is the interactive systems framework and developed by Abraham lon Desmond and colleagues and in this framework there are a number of different systems that are involved in the implementation and these include a synthesis and translation system a support system and a delivery system the interactive systems framework essentially provides a heuristic for understanding the different systems functions and relationships that are involved in the dissemination and implementation process it helps us identify stakeholders and how stakeholders can interact it's a useful way of organizing implementation theories from different disciplines and helping us understand Oh we'll just this one helps us understand the delivery context it suggests important areas for new research and activities that could improve dissemination and implementation so more recently scientists acacia and a wanders men and others have come up with this additional heuristic right that builds off of the interactive systems framework and it's it's called readiness right and conveniently it translates into R equals MC square and that is motivation times capacity squared and when we're talking about capacity we need general capacity so that's in that
support system as well as innovation specific capacity so these are the types of capacities that are important in implementation and so readiness within this context within this this sort of definition goes beyond just understanding whether a particular organization is ready at the beginning of an implementation effort it could be used for that but it also is intended to be used for understanding as something is implemented how do these things change how does capacity change how does innovation specific capacity change had a motivation how do all these things influence the actual implementation and probably more importantly how can we intervene upon things like motivation and the different types of capacity to increase implementation effectiveness so there are a number of different types of capacity that and you'll face done some commonalities with sefer here on some of these constructs we're working and working together with justification and a wanders Minh and others on the development of measures for these several different constructs with in general capacity innovation specific capacity and also motivation for innovation and as you can see you know these many of these come from diffusion of innovation and the other models that we've seen so I wanted to talk I had alluded to the some of the challenges in understanding what kinds of strategies to use for implementation and also even in selecting them and so I'd like to just take a moment to talk a little bit about developing strategies to increase adoption implementation and maintenance and there are a lot of different processes for doing those my main message is that it should be a systematic process it should be a systematic process that includes participatory approach is and really understanding what the adoption implementation and sustainability goals are and activities and to be so one approach for doing this type of implementation planning is using intervention mapping an intervention mapping is basically a systematic approach for program development implementation and adaptation and because it includes development it actually goes beyond just development of dissemination intervention it could also be development of the intervention from the beginning and so because of that there are actually three ways that implements that intervention mapping can be useful for dissemination and implementation and the first is in designing programs in ways that enhance its potential to be adopted right so including things like including implementers in your actual planning but what I want to focus on is and me another way is to use these processes for adapting interventions but what I want to focus on is the design of dissemination and implementation interventions to increase implementation so this process guides the planner right or the researcher to answer the following questions who's going to decide to adopt the Pro and use the program which stakeholders will decision-makers need to consult who make the resources available who will implement the program and will the program requires different people to implement different components who will ensure that the program i'm using program that it could be any innovation who will ensure that it continues as long as needed what do they need to do why would they do it and what methods and strategies influence these determinants of adoption implementation and meet so it's a very very specific systematic process that takes the planner through you know answering these questions using the intervention mapping approach to come up with an intervention so here's a this is a figure from from the book we're at we're here you have the evidence-based program and and here's the implementation intervention so the focus of this planning effort and the planning approach that I talking about right now is to develop this implementation intervention but in order to do that you have to sort of start from the right here and ask questions and analyze it going backwards so obviously the outcomes are to adopt and implement maintain this particular innovation in this case i'm calling it a program and then what who has to do what in order to adopt it implement it to maintain it and then why would they do it and then the selection of implementation intervention includes the the decision about what methods what theoretical change
methods and how those are going to be operationalized which ones to use and how to deliver them so that they influence the determinants of implementation and ultimately implementation practice I'm going to just the last couple plus I'm going to talk a little bit about particular there are several different funding opportunities that I wanted to highlight one from the National Institute of Health and the introduction you are told that I'm a member of the standing study section for dissemination and implementation research these are the numbers for the program announcement so there are essentially 16 institutes and centers that include including those listed here that support this p AR it serves to organize the dissemination and implementation research agenda across NIH this number is probably higher than this now but they're about over 150 grant funded through NIH since 2006 and there's been a standing review committee since 2010 and this is important because you know in for people interested in dissemination implementation research and there needs to be some expertise and reviewing these types of grants otherwise when they go to typical study sections they might not really understand the focus some of the DNI areas that are ripe for exploration include things like sustainability of evidence-based programs in a changing context adaptability or evolution of evidence-based programs over time and how we can develop implementation strategies to address that adaptation and evolution the impact of dissemination strategies on practice change scaling up this idea of the implementation or X novation when we no longer want in innovation and we need to scale it back the use of adaptive design so testing implementation strategies as a stepwise approach a real-time feedback or monitoring and then the use of big data for implementation research so there are growing resources for implementation including the ones that are listed here there's a lot of excellent training programs there's research infrastructure there's measurement tools that are available and gem and through some of these organizations and websites there's now you know many trainees that have gone through these programs that are becoming experts in implementation science the journal that i mentioned the textbook that i mentioned and a really excellent conference if you're interested in in this area of research is the annual dissemination implementation meeting and this year it since december four through six and then this is just a list of some dni resources that i think are really helpful and i'll leave you with and that concludes my presentation it be happy to take some questions I thank you Dr Fernandez we do have some questions so since you're a member of the standing study section that reviews this kind of research members of our audience would be interested in what advice you would give especially to investigators that might be putting in one of their early proposals what kinds of things to the reviewers like and what kinds of things are the reviewers not like in applications that come to that study section yeah well I think that's a very broad question and there are lots of answers to it but let me just highlight a few key things when I you'd the different types of hybrid designs and I think that it's important that if you are submitting an application that is not necessarily a traditional dissemination implementation study in the sense that it's testing and implementation intervention so more like a type 3 or even just looking at the implementation intervention without effectiveness it's important that you highlight that so if you're submitting a study that is really most focused on effectiveness but you're also doing some implementations assessments it would be good to highlight that it's a highly spike one and describe why you're doing that it may be because while there's some evidence of effectiveness for a particular innovation it hasn't been tested in particular studying and that's why the focus is on effectiveness another suggestion is that choose a model or framework to use and make sure that you carry that through all the way through the application so sometimes we'll see an application where they might mention r EA more safer in the in the background section or somewhere early in the grant application but it's not really reflected on how they're going to apply that model or framework.
