The Changing Landscape of Global Public Health
Kaiser Family Foundation
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MALE SPEAKER: The Mailman School Public Health. Linda Fried.

LINDA FRIED: Good morning. Could I invite everybody to take their seats? We have such an exciting day ahead of us. I had the opportunity to greet many of you at last night's really remarkable event honoring Allan Rosenfield, and The Act of Courage Based on Knowledge. It was an inspiring occasion for me and I hope you will find that it aptly set the stage for our deliberations, our work and our collaboration over the next two days.

Now, I have the real profound pleasure and honor, on behalf of the association of Schools of Public Health, the London School of Hygiene and Tropical Medicine and Columbia University's Mailman School of Public Health of welcoming you to the conference, the working conference on the changing landscape in Global Public Health.

I can guarantee when I look at who is here in the room that we have more inspiration ahead of us today because of all of you. We have this morning to start us off and frame the day and our aspirations and goals, one of the most distinguished and eloquent speakers whose great intellect always brings clarity and insight to the challenges facing our time.

It is my really deep pleasure and an honor to introduce to you the president of the Rockefeller Foundation, Dr. Judith

Rodin [misspelled?]. Dr. Rodin is the twelfth president of the Rockefeller Foundation, an organization which will celebrate its centennial in 2013 and has perhaps the most distinguished legacy in public health throughout the world. The Rockefeller Foundation's very first grant was to an organization known as the American Red Cross. Over the years, it was Rockefeller that made the investments which served to bring plagues such as hookworm and malaria under control.

Whether it is improved food production worldwide, the green revolution, which is credited with saving more than a billion lives around the world; the centrifuge, the electron microscope, the computer or schools of public health around the world, they each have one thing in common. And that is the root and their fruits which lie in strategic visionary investments by the Rockefeller Foundation.

Today, among its many global and global health initiatives, Rockefeller is focusing on the transformation of health systems, so as to make healthcare more accessible, effective and affordable worldwide and to accomplish health for the world's population.

Further, they are linking global disease surveillance networks, so as to minimize the spread of infectious diseases that can lead to pandemics; while improving the monitoring, detection and the response to infectious diseases such as ebola, SARS and avian influenza.

The Rockefeller Foundation successfully engages the private sector to work with the public sector in developing policies and practices to provide and finance health services for the poor. And it affirms its pioneering philanthropic mission by supporting and shaping innovations to ensure that more individuals, communities and institutions access the benefits of globalization while strengthening its resilience to globalizations known and multiple risks.

Approaching such complex challenges with bold global solutions is the Rockefeller Foundation trademark. And one that is carried forth today in the same spirit under Judith Rodin's exemplary leadership.

Judith, as many of you know, was the first woman to lead an Ivy League institution as President of the University of Pennsylvania. Earlier she served as chair of the psychology department, then dean of the School of Arts and Sciences at Yale University and ultimately the provost at Yale. It was at Yale where she conducted her own groundbreaking research in aging and health, social environmental behavior on psychological factors and obesity in an aging-related outcomes, eating disorders. And really, as a leader in thinking about women’s health including from the perspective of her contention that women’s health has unique risk factors and modifiers, which I think we would all now agree with. And that gender

roles and change in roles have profound effects on the gender differential and mortality rates as well as morbidity.

And in her seminal work beginning in 1990, the issue of unique issues regarding AIDS for women. Her analyses were pricient regarding a number of questions ahead of us today and tomorrow, such as the interactions of biological and behavioral characteristics. How they modify each other's risk effects and their joint effects on health. And how health systems must operate at all levels of society.

Judith has published well over 200 articles and chapters in academic publications, and has authored a number of books including one of my own favorites, The University and Urban Revival: Out of the Ivory Tower and Into the Streets. Her work in aging, in particular, influenced the trajectory of my own career and informed significantly my own translational research on the subject. Thank you, Judith.

Judith is home whenever she's with us, having earned her PhD here at Columbia in 1970 and being the leader, of course, for all of us of the Rockefeller Foundation's public health future. We are profoundly grateful to her for being with us this morning and agreeing to deliver the conference's official welcome address. And so, without further ado, please join me in welcoming Judith Rodin.

JUDITH RODIN: Thank you Dean Fried for that extraordinary and very, very generous introduction. And good

morning, everyone. I'm delighted to see so many of you here. I also want to acknowledge some of my own Rockefeller colleagues. Jack Rowe, who is a member of our board of trustees; Ariel Pablos-Méndez, who is leading our work in health, one of our managing directors, and my special assistant, Ted Grant.

Linda, thank you for reminding me how wonderful it was to work on all of these areas and what a great future we all have together in considering this work and all of the work that we do together. And thank you for your leadership of the Mailman School, which has been really pioneering the frontiers of public health for more than 90 years.

I also have to salute you for last night's tribute to Allan Rosenfield. I think anyone who was lucky enough to Allan, knows that he possessed not just a brilliant mind, but really such a wonderful character. And all of us know what a difference he made to so many lives worldwide, especially for mothers in developing countries, maybe the all too often forgotten M in MCH.

We've gathered today to talk about the changing landscape of global public health and to create a new vision – a vision for public health leadership in the 21st century. But I guess I'd like to start, I guess as Linda did a bit by taking us back to the start of the 20th century. Because we need to

remind ourselves of the distance we've traveled and the spirit that brought us this far.

In the early 1900s, health challenges were among the greatest burdens to society, even in the United States. I don't have to remind this audience that in those times medicine was probably more of an art than a science. Bloodletting was still a commonplace treatment. Diseases like TB and typhoid ran rampant. Antibiotics were still unimagined.

And rural areas suffered devastating illnesses of their own such as hookworm; an insidious debilitating disease that ravaged poor communities, in particular. Hookworm was the consequence of primitive plumbing, poor soil and water treatment and the lack of footwear. But the disease was more than an individual infliction. It was a community infliction. It zapped victim's energy, leaving them unable to learn or work, contributing to southern states impoverishment at the start of the 20th century.

And then 101 years ago this week, a revolutionary change got underway. On October 26, 1909, thanks to a million dollar gift from John D. Rockefeller, the Rockefeller Sanitary Commission for the Eradication of Hookworm was established.

Over a five-year period from 1910 to 1914, a team of doctors and nurses and health officials led a vigorous public health campaign to eliminate this scourge of the poor. Education was considered as important part of the campaign as

was treatment. Public school systems and the press were enlisted alongside medical professionals. The effort led to the eradication of hookworm and certainly was one of the great public health accomplishments of the century.

This winning formula of scientific innovation plus strategic implementation was captured in the Welch-Rose Report of 1915 and helped inspire in 1916 the Rockefeller Foundation's establishment of the world's first school of public health at Johns Hopkins University, as well as their support for medical education reform through the work of Abraham Flexner.

My predecessor's didn't use the word innovation. They called their work scientific philanthropy. But innovation was surely their game. It was bold, daring. It was intrepid and risk taking and they weren't alone. Take Doctor Sara Josephine Baker, a physician here in New York City who was appointed director of the City's new Bureau of Child Hygiene in 1908.

She developed programs for midwife training, basic hygiene and preventive care. She created the Little Mother's League to teach young girls how to properly care for the infant siblings. She promoted health education in immigrant neighborhoods, distributed milk to children and created a school health program that was then copied in thirty-five states. By the time she retired in 1923, New York City had the lowest infant mortality rate of any major American metropolis. And just consider this, for the vast majority of Dr. Baker's

career, American women didn't even have the right to vote. Talk about bold and daring.

Of course today, much has changed. We've seen many public health advances in the last century. Life expectancy doubled. Infant and maternal mortality declining throughout the world. Eight of every ten people living in countries where poverty is declining. And yet, significant challenges persist. They test our approaches, our focus and our resources.

Our work on the old problems remains unfinished. Take the hookworm example again for a moment. While hookworm has been effectively unhooked in much of the developed world, the disease remains the world's leading cause of anemia and protein malnutrition afflicting an estimated 740 million people in developing nations.

Or take child mortality. A baby girl born in New York today can expect to live until eighty-two, the highest life expectancy in recorded city history. Dr. Baker would surely be thrilled. And yet today a baby girl born in Sierra Leone can only hope to make it to her 40s. Those kind of disparities as we know exist not only among countries but within them, reflecting the persistence of economic and social inequities that tend to hurt most those who are the most vulnerable.

Meanwhile, as global lifestyles evolve, new challenges are creating new stresses. Obesity is reaching epidemic proportions and non-communicable diseases are rising

dramatically. Even in developing countries we see the impact of behavior and lifestyle, such as increased tobacco use, poor diet and obesity, leading to a rising toll in diabetes and cardiovascular disease.

The health services needed for all these growing burdens are not accessible in many places of the world, where they are paid for out of pocket which can mean the consequences of a medical crisis leading to financial catastrophe for many families. Add this all up and it seems that global public health is surely ready for another revolutionary idea. At the Rockefeller Foundation we're continuing to do our best to help ignite that bold spirit of progress.

In looking systemically at global health, we and others have found that despite impressive vertical efforts against priority problems such as TB, HIV, malaria, it is the health systems that are ailing and week. Symptoms take the form of poor stewardship, dysfunctional service delivery and inequitable financing and are especially acute in developing countries where nearly 10 million children die every year from mostly addressable causes.

As USAID administrator Ra Shah said recently, and I quote, "Visit any African country and you're likely to find a health system organized around diseases and interventions, not around the actual patients. You'll find separate clinics in separate places for AIDS, for children's health, family

planning and obstetric care. Not only is that bad for patients, but it is strikingly inefficient for taxpayers and in many cases we have only ourselves to blame."

And let's be honest, when it comes to healthcare access and healthcare quality, we know that the discrepancies that burden the poor are not limited to developing countries. While global spending on health has increased to some $7 trillion annually, access to affordable quality services has not, including here in the United States.

Yet, new technologies and demographic, epidemiologic and economic shifts are transforming health systems around the world, and therefore there is a window of opportunity to promote strategies that steer this transformation toward better health outcomes and financial protection. That's why Rockefeller has made transforming health systems our next revolutionary goal around which we hope to promote much needed innovation, broker robust partnerships and find sustainable, scalable solutions.

Improving human resources and bolstering specific health services are certainly critical to this enterprise. To that end we're supporting governments with the technology, the talents, the tools and the training to become better stewards of their own national health systems and improve planning, financing and quality of services. But that will not be enough.

To measurably improve the health status and financial resilience of the poor, we also need to transform health financing at the country level.

Consider this, beyond the perils of disease, more than 150 million individuals worldwide face catastrophic healthcare expenditures and as a result, approximately 25 million households are pushed into poverty every year.

High out-of-pocket expenditures also prompt parents to withdraw their children from school using education fees to cover medical costs. The world's poorest people pay the highest-percentage of their wealth for health.

The World Bank reports that in low income countries, out-of-pocket spending accounts for 93-percent of private spending and more than 60-percent of the total healthcare spend. And while on average only 5-percent of people fall gravely ill in a given year, the lack of insurance and effective social protection programs means that these are the people who are paying the lion's share of the national health spending bill.

We are convinced that an indispensible ingredient of strengthening health systems is working toward universal health coverage, defined as access to appropriate health services for all at an affordable cost.

So, I'm really happy to see that the transformation of health systems and achieving universal health equity in healthcare is one of the key tracks of this conference.

Even in low income countries, universal health coverage is not merely laudable, it is possible. Just look at Ghana, which invested approximately 115 million dollars over six years to establish their new health system, boosting coverage from 40-percent to 70-percent of the population. Or take Androprodesh in India, which invested 60 million, 60 million over a three-year period of reform, during which time coverage was extended from 10-percent to 85-percent of the population.

In both cases, the individual investment amounted to 2.5-percent of the total health expenditure for several years. The result – a plummet in out of pocket expenditures from nearly 60-percent to only 30-percent total.

We at the Rockefeller Foundation believe that the international community should share and learn from successes like these. We're facilitating cross-border learning through a joint learning network on universal health coverage. Earlier this year, we brought together health officials from Ghana, Vietnam, Rwanda, India, Indonesia and the Philippines for a workshop in Delhi to trade best practices and new ideas for implementing universal health coverage.

We're supporting new research on the global macroeconomics of universal health coverage and comparative

health systems analyses. And we've convened a global task force on universal health coverage made of up national and multilateral leaders in an effort to share and to align institutional efforts on universal healthcare in low and middle income countries.

But as countries renegotiate their social contracts for health, I believe that you, individuals leading public health, have an important opportunity to innovate. After all, universal health coverage will depend on good ideas, on research and robust science as well as capacity building to support its implementation. These ideas and initiatives will not be born out of biomedical laboratories. Rather, they will emerge from the field of public health and who better to drive that endeavor than institutions of learning like yours and from leaders like you. With your expertise in health economics, in policy and services and your commitment to social justice.

So, given our convening today and tomorrow by one of the world's premier schools of public health, and the fact that this gathering represents some of the sharpest and most innovative minds in the field, let me challenge all of you to be bolt and intrepid. The times demand this. And to ask yourselves, what revolutionary contribution will you in public health make in 2010, in the decade coming, in the century still unfolding.

Society's needs and demands are taking shape in new opportunities that you can seize, including the global strategy for women and children's health. With pledges for more than 40 billion dollars over the next five years. Or President Obama's 63 billion dollar global health initiative, which aims to partner with countries to improve health outcomes through strengthened health systems.

The global fund for AIDS, TB and malaria is trying to become a more holistic support vehicle now supporting health systems research and health systems outcomes as well. And under the leadership of Francis Collins, the NIH has listed health sector reform among his top five priorities.

With the United States still accounting for half of the world's funding for health research, changes at the NIH can help drive health systems research at the global level. But this could mean merely more clinical trials under the banner of comparative effectiveness, and they are important indeed. But they're not sufficient. Unless experts and advocates like all of you here drive efforts to expand the scope, we will not achieve the effort we are trying to accomplish.

You have the leadership platform to make the most of these opportunities and to mobilize real social change under the banner of public health. Assert that leadership to ensure that principles and services that public health stands for are

incorporated into the blueprints for global health in the 21st century.

And let's take inspiration again from the example of Allan Rosenfield who would have been so energized to see all of you here today. I remember a story about Allen as his own health was failing, described him lying on his office couch with a machine pushing air into his lungs and his determination to keep working as hard and as long as he had left. In his words, there is still so much to do. He was right. So, let's do it. Thank you.

LINDA FRIED: Judith, thank you. That was as we expected and hoped. An exciting charge to all of us to attempt in the next two days to rise to your challenge and to really provide leadership on the key issues that are us confronting both now and in the coming decades.

It's my pleasure as part of the opening today to recognize my and our colleagues in the design of what we hope really will be a visionary conference drawing on all the immense expertise in the room to answer Judith's challenge.

So, I'd like to first of all invite up the people and representatives of organizations that partnered with us in starting what is now a process and welcome to the podium, Peter Piot, the Director of the London School of Hygiene and Tropical Medicine, the Dean. Excuse me, Peter. And Harrison Spencer, the President and CEO of the Association of Schools of Public

Health in the U.S. May I invite you up just to welcome everyone?

And while they're coming up – please please come and say hi. While they're coming up, I'll say that we have been working together for two years. And today's meeting is part of what we hope will be an ongoing process of working together with everybody in this room and expanding numbers of people to accomplish the goals that we address and set over the next two days.

Peter?

PETER PIOT: Thank you very much, Linda and good morning everybody. Well, first of all, thank you Linda for your vision and also for your courage to take on what looked in the beginning as kind of an impossible task. And that is what's needed. And that is to transform public health how we think about it, how we practice it, how we teach about it. Thank you for that.

And so that's I think how we should look at this conference. And thank you also Richard Parker and you're team for making it possible.

We at the London School of Hygiene and Tropic Medicine are really not only pleased but also very proud to be a partner in this adventure, I would say.

In Europe also there is the start of some thinking of how we should adapt public health, global health to the 21st

century. And I'm very pleased that Antoine Flahault is somewhere here in the audience. He's the President of the Association of the Schools of Public Health of the European Region.

Now the world is changing at an unprecedented speed, and so is health. So the landscape is truly changing, and it's changing in a sense and often in paradoxical ways. On the one hand, the world is becoming far more convergent. But also inequalities and divergence are also increasing at the same time.

We've seen not only the greatest progress in life expectancy, in child survival over the last fifty years. But the last decade there has been an incredible momentum of interest and action on health globally. And driven by basically two things, or three things.

One – the AIDS movement. Two – the awareness that health is not only a cost but also an investment and has become far more political than before. Some of us don't like that. Some of us welcome it, and we have to really make sure that we make the best out of it. And also driven by Generation We. The new generation of young people that are putting pressure all over, I would say, high income countries in doing more on health globally.

And at the same time there is a phenomenon of globalization of higher education. Now global health is a new

term. I started my career in tropical medicine. We come all from very different angles here. The term global health didn't even exist. And we still can discuss what does it cover. It's covering both a field of study of inquiry and an area of action.

Now public health is a crucial element of the global health movement and of global health, as it provides both the science the evidence and the experience and the practice the approaches for improving the health of populations as a whole.

But there's also a new paradigm of global health that is emerging. And which I think goes back to the roots of public health, the 19th century, when we didn't have much technology. And I feel that this global health new paradigm is a unifying movement in a sense that it's bringing together multiple disciplines and my friend Mike Mersin says often, Global health is a big tent with multiple disciplines providing these essential contributions to improve the health of populations.

Public health is often in the lead but sometimes its medicine. Look what the availability of anti-retroviral therapy has done for public health and for global health in terms of survival of people with HIV. Sometimes it's the engineers. Think of water and sanitation, agriculture, business and some.

So the boundaries of public health and of global health are not defined yet and maybe we should leave it that way. That's fine.

And we must also acknowledge that there are sometimes differences in opinion. And I think that's all very good. But let's agree on some of the basis of our common vision and I would just like to give five elements and then I'll stop.

The first one is that global means local and everywhere else. Walking around in Manhattan here it's the United Nations are in the street. And in contrast to international health and what some people think of global health, it's not only thousands of kilometers away or miles away, but it's really something where we have to integrate the local and the global. It means also that we should stop talking about we have study sites here and there. No, we are part of a a network where strengthening each other's institutions and learning from each other wherever we are is key.

Secondly there's no single discipline that is really going to make it. It is the synergy of various disciplines. The problem is that our world is not made from multidisciplinary funding and career development and research and so on. But we have to change that. And it means also that we have to recognize many of us come from a health background that no health system factors are so important as the terms of health.

Thirdly is that the common goal is really the health of people elsewhere, everywhere but it's all about inequities and resolving these inequities.

Fourth point, science is our basis.

And lastly, and this is also the legacy of Allan Rosenfield. It's not only about evidence-based policies. It's evidence informed by human rights and health is a right. And I think that's one of the main things that I've learned from Allan.

So this conference I believe will be a success if we set up a roadmap not only of the propositional questions because wisdom starts with asking the right questions. But also, by agreeing on the next steps for this transformational journey that we are staring now and reminding that Judy challenged us to be bold.

But I think looking at the room who's here, we are all bold people here and we'll make it.

Thank you very much Linda, again.

HARRISON SPENCER: Good morning. The Association of Schools of Public Health represents the 46 accredited schools of public health in the United States and Mexico, as well as the seven institutions in the United States, Canada and France seeking accreditation.

We're delighted to be co-sponsoring this landmark conference, The Changing Landscape of Global Public Health.

I'm joined today by a number of deans of schools of public health including a number of our board in global health committee leaders.

Accredited schools of public health are heavily involved in global health and many are the lead college in their university for these activities. All have international students. Many domestic students are interested in global health. Most schools have a department or a center focus for global health. And most have global research activities and collaborative relationships.

While virtually all accredited schools of public health have NPH tracks or specialties in global health, several have moved recently to globalize their entire curriculum so that all students are exposed to global health perspectives. The idea for this conference began with a conversation by the ASPH global health committee. There was a recognized need for a different paradigm and approach to global health in schools of public health.

A plan emerged to remember in honor Allan Rosenfield through an innovative conference that brought together global health thought-leaders. Allan was a friend and a mentor to so many of us as we heard so clearly in the wonderful evening last night, more than anything, Allan was a person of great compassion who was passionately committed to global health,

equity and social justice. He would have definitely approved of this conference.

We certainly would not be here today without the superb leadership of Dean Linda Fried. Her extraordinary commitment and determination, and I underline that word determination, and vision have been so crucial. Without her efforts, this certainly would not have happened. Thank you very much, Linda.

Richard Parker and so many of the other faculty and staff from the Columbia Mailman School have worked tirelessly to bring this meeting to reality, as well a planning group of many global health thought-leaders has importantly help shaped the agenda and contributed background papers. And again thanks to you.

As part of the planning process, and recently published in the Lancet, a number of deans of schools of public health reflected on the tenets of a redesigned global health system that could accomplish optimum health for populations. These include global health is public health and public health global health for the public good.

Dedication to better health for all with particular attention to the needs of the most vulnerable population and a basic commitment to health as a human right.

An evidence-based systems approach to health promotion and disease prevention that examines broad determinance of health and creates integrated approaches.

Commitment to an interdisciplinary approach and collaborative team work to analyze problems of populations.

Multi-level systems based interventions deployed to address the interactive contributions of societal and health governance issues, corporate responsibilities and environmental behavior and biological risk factors.

And a comprehensive frame works for financing and structuring public health policies that support community-based and clinical prevention integrated with healthcare delivery.

These tenets reflect a nuance in contemporary perspective that emphasizes interdependence and recognizes the many contributions of both resource-scarce and resource-rich nations. With a new understanding that many health problems have a linked ideology and a common impact and that innovative solutions can come from all sectors, collaborative relationships become at a minimum bidirectional and optimally multilateral.

This contemporary perspective has implications for education and research. It implies the need to examine and redesign all health profession education, particularly medicine, nursing and public health, to better emphasize interprofessional education and population perspectives.

As well, multilateral approaches to research imply need to consider the wall global health research questions are framed, how funding streams are allocated, how relationships

are structures and how results are translated into interventions.

This is a seminal conference that will help us reflect thoughtfully on global health in the 21st century and on many of these issues.

ASPH is very pleased to co-sponsor. We look forward to the discussions and to the outcomes.

Thank you very much.

Linda Fried: And now it's my really great pleasure to introduce the person who led the charge in bringing all of the vision to action in the form of this conference.

So it's my pleasure to introduce Richard Parker who is Chair of the Conference Organizing Committee. The cracker of the visionary and the action-oriented whip and a Professor of Sociomedical Sciences here at Columbia's Mailman School. Richard.

Richard Parker: Before anything else, let me also add my words of welcome to those of all the speakers who've preceded me.

This meeting has been nearly two years in the making and we're extremely grateful to everyone who's participated in the planning process. And above all, to all of you who have traveled in many cases great distances to be with us today. I want to comment quickly on the goals, processes and outcomes

that we hope to achieve during the short time that we have together.

When we began the planning process, a number of things seemed clear about the current state of the field of global health that warranted further reflection and convinced us that yet another meeting on a subject that has already been discussed in so many recent meetings might nonetheless be worth the effort.

It was obvious for example that a massive explosion of this field has taken place over the course of the past two decades.

Thanks to the work of Christopher Murray and his colleagues, we know that international development aid for the area of global health has risen from 5.6 billion dollars in 1990 to 21.8 billion in 2007. This massive influx of funding has been accompanied by a veritable population explosion in new global health initiatives, in academic centers for training and investigation, in discrete research centers, in voluminous publications, and so on.

Global health is all the rage and it seems likely that the rapid expansion of this field will only continue to grow in the medium to long-term future.

That said, as is the case in almost any rapidly expanding field, the pace of events often moves more quickly than our ability to accompany them with analysis and critical

thinking. The velocity of scale-up often advances more quickly than we can mount a conceptual architecture capable of accounting for the events taking place around us. And the need to periodically step back to step back from this flurry of activity in order to take stock of where the field is and where it is going. And to reflect critically on the key challenges that we confront is especially important.

This is perhaps all the more true in the field of global health than in many other rapidly expanding areas precisely because of the nature of some of the most important dilemmas currently facing this field. Just as the language of global health is relatively recent, taking place largely over the course of the past decade, the articulatulation of a conceptual framework for the field is still in its infancy.

The extent to which a global health framework has been elaborated and articulated in ways that represent a true paradigm shift in relation to earlier notions of tropical medicine or even international health is questionable at best.

It often seems that we have simply relabeled or rebranding earlier conceptual frameworks rather than having actually articulated a new conceptual architecture capable of taking account of the changes that have been taking place in the global system and of truly engaging with the profound interdependence that characterizes the globalized world of the early 21st century.

Intellectual limitations that have prevented us from fully implementing a true paradigm shift from the framework of international health to one of global health have of course been accompanied by distortions and disjunctures that continue to exist in relation to both resources and power within the field of global health.

While many of the most important challenges that have been the focus of the field have been concentrated in resource poor settings and in the global south, much of the influx of new financial support and the continued center of gravity in terms of policy making and decision making has continued to be centered primarily in the global north.

Those most affected by policies and decisions have all too often had little input into the thinking behind them and little ability to influence the kinds of programs and approaches that have been prioritized.

In short, there is still much that needs to be done to make this field a truly global one in every sense of the word and to achieve a more fundamental paradigm shift in ways that will make the field of global health distinct from earlier conceptions of international health.

Meaningful public health thinking and practice about the possible population-level solutions to our most pressing global health problems can and must make central contributions to bringing about these transformations. That said, the many

changes that will be needed in order to confront the large issues facing this field can hardly be achieved through one short two-day meeting. We need to have a good deal of humility about our ability to influence such complex changes.

Yet they nonetheless provide a backdrop against which the planning of this meeting has taken place. And it is surely in relation to these large backdrop issues that our discussions will unfold over the course of the next two days together. They've guided our thinking through the planning process, including a key planning meeting that was held in early March of this year, a meeting that many of you present here today also participated in.

One of the most important outcomes of that meeting was a clear message to avoid organizing another fairly traditional conference made up of scientific presentations, keynote speeches and the like and to opt instead for a more interactive, inclusive and hopefully innovative approach aimed at bringing together key leaders in the field of global public health from diverse sectors as well as from diverse regions.

To seek to open up new discussions and debates about the challenges facing this field both in the present and in the future.

Special emphasis was given to include a wider range of constituencies and stakeholders than is often able to be present in such discussions, as well as new voices and

perspectives that are not always represented in some of the existing fora where such issues typically are discussed.

Emphasis was also given to try and to create spaces for interaction and debate that would possibly go beyond the limits of a one-off event and make this meeting a step in a longer process that might extend beyond it. Through some kind of ongoing activity aimed at creating more inclusive involvement in the development of new conceptual frameworks, the discussion of policy priorities and the design and implementation of programs aimed at bringing about population level solutions to the greatest global health challenges. These are the kinds of issues and reflections that have brought us to the program that we will engage in together during the next two days.

In order to have a shared point of departure for these discussions a number of background papers were developed by people involved in the planning process to offer a sense of some of the biggest questions facing the field.

We specifically asked authors not to worry about trying to write exhaustive review articles covering all of the available literature on any given subject. But rather, to try to be provocative in raising issues and challenges that we need to confront and that we hope the discussions at this meeting will help us to think through more effectively. Much of the morning of this first day of the meeting will be dedicated to very brief presentations of these papers.

As a way of stimulating discussion of getting the ball up in the air for debate, we have also asked to meeting participants to serve as discussants for each of these papers, commenting on the issues that they raise or raising new issues that they may think the background papers have failed to address.

The hope is that these sessions will serve a kind of warm up purpose. Getting our thinking going and helping us to move us in directions and into the discussions that will take place during the remainder of the meeting.

As a second exercise, also intended to help us think together more effectively, right after lunch we will also have a panel discussion bringing together speakers who come from a number of the different key constituencies that we view as crucial actors in the field.

Policy makers, educators, researchers, practitioners, advocates and private sector actors. We've asked each of the panelists to speak from their own positions within the field of global public health about the issues under discussion and about the ways in which different constituencies can contribute to thinking through the field and to developing answers to its most pressing questions and avenues for intervention and program implementation aimed at confronting the greatest challenges facing the field.

Following these initial sessions in much of the rest of the meeting we will be working in break-out discussion groups.

The first of these groups will be this afternoon in which we've asked the members of different constituencies represented here at this meeting to meet with others from their constituency to discuss a range of issues raised in the earlier sessions, and to think together in which the ways in which different actors in the field can contribute in relation to these issues.

Well, it will have already been a long day. At the end of the afternoon we will also have the chance to be together in a more informal setting at a reception that will be held here at the Columbia campus at our faculty house, where other members of the local Columbia community will also be able to join us.

There will be brief remarks by one of our own University's most distinguished faculty members working on these issues, Professor Jeffrey Sacks, as well as by Mr. Anand Grover, the United Nations special rapporteur on the right to health and Director of the HIV/AIDS Unit for the Lawyers Collective in India who could not be with us for the full meeting because of obligations at the United Nations General Assembly today but who kindly offered to join us this evening.

Tomorrow morning we will begin the day with a number of brief synthesizing remarks made by meeting participants who

we've asked to follow discussions during the first day of the meeting and again from the different positions and perspectives that they have to make observations about the proceedings and about the kinds of issues that it would be most worthwhile to pursue during the second day of discussions.

After the synthesizing comments, we will again break into working groups. This time organized not by constituency but rather by the thematic areas that were identified at the planning meeting. These groups have been assigned with the goal of mixing people up. And we recognize that this is an imperfect process and that at least some participants will very possibly not be in the group that they would ideally choose for themselves. But we would ask you to bear with us in recognition of the fact that it is often in unexpected spaces or combinations that some of the most innovative ideas and thinking takes place.

Following these second working group discussions we will also have a very brief discussion of at least one of the ideas that has emerged as a possibility for a way in which we might seek to extend these conversations beyond the confines of these two days together through the development of ongoing knowledge networks developed in relation to these thematic areas.

I would only emphasize here at the outset, as I will try to suggest tomorrow as well, that this is simply one

possible idea among others that might emerge from our time together and is intended solely as a possibly way forward and not in any way to close off thinking about other possibilities that meeting participants might wish to pursue.

Finally, in the afternoon of day two of the meeting, we will have one last opportunity to come together in smaller discussion groups. This time organized with some greater flexibility in choice on the part of meeting participants about the kinds of issues that they think might be pursued after the end of this meeting and the ways in which they might wish to engage in such ongoing discussions.

At the end of the second day, it is our deep hope that even if we have not been able to answer all or perhaps any of the questions that we set out as the focus for this meeting, we will at least been able to air multiple perspectives and diverse analyses in ways that will have helped us to advance our thinking along lines that might not have been possible if we had not come together in this way.

While we want to maintain a sense of all due humility about what can be achieved in any two-day meeting, we nonetheless maintain the conviction shared by many here today, I think, that bringing a highly diverse group of thoughtful and intelligent people together and giving them opportunities to interact and to enter into meaningful dialogue is one of the

key ways in which innovative new ideas can be generated and new possibilities for the future can be imagined.

And we thank you once again for taking the time out from your very busy schedules and making the long journey to be with us here today to join us in not thinking only about the present but about the future of global health, and in particular about the kinds of key contributions that public health can make in enhancing this incredibly important field. Thank you.

Let me now turn the podium over to my colleague, Mr. Alastair Ager, the Executive Director of the Global Health Initiative at the Mailman School of Public Health and Professor of Clinical Population and Family Health at the Mailman School here at Columbia.

Alastair Ager: Thank you. Could I have the presentation please?

During the planning meeting, the notion of a changing landscape was very helpful to us and there were some initial pictures that we shared of actually the landscape we are currently in.

We are around there at the moment. This is an aerial view of this landscape. Around just over 100 years ago, that was this landscape and we were reflecting on the forces, the economic forces, which used to be a place to come on a Sunday afternoon bicycle ride, the vision, the intellectual forces,

the imagination, the migration, the innovation that shaped over 100 years, this space. In terms of culture. In terms of popular activities. In terms of this street which is now a pedestrian area that we just walked through. In terms of political ferment in this area during the 60s. In terms of this cafeteria which some of you know is popularized across the world in over 200 television stations from one Seinfeld comedy as a mark of globalization. This is the landscape that we're in. There are multiple forces that have shaped it and transformed it.

I am reflecting up the global health the global public health landscape and the fragmentary nature of how we would represent that. And we've been searching for a way with yourselves as a way to map the [inaudible] the challenges we see. This was an earlier attempt. This was just the images we choose to use across the world in terms of various global health initiatives to mark the image of what we're seeking to do. But many of you will be aware that in preparation for this meeting we wanted to be sure that the agenda of this meeting was very much your agenda and so we wanted to map that landscape in a more thorough way.

And I want to explain a little bit about these dots which you have helped contribute. Every one of you that was confirmed in your attendance by the end of September was harried by our staff to suggest three key forces, three key

issues that you felt were transforming and shaping the landscape and eighty-five of your responded. I thank you for that. The 85 of you, each suggested three key issues that from your perspective were driving in the way that we saw the world. That gives us 255 suggestions of things that should be on our agenda.

We have these wonderful resources of graduate students who independently went through those 255 suggestions, grouping them in ways that they thought made sense but completely independently of each other. And we have multiple independent raters who were then able to use multi-dimensional scaling software to create that picture of how things went together. But we didn't know initially what those issues are.

Let me tell you what those issues are. Let's start in the bottom right hand corner. These issues there around, lots of discussion around changing disease patterns. Involving the emergence of chronic disease and also emerging infections. But of the retention of the significant burden of infectious disease. Of demographic shifts within populations. Transitions in fertility and in longevity. Population movements, migrations of various form, both internal and international. Economic change that is being driven through that and affected by that. Broader social economic transition within and between countries. Political change and ferment, the change of a world order. The investments in health that

can be made or are not being made partly in reflection of that changing world order. The changing partnerships we see between north and south, between south and south, between public and private partnerships. Human resources and the key issues around capacity for health and health systems in the way that we might provide effective services. Capacity development is a more general issue and linked to that – issues around communication, technology and its opportunities and also scientific advance. If I go further around, ecological crisis, climates change, restrictive water resources and resource constrains. That was your agenda.

And we looked with some trepidation at your agenda then mapped it into something from the planning committee, we could set on our trap towards. And we feel quite comfortable that in terms of the changing health and prevention needs that we've anticipated. Looking at demographic and epidemiologic transitions. Then the group on the papers we have commissioned are very, very much covering that area of work.

In terms of the notion of globalization and global health governance, we feel reassured that there are issues here around globalization that you are indeed seeing affects the way we think about health and the interactions and the structures and the governance of that.

In terms of health systems and the capacity to deliver effective health systems, a major strand and here we have innovations in science and technology.

So around 85-percent of the issues are comfortably, I think or we would suggest, mapped by those areas. There are many issues around here, that you see around environmental conditions and climate change that we want to suggest two things about those.

One we want to suggest that we could consider these as a cross-cutting issue for deliberation within these groups and encourage us to think how those things relates to these issues. But as Richard said also, tomorrow there is an opportunity in terms of the way we structure our final thinking if there's a core group to say we really should give some focused attention towards these issues, we can convene a group to do that.

So that creates a sense of reflection back to you of your agenda, your issues and how we want to try to sync them to reflect them on the program.

The final thing I wanted to share is that there was a contention from the planning meeting that we needed to bring together from diverse perspectives and there were two ways of doing that.

One was to acknowledge this notion of constituencies or the roles that we are currently playing. And so, this is that framework and I just want to show you where those dots came

from in terms of constituencies because there are different parts of this agenda reflecting different groupings out there. Is there diversity in what we see is the issues or do we see issues similarly but maybe we need to bring our distinctive perspectives to them.

So this is what policy makers saw. This is what educators saw. This is what researchers saw. This is what practitioners saw. This is what activists saw. And finally the private sector saw that. And I think you can see there's a mosaic there. You might see some subtle patterns but our conclusion is that we are not differing hugely in terms of the way we see the issues. We may have different perspectives on them, but we share something of these as key issues within the landscape.

And similarly in terms of geography, we asked about where the focus of your work had been over the last 10 years in terms of region. And so those of you who have been focused in Africa saw these as the dominant issues.

In Asia these are the dominant issues, in the Caribbean these is the issues, the Middle East these issues, Latin America these issues, North America there. And again a significant mosaic.

So, we take from that, that we are not – when we dividing people into groups, having particular sections of the agenda driven by one constituency. But we have remarkable

similar view that this range of is key to us. And so the challenge for us on that program is to find ways of bringing together those different perspectives reflecting on what appears to be an emerging map of core issues for us to face.

So, I look forward to our discussions over the next day from our different groupings, particularly around issues focused in this area.

And it's with that I have great pleasure in inviting Linda back to the stage to suggest to us some key propositional questions, related to each of these areas. Thank you.

LINDA FRIED: Well, hello again. As I said at the beginning and you've now heard repeatedly, we think that we are on the, perhaps, third of the way into a process. The process has been building through much discussion and reflection over the last two years. It was deeply accelerated by the planning meeting that over 40 of you were at in March.

And I think the direction was verified in the survey that you all participated in that Alastair just reflected on. What I'd like to do is to report to you – coming out of the planning meeting and worked since then on the propositional questions that we would like to offer to all of you, as the focus for our work over the next two days.

I'll start out by saying that, excuse me, I didn't realize the slides were up. You know, the timing of this meeting is – although it's building on two years of planning,

maybe both appropriate and even timely and fortuitous. We are meeting a year before the UN Summit on non-communicable diseases, and a month after the MDG Review Summit. As I'm sure everybody here knows, Kofi Annan wrote that while, "The true significance of our growing interdependence is becoming increasingly obvious. Lack of concerted leadership is proving to be a formidable obstacle." The message must be that MDG achievement is not optional, but an essential investment in a fairer, safer, and more prosperous world.

But achieving the MDG is only the first step. For even if we succeed and meet all goals by 2013, millions will continue to die from preventable diseases or unnecessary complications. We will certainly need to take the MDGs to the next level after the initial deadline.

The concerns that Kofi Annan raised of course are recognizable to everyone in this room, as well as the objectives. We've seen evidence of great progress, significant obstacles and as Alastair just laid out so elegantly, changing needs, super imposed on significant, relentless, preexisting concerns. Under current frames the problems I think can sometimes seem quite overwhelming to all of us and insurmountable to many.

Addressing the changes already happening on the horizon, even the intermediate and certainly the long-term horizon, might seem impossible when we haven't even solved the

problem of the killers in front of us. On the other hand, there are knowledge breakthroughs within sight and novel approaches that could potentially provide ways forward on many fronts simultaneously, insights, and emerging problems that might help is in innovative ways solve the preexisting ones.

So, I'll start in laying out the propositional questions, back where Peter set us up and just with two definitions of global health that we looked at during the planning meeting. The first statement by Brown, Queto and Fee [misspelled?], that global health implies consideration of the health needs of the people of the whole planet above the concerns of particular nations and is associated with the growing importance of actors beyond governmental and inter-governmental organizations and agencies. And the definition offered by Biegelom Bonito [misspelled?] in 2008 regarding global public health.

As the collective action we take worldwide for improving health and health equity, aiming to bring the best available, cost effective and feasible interventions to all populations and selected high-risk groups. Essential collective actions for health improvement, include disease prevention, health promotion, health protection, and provision of healthcare.

Now there are many definitions as Peter said that we could consider and I'm not saying that these are sacrosanct,

but perhaps they'll get us going for today. And I think with the joint recognition that global public health has unique and critically important roles in creating global health and well being. And ahead of us are the questions about how to really accomplish what the future requires.

As I look across the room, I think that there are several unifying principals that to my perception at least undergird our joint perspectives, goals, and work.

First, a commitment; a commitment to optimizing the health of populations through population based approaches for the public good. Designed on a platform; a platform of knowledge, evidence and experience and focused on human needs and goals and accomplishing the greatest good for all.

This rests on a foundation that health for all is a human right and that health of the most vulnerable is key to the well being of society. And it focuses on a necessity ahead of us, of taking what my colleague Jack Rowe calls a bifocal perspective, aligning the short-term with the long-term directions we're heading in.

As we learn from accomplishments to date, recognize and solve the obstacles that confront us and ensure that we are supporting the directions that will optimize our long-term future, particularly confronted by the problems on our plate which are complex, and where long-term solutions will have much greater benefit for all then after the fact interventions.

So, we're here because I think there is mounting recognition as you've already heard this morning of a need for reframed vision and leadership to accomplish health for the world's populations. In the face of recognition of the need for new strategies, for longstanding problems, and new health challenges superimposed on these that will both require new strategies and new commitment. Perhaps with the breath of issues in mind the comprised global health, we may utilize new evidence and capabilities to discover new solutions and implement them in more effective ways that help us solve long standing issues.

I think it's our contention that public health has a responsibility to assess how and not whether we can provide in ever more impactful ways, the ways forward to achieving global health. The key is of course are our tools in public health, population science, a foundation of social justice, and commitment to the public good; appreciation of how the world's needs are changing and the frames of setting goals for improving the health of millions and billions, the world's population through multidisciplinary collaborative, and sustainable interventions.

So, today we will be thinking about where are the needs, the obstacles and the opportunities for innovative solutions with a bifocal approach. And this meeting is

designed to lay out the questions that we've arrived at to this point, and for us to work on these together.

To move our field into a stronger ability to lead in accomplishing global health for all populations, the planners at the March meeting and the organizing committee proposed that we reframe our work today and tomorrow and potentially in an ongoing way together after that, around some big questions. And I have to thank Peter Piot and Julio Frenk, who worked with Richard and myself, to try and really express the propositional questions that came out of our planning meeting, and I hope that the rest of you who were there agree that we did this with fidelity.

The overall questions that we arrived at that we need to confront is how does the changing landscape of global public health require new perspective, new thinking, and new forms of action. The planning meeting suggested that the way forward toward answering this overall question is to first figure out together the innovative answers to four propositional questions and then use these answers in an integrated way as a basis for creating a real frame shift of understanding, and a basis for visionary action going forward.

So, the first of the four propositional questions that we hope will add up to our collective vision for this one is this, how are health and prevention needs changing globally, and considering whether understanding this leads us to a frame

shift in how to approach improving global health for the future. Key issues, of course, are the longstanding health challenges which are achieving some breakthroughs, but where for many new levels of solutions are needed. The issues of safe and healthy food and water, or preventing death in childbirth for women around the world. And ensuring the health of women and children, reproductive health, and preventing violence against women, and prevention and treatment of Malaria, HIV/AIDS, and controlling resistant TB.

These highly interrelated issues are of course key to the well being of all of us, are essential to accomplish and particularly threaten the most vulnerable. At the same time we all know that the world's changing with new challenges to all of our health and wellbeing, and on both near and far the horizons, from the huge surge in preventable chronic conditions to the impacts of climate change, the aging of the population and health of cities. And these challenges are not mutually exclusive, but layered on top of the ones we've been tackling for decades which persist and must be solved.

So, what challenges and opportunities to these trends present to public health leadership and how can understanding the changes ahead of us, in the context of current needs frame a transformational processing goals by which global public health will lead towards global health in 2030 to 2050. That vision we think will help us lay the basis starting today.

So, we have a background paper on how global health is changing. You just heard some of your own perspectives which match it exactly from Alastair. I'll show you very briefly a little bit of the data, just to get our juices flowing. Some of it are demographic changes, I'm picking on just a few examples, but certainly the success of public health and medicine in the last century, is that the-percent – is that our – populations are aging, because we're living longer. What does that mean for global public health and global health. Here you see an example of how the-percent of the people 65 or older increasing by region and in fact, even in the regions where that is not obviously.

The absolute numbers of older people are increasing dramatically. You can see that if you watch this world's population period change from 1960 in front of your eyes to 2030 and 2050, as the population of the world rectangularizes [misspelled?].

And deaths, even the easiest thing to measure is changing. The causes of death. Now here, you see a graph provided by Sandra Galeah [misspelled?], as well as the other data I'm showing you. The distribution of causes of mortality here for the Americas from 1960 in the bottom bar, to 2030 projections to the top. And the different colors signify different causes of death. Going from left to right, infectious diseases, HIV/AIDS in green, respiratory infections;

cancers in purple on the left. Cardiovascular disease in blue on the middle, injuries in gold, and other non-communicable diseases in a kind of solid purple line on the right.

I'm orienting to you, because I want to point out first of all that the patterns are reasonable stable in the Americas over time, since 1960. And similarly reasonably stable in Europe. But dramatically shifting, of course, all across the world.

Western Pacific, Eastern Mediterranean, Southeast Asia: Africa. Dramatically shifting patterns of disease and of course, with an in increasing prominence of chronic non-communicable diseases as the cause of death, worldwide.

Other issues, of course, you can look at specific diseases. Here you see a map of the projected relative mortality rate ratios for cardiovascular disease by WHO regions in 2030. And the darkness of the blue signifies the highest rates. And you can see that a significant proportion of the world is experiencing significant mortality from cardiovascular disease, and this is worldwide.

Similarly for injuries, rates vary across the world with the greatest rates of injuries in Africa and Southeast Asia, but also across Europe, Russia and even China.

We heard from Judith Rodin about tobacco use. I'm going to skip over that and focus on the export of non-communicable diseases through things signified perhaps by the

diet we eat at McDonald's. McDonald's 2010, you can see its distribution worldwide. What does that tell us as a marker, patterns of export of the diets that are increasingly underlying obesity.

And finally again, as just an example of the changes in the world, in 2000, we were moving toward two-thirds of the world living in cities. And here you see the areas in dark blue, where more than 50-percent of the population is living in urban areas in 2000.

So we have many major macro public health trends that we expense to accelerate over coming decades to the middle of the century. Environmental changes which I haven't really touched on; emerging infectious diseases, worsening disparities, chronic diseases, and the public health challenges of living longer, as well as the opportunities.

And we have, in a way, an evolving public health pyramid, maybe we should call it a pyramid anymore. But still using the same design we've lived with. So many dimensions to what constitutes the health of populations. And we recognize that in a world of people's health driven heavily by environment, physical environment and build environment, and humanly driven contextual factors; health system designs, and multi-level solutions, structural solutions have to be part of the solution.

So-called non-communicable diseases, of course, are spreading like wild fire globally. Fueled by something that's not non-communicable. The contagion of risk factors, like smoking and processed food, and decreased physical activity. And some of the challenge, of course, is that multiplicity of health problems are increased and threats are increasingly the norm, propelling the recognition among all of us that we need new, non-siloed solutions in terms of health systems and structural approaches.

There are also, of course, major shifts to global interdependencies that are affecting health. And increasing evidence and recognition that the historic classifications of global sales and global north, may mask significant heterogeneity and health concerns, as well as areas where health needs are converging and non diverging.

So under this first propositional question, we need to think about how these facts influence our overarching approach to tackling global health challenges. How do we systematically and most effectively understand the answers to these questions, do we need new frames? This background leads us to our second propositional question, which is how can innovations in science and technology, shape and change the way we see, think, and act. Can new technologies for water handling offer solutions for impeding water scarcity if they're built into our planning in both urban and rural areas.

Consist in science, offer cognitive strategies for handling complexity and finding the most effective levers to improving health. And from this perspective, what are the key foci for scientific research for the future that will help us really appreciate the complexity of factors shifting our health patterns?

Our third and fourth propositional questions, in summary, are how do changing needs indicate needs for changing health systems and global governance. Given that the majority of health needs are caused or affected by factors outside the healthcare system, what are the opportunities and responsibilities for public health to create a system to protect health that's inclusive of many domains that have to be actors in health protection.

How can health systems and global governance be designed to take responsibility for health needs of populations, to see health equity is both a responsibility and obtainable goal. And tackle the integrated health needs of populations, not fractured by disease or interest groups. In particular, how do we create a unifying perspective on population health needs that does not assume a zero sum game, where an investment in one problem requires a divesting in some other area. Can we find new more innovative and effective ways to work on interdependent and coexisting problems.

How do we design and foster a new type of global governance and new types of health systems that can better protect the health and well being of all global citizens. Which actors, agencies, and constituencies need a more effective voice in shaping public health strategies globally. What are the education and training innovations needed to support effective health systems. As I look around at who's in the room, all of you are needed to shape the answers to these questions.

So overall, if over the next 32 hours we can tackle these four questions with highly innovative and collaborative thinking. I think we have a chance to bring the answers to each question together into a greater whole to answer our overall question, how the changing landscape of global public health; requires new perspectives, new thinking, and new forms of action, and how public health must lead to contribute to our global health needs of the coming decades. Now, how on earth to do this, how are we going to engineer this vision together?

I am going to conclude by suggesting the tools of innovative thinking that we might be able to employ together. How do we get our minds in the most innovative frames to engineer change? Well one set of evidence indicates, I think what we already know, that formulating problems and solving problems are inherently interdependent activities. And that defining the problem includes questioning of how the problem is

framed and whether it can be restated to allow a wider range of solutions.

So I'd like to conclude, by suggesting for our collaborative experiment today and tomorrow, thinking on issues that we all agree are of great import, some tools for innovation generation and they come from my colleague Roberta Ness, at the University of Texas School of Public Health, who couldn't be here today, but sent these slides instead.

She wanted to remind us that when you're in the business of collaborative innovation generation in only 32-hour period, you need to start by using tools that involve thinking outside the frame, because frames define human communication and thus thinking, and express the expectations we walk in with, but we might want to keep. This require accurate observation. Do you know how to draw your cell phone if you closed your eyes? It requires thinking beyond what we've been told, like the example of the Nobel prize that was given to Marshall and Warren for the discovery of H. pylori, the cause of ulcers.

Innovation requires making sure that the framing of the past doesn't frame the future, if it's no longer going to serve us. And that we're not interpreting new information with old context. It also requires asking ourselves and challenging each other, as to the right metaphors that we're using. Should we be talking about a war on cancer or should we be shifting

our frames to think about life course approaches to prevention. Should we be focusing on absence, as well as presence. It's easier for us to think about the presence of disease, the absence of disease sounds like a negative and yet it's a goal.

And we need to think about conceptual biases. Is it my disease or your disease we're going to solve today? Do we have to have that zero sum game? Will that serve people? Do we have to assume that the aging of a population and old people being around is going to harm our children. Could we find other ways out that could be good for everybody?

And we can challenge each other by posing the opposites. Like cops are made of ice, or fat people get paid more, just to break our assumptions about what the truth is. And brainstorming; a good brainstorm generates 100 ideas per hour. It's one of the things we want to engage in today. It works, studies have shown that if you use these tools you get two to three time the increases in originality and significant improvements in problem solving, as well as attitude and work performance.

So I'll conclude by saying, with thanks to everybody who worked so hard to put these propositional questions together, that the substance of the questions were designed in the process today and tomorrow is designed to foster our ability to work together, as a basis for acting differently which will require seeing differently, perhaps with a bifocal

vision to understanding what's in the future and making sure that the present is aligned with where we need to go, and today thinking differently.

Thank you so much. [Applause]

RICHARD PARKER: Okay. so we're going to move into the next phase of this morning's work with a series of presentation of the background papers. I'm going to be very brief in making introductions, as you should have already discovered by now in the book that has been prepared for the meeting there. Our longer biographies of all of the speakers, so I'm going to ask the forgiveness of each speaker in the interest of time and simply do a brief introduction, rather than the longer one, which you can find in the book.

I also should mention and thank the Kaiser Family Foundation which has generously offered to film these sessions, so that they can be webcast in the future and we're very much appreciative for Kaiser's support on this.

The first of the presentations, on changing health and prevention needs, the background paper was prepared by Dr. Carlos Caceres and Dr. Walter Mendoza. And Carlos will present the paper followed by discussant responses from Dr. Alex Ezeh and Dr. Sania Nishtar. Yes, I believe that will do your slides.

CARLOS CACERES: Good morning, everybody. I would like to thank the organizers for the invitation. It's a honor for

me to be here this morning and I would like to know that my colleague, my coauthor, Dr. Walter Mendoza [misspelled?] are from UNFPA Peru.

So in essence, you got our papers in the booklet, so essentially, we were supposed to highlight the key issues in this presentation. This is an emerging field, patterns of health and disease under [inaudible] in an international context framed by globalization with global and economic growth and political processes are essential elements.

So the goal for me here is to outline some of the key dimensions of change in demographic and epidemiologic patterns and the under-drivers. And also assess whether our scientific paradigm really allows us to ask and to respond to the key questions and be framework conscious about equity, broader development and human rights.

So, assessments based on national and regional figures in equal societies, essentially equal societies are insufficient. So we really to need to make sure the magnitude of change over time, direction and characteristics of change to end on the dominance. Also difference within and between countries, factors potentially related to those changes.

Now, when I look at summary tables and figures, it really doesn't provide the right information and we can't do as much as we should do. So here, we would like to point out a

few key indicators, just to start a discussion to continue more comprehensively.

Well, two key issues discussing health and prevention needs were portrayed actually in foreign policy in October and November, organization and aging. So we see that many other actors are recognizing these topics, as really much beyond the field of health, of global health.

I think Linda also showed us a bit of this already, age life expectancy at age 60 in measured reasons of the world increases in all regions. Some regions start – are starting form a higher level, but obviously it's happening everywhere. And if we look at mortality I have I think 12 of these graphs, and they are all different. So one key message is that mortality curves are different across the world, so you'll see the previous one was more developed regions, Sub-Saharan and Africa. You see that the younger ages are the blue and the older ages have the orange, but we see that in essence we are getting the same kind of trend across, Northern Africa, Asia, China and India specifically, Europe, the Caribbean, Central America, and North America, Oceanea [misspelled?].

In essence what we see is it's a diverse global mortality picture, and child mortality will fall everywhere, but will remain high for at least two more decades in Sub Sahara and Africa and in India. However, there is a general trend, there's an opportunity for what morgraphers call the

morgraphic dividend. No, so an increasing economically active population, but if it's going to work, it implies active public policy education investment. Then we also need to plan to respond to changing morbidity and mortality, and reach what they also call morbidity compression, which is essentially not only having people live longer, but getting ill later in their lives. So having more years of good quality life. This is about morbidity, diabetes is an emerging disease resulting from changing like habits.

For example here, migration new patterns of leaving food intake, rising cardiovascular disease, diabetes, obesity, and cancer are part of what we're seeing. This is explained in part by economic and cultural globalization and trend liberalization. Diabetes actually is in adults is going to increase from 6.4-percent in 2010 to 7.7 in 2030. And the increase is going to be 69-percent in developing countries, as opposed to only 20-percent in developed countries.

Gender and sexuality, well as much as mortality is decreasing, fertility and maternal mortality are also decreasing. So this is for TDT [misspelled?] rate trends. This implies changing health needs of women who will perhaps require relatively less MCH and sexual reproductive healthcare and more care for age related concerns. Also emerging mail needs, including sexual health, prostate cancer, erectile dysfunction, and other mental health, for example. There are

also increasingly recognized changes in this whole show [misspelled?] organization of sexuality. For the first time in history we're taking seriously issues around changes in patterns of sexual partnering, recognizing sexual minorities, general diversity, new families, new patterns of adoption, but changes in [inaudible]. So this all should be reflected in our demographic data, because it has to be a matter of public policy as well.

And we should stop assuming that we're planning for heterosexual populations. We need to recognize that diversity to matter of rights. Then this is migration and new dimensions of change. Clearly we are – in 2020 in developing countries, the sizes of urban populations will actually outgrowth the sizes of rural populations. It has happened in developed companies a long time ago already. So this implies changing – many changes in what services should go for. Then there's continuing flows from South to North, usually worse of are those who undertake, who travel and they will be willing to undertake low quality jobs, but also many health professionals in the South who migrate. By 2050, 74-percent of a global urban population in fact will live in Africa and Asia, and quite differently from what we see now.

Then changes – new dimensions of change are about new movements around health and also the increasing role of communication technology, which creates new visual communities.

People talk to each other and relate to each other in ways they had never done before, and that implies new ways of thinking, new subjectivities, new communities. This is about social drivers of health and disease, well this is the other part that we usually don't talk enough about and we need to start talking about these if you are – if we're seriously talking about changing health and prevention needs. And also they are drivers of health and disease, not just of disease. Drivers are [inaudible] and diverse, the burden of the disease highly variable.

Major, if not the most important driver of health this disparities is different in access to essential goods and general living conditions; education, rights. So in line of the conclusions of the [inaudible] committee on special determinants on health, avoidable health iniquities arise, because of the conditions in which people live, work, and age, and the systems put in place to deal with illness. In turn, shaped by political, social, economic forces.

Unfortunately, this was an extremely valuable report and we haven't done really enough about these so far. And so, we see this picture showing households lacking basic services by size of ordinary and geographic region. And we see that for sub Saharan Africa, the columns are very, very, very high for all sizes of living.

Well, this is Haiti, October 2010, to remind us that in spite of how we talk about technology and progress we can still be back 100 or 200 years ago. And this is about access, this is about inequity.

Well, these are a few graphs showing just the human development index, which is as you know related to income, to education and to life expectancy. Here we see income related to on the left to the human development index, and on the right to life expectancy.

In general we see these trends, perhaps the problem is that looking at these as global regions we don't see enough information or information that is used for enough. So, probably we have to keep looking into more specific detailed descriptions. Okay, this is actually location and income trends, the same thing. In Norwegians, we are seeing a positive relationship between income and in this case in location. This is actually the midline [misspelled?] development goals and progress. We see population living on less than one, 24, $25 a day. And unfortunately in many regions, in red, there are setbacks. The greens are progress. Also, a difficult situation with regard to children under five who are underweight.

So, for example here, this is mortality in children under five, and we also see that we're going backwards in many places. And also immunization against measles to the right

side. In this case we are seeing more green, we are seeing more progress. But still if we look at specific countries in the world, you can see that progress is not uniform and we still have a long way to go. This is actually very important for maternal mortality, which is one of the most difficult millennium development related issues and goals. And here we see that there is some progress in many places with regard to births attended by skilled health personnel. This is HIV, on the right the proportion of progress, I mean countries showing progress in HIV infection reduction. And unfortunately we see that there's no green or yellow everywhere. We are still seeing setbacks. And to the right we see population in need for ARVs, so we see that in many places coverage is still quite limited, in spite of all the progress we've made with HIV, we still have to go.

Finally, these two last slides, the second part and this is kind of a provocative part and I hope we will continue to discuss this in the groups. We have to reassess our analytic frameworks and what we call evidence. We have to go back to the basics. What do we define as costs? What is change? What is an outcome of interest, by and for whom our question is asked? Epidemi[misspelled?] research can only demonstrate, as epidemiologists here know. The associations it ascertains, so it depends on our hypothesis and what hypothesis we test.

In many cases where we're looking at problems for which we have very proximal [misspelled?] even molecular biology level determinants, but also structural level coastal factors. They're problems in commence your ability and we can't use single moles to study everything. So to different levels of specificity, so in many cases epidemiology unfortunately tends to focus on proximal issues, which does not solve the problem and leaves social determinants aside. So we really need in many cases to study at different levels and to involve more disciplinary teams to study different levels of specificity.

There's a rich tradition in the world of sociology epidemiology, it's a very rich field with bright minds, but it hasn't really been mainstreamed. And we really need to get some of those lessons, some of that thinking back into mainstream epidemiology.

Finally, epidemiology really or sufficiently focus on health in its positive aspects, such as well being, quality of life, happiness, also the issue about standards to study causality and evaluate efficacy of public health interventions. We still have the [inaudible] the experimental paradigm and run the mice control trials. They limit, because of cost, because of many other things in observation to short-term periods. So as I've seen the effects of more distal social level, interventions is very difficult and they remain in many case an adverse.

So, the more fundamental question about science as social practice is also necessary to ask. Knowledge generated does not necessarily reflect the best thinking. Unfortunately, in many cases it reflects the thinking that caused the conditions to be produced, because of institutional and funding and issues.

So perhaps just to end this last statement. A critical global public health must strive for more demographic participation of scientific communities in debates about causality and needs within the human rights framework. Thank you very much. [Applause].

RICHARD PARKER: Thank you, Carlos. And I'd like to ask Dr. Alex Ezeh from the Africa Population and Health Research Center in Kenya to be our first discussant.

ALEX EZEH: Thank you, Richard. It's really a great pleasure to be here and to have the opportunity to comment on Cazeras Mendez [misspelled?] paper. As you're listening to it this morning, I believe that the authors did an excellent job of summarizing the current demographic and epilogical processes, that drive changing global public health.

An area that didn't seem to receive much attention in the paper is the issue of prevention needs and I will forecast my few minutes looking at why this is important. This is not a critique of the paper, I think it's a reflection of the current discuss we have in the feud of global public health, where a

lot of what we discuss really focus on the bottom of disease, often as a measure of health. Indeed, most framework of health is around disease and disability and I think we manage to find ways to move beyond that. If you get into prevention and think about the prevention needs in global public health, I believe that prevention is really what different shades of public health from clinical medicine.

Currently about 80-percent of HIV/AIDS expenditure is on treatment, especially there are a lot of antivirals. Ignoring the economics and politics of global health, global health funding for a moment, we should ask the question, why are prevention needs important in global public health? There might be many reasons we could give, but I will focus on three, at least the ones that stand out to me. First, is the fact the treatment is several times more expensive and hopelessly unaffordable to many people, whether you are thinking about high income countries, or medium income countries, or low income settings. You can look at this in so many different ways.

One is the issue of limited human resource capacity and consequently low effective coverage of health interventions and treatment paradigms. If you take the place of – for some countries, especially in Sub Sahara and Africa, where we understand the region veers maybe 25-percent of global disease bottom, but has 3-percent of the health workforce. It doesn't

matter how you stretch it, you cannot achieve effective treatment coverage for any of the diseases. So the issues of prevention becomes very critical and important. We also do know that treatment can be very costly. And more importantly the indirect cost of illness, why don't you look at issues of loss productivity, reduced social participation, and other aspects of illness.

The second reason why prevention needs is important for global public health is really around the issue of changing disease patterns and demographic shapes, which make prevention mudders [misspelled?] very imperative when we think about health and well being. The first is the issue of change in life styles. And I think we have seen a lot or had a lot in the course of this morning around that and the fact that for non-communicable diseases this is becoming a major challenge.

At the African Population and Health Research Center we run this longitudinal surveillance system in the slums of Nairobi. And from there we do collect data on course of dates. And from there you can look at some of the key determined drivers of health. We did not open a formal setting. And when you look at things like HIV/AIDS it's accounting for 50-percent of the years of life lost.

And issues related to violence and accidents counted for almost 20-percent. You realize that treatment strategies often would not be able to address the number of these things

and prevention becomes a key strategy or a key aspect of understanding and address global health challenges.

We can also look at the issue– that point is the fact that prevention programs, I believe reduce inequities in health outcomes. Most inequities actually exacerbated by the fact that different people have differential access to treatment.

If you look at some of the access issues, with respect to a number of items here, between the slums in red and Nairobi as a whole. You realize a lot of the people, even within an urban setting, where we believe access is much more widespread, you have huge differentials in access.

So if we are able to address a lot of the prevention needs we could reduce a lot of these disparities in health outcomes and health [inaudible]. Despite the general acceptance to the need to address the social determinance of health, most discounts and investments on prevention programs are technology driven with vaccine development accounting for the largest part.

As important as these initiatives are, we know that if we find a vaccine for malaria or HIV today, many Africans will still die from these diseases. Just as hundreds of thousands of children still die each from the rear [misspelled?] and women from child birth, despite the ability of low cost and effective technology solutions for these conditions.

As we struggle to identify current, more efficient and cost effective ways to translate what is known and proven to work to benefit more people globally, I believe we must not forget the issue of disease prevention. The field of global health needs leaders to address new prevention theories models, in the practice of global public health. And I really believe this is an area we need to give our attention as we discuss over the next two days on changing global public landscape. The issue of prevention is something that we may need to think more about. Thank you. [Applause].

RICHARD PARKER: Thank you, Alex. And now I'd like to ask Sania Nishtar to join us as the second discussant. Thank you. Thank you, Sania.

SANIA NISHTAR: Good morning, ladies and gentlemen. Allow me this opportunity to thank the organizers for asking me to speak. It's a privilege in deed. This paper by Carlos and Mendoza alludes to two aspects of changing health and prevention needs. One is centered on the empirics of causality while the other focuses on the strategies for action.

And I'd like to focus my attention on the comments that I make on the later, whilst I do that I'd like to touch up on what I'd like to refer to as the triple imperative of the changing landscape of global public health. The first aspect relates to a transition that appears to be currently underway from a focus exclusively on diseases to our systems.

The second relates to a burgeoning understanding of the role in health of our policies and the third relates to the possible emergence of a new public health order that takes cognizance of the increasing burden of non-communicable diseases.

With reference to the transition from diseases to our systems, it is always useful to look to back into history and to see how changes in the global political economy have shaped norms and institutional arrangements and standards within the health sector. And if you look back into time and in the last three decades in particular you will appreciate that they have been a concerted effort on time-bound, outcome-based, disease specific targets and this movement has accentuated appreciably in the wake of the AIDS movement back in the 80s.

And subsequently it was intensified with the pronouncement of the Madelium Declaration [misspelled?] and the stipulation of the millennium development goals. We have seen in the last two decades a burgeoning of global health initiatives and a focus on public/private partnerships and a bringing together of agencies that have the mandate to deliver public good and on the other hand agencies that can facilitate this goal.

And in addition, particularly over the last decade and a half, an unprecedented increase in health official development assistance and engagement of new actors,

particularly private foundations in financing of health in the developing countries. But after all this attention to disease focused targets, there is now a realization that without attention to the systemic constrains that stand in the way of achieving these disease specific targets, quantum leaps in improvements in the health of populations in the poor countries will not be possible. They're there for now appears to be a movement underway and this movement is characterized by transformation of changes in many agencies around the world.

We see for instance and as was alluded to early in the morning that major global health initiatives such as, GAVI and the Global Fund have now new health systems strengthening windows and conditionality's stipulated. The new global health initiatives which have emerged in the last 10 years have explicitly focused on health metrics and workforce in the domains of health systems.

The aid effectiveness movement and the stipulation of the barest principals and the Acra [misspelled?] agenda. And the norms coined by initiatives such as the International Health Partnership, explicitly focus on country plans, system strengthening, country leadership, and enhancing the stewardship capacity within the health sector within the countries themselves.

WHO has reselected the approach to primary healthcare in its report of 2008. And next month, we will again hopefully

see that in the World Health Report which is focused on health financing this year.

I'm sure many of you are aware that there have been very high level declarations and statements in support of health systems and one of them, the Obama Code Declaration has cascaded into the planning of a meeting in Monto [misspelled?] next month which we hope will be a water shed in framing and bringing clarity to health systems empirics.

Moreover, the focus on MMCH [misspelled?], as part of the GH Agenda and as part of the agenda setting by lateral agencies is also evidence of the implicit importance that health systems are getting in shaping norms as we moved ahead in the years.

But a critical question emerges within this scenario. With the current focus on health systems in the traditional domains, is it possible for us to achieve the systemic constraints that stand in the way of achieving health outcomes in the poor developing countries?

And this brings me to the second point that I want to make about the role of health in all policies. I'm sure you're all aware that health outcomes are not only influenced by the inputs and the outputs of a traditional healthcare and public health system, but that they're also influenced by a number of social determinants, by the interplay of several sectors within the inter-sector scope of health by health saking [misspelled?]

behaviors at an individual level. And that the effectiveness of overall governance in the developing countries has a major role to play in all of these areas.

If the poor developing countries will not have the capacity to generate growth and accrue benefits of that growth equitably to populations, if they will not have the capacity to mobilize indigenous resources sustainably, if they will not be committed to debt limitation and fiscal responsibility and in calculating responsibility and public finance management, and limiting the current leakages and pilferages from the system that are quite pervasive, and bring efficiency and effectiveness in civil service management and enhanced technical capacity within the ranks, significant strides unfortunately will not be possible.

And I think this point has been made very eloquently by the Adelaide statement on health in our policies which draws attention, not only to the broader systems of governance in terms of their impact on the health sector, but also to arrange of other sectors within the domain of the international arena and domestic public policy which have a huge role to play in shaping health systems norms and in impacting the outcomes that ultimately translate in achieving better health outcomes at an individual and community level.

The third point that I'd like to focus our attentions on relates to the possible emergence of a new public health

order. I'm sure you'll all agree with me that non-communicable diseases and mental health and injuries have long been termed as the neglected epidemic. Eighty-percent of all the estimated debt, I beg your pardon, 60-percent of all the estimated debts and 80-percent of them in the developing countries can be attributable to non-communicable diseases. They have massive economic costs, which have been recognized recently by the World Economic Forum