throughout the application so it's important that it's used and depending on the type of application in the to inform the development of the implementation strategy or certainly the measurement of the outcomes let's see what else and then earlier in the slide I and I don't know if I can see how I'll put it on types of research questions right so if I think that this these couple slides give some good guidance about you know is this because we get I get asked a lot is this a DNI research question and and so if it falls in this category of trying to understand factors that are influencing the process in some way whether you're testing the model or doing some predictors or measurement of these constructs but it probably does and then if it's been evaluating a particular strategy to increase implementation then I think that it probably does are many of the interventions that are used in D&I research involve multiple levels and that suggests that multi level measurements for multi-level methods for measurement and for analysis of the studies are important can you comment on that yes yes that's absolutely true and and so I think and as you as you probably know while required if you're if you're doing and a study that is functioning at multiple levels it's also very challenging it's challenging too often times to get the number of organizations the necessary to do some specific types of statistical analyses that are you know considering multiple levels and so I what I would suggest in this regard is be clear on what for sample size calculations and things like that be clear on what the primary outcomes are for sure measure across multiple levels but you may not be able to power a study on every level another important consideration is as we think about the measurement of you know some of these constructs that I talked about we really need to pay close attention about what at what level they're being measured so oftentimes we ask questions of individuals that are nested within an organization and sometimes we're interested in about we're interested in the characteristics of those individuals themselves and sometimes we're interested in their perception or their rating of the organization such as when we're thinking about organizational culture things like that so those are things that you have to think carefully about but absolutely you know thinking about implementation interventions and strategies as a multi-level process is is very important I also would recommend the use of mixed methods approaches in in the design and certainly analysis that these types of data it's a way to overcome some of the limitations of dimension like sample size and things like that hi Maria can you hear it I can okay good we have a little technical difficulty on our enemy and loss of sound for a few minutes could you talk a little bit more about how adaptive designs can be used in DNI research yeah sure so and I am by no means an expert in this area but I have I have done collaborated on some projects that use adaptive design so the idea of it of adaptive designs or interventions that are different in different contexts is that not everyone needs the same thing at the same time and so and it's the same with implementation right though for implementation there are some organizations or groups that are making decisions about adoption or have different levels of readiness for implementation that need certain doses or certain types of strategies to increase their decision to adopt or their capacity for implementing and some are different than others and therefore this idea of a one-size-fits-all approach you know it's probably not true and so designs in which you're able to give different sort of doses and vary it by time to two organizations in terms of implementation strategies is a really appealing one and interesting one and this is particularly true because of the cost of some of these implementation interventions so if you think about you know a training for to change of clinical practice that might not be the first approach that you would try in a scale of effort you might try a lower cost approach first and then depending on the uptake or depending on the need then you would follow up with a wit with a more intensive approach so I think that that those kinds of designs allow for that and allow us to test whether or not that makes sense ok um so someone asked um was there another journal that you
recommend besides the implementation science journal oh yeah that's a good question and I wish I had thought of that before I would have a list for you I don't know if there's any ability to follow up but I can tell you you know from my field right so for health promotion behavioral science public health their journals that are interested that said published prevention research and I think Public Health Research intervention in particular are interested in it the ones that I'm really familiar with his health education and behavior that's the journal that often publishes studies that have to do with interventions and evaluations of interventions also interested in implementation of those you can send us a list of journals if you're if you'd like to do that we can post it with the other materials on the website so it is possible a follow-up I'll do that thank you another question is can you comment if community participatory research and implementation research are the same no they're not the same however there is there's a lot of print there are a lot of principles and processes within community-based participatory research that I think are absolutely essential for the work and implementation science then Nina wallerstein and others have done some really excellent work in this regard and so so just briefly community-based participatory research rate the principles are the main premise is that you involve the community involve those people who are going to be the targets or the priority population of whatever intervention in the entire process though in the process of developing that intervention the process of evaluating and etc by the state and so those that same type of idea that same type of sort of thinking about the importance of involving people who are going to be responsible for making the decision about adopting a particular innovation those who are going to be delivering it and those who are going to be responsible for maintaining it over time the it's incredibly important to include those people in the planning of implementation strategies and implementation intervention as well as in their evaluation and so while not the same I think that there is a lot of overlap and certainly the principles and processes and in even probably some measures of community-based participatory research can be used for implementation science and thank you that's about all the time that we have for today we really appreciate your presentation there were quite a few more questions that were posted to the WebEx and please feel free to email Dr Fernandez and those questions so we want to thank you for all the you some information that you provided and thank you to everyone who participated in today's webinar on the medicine mind the gap website which is prevention nih gov flash mind the gap you will find several resources for this talk including the slides references and a link to complete and evaluation your feedback is very important to us as we plan future sessions thank you again for your time please join us on jun 15th or webinar with dr. william vollmer from the kaiser center for health research about the use of electronic medical records and prevention research thank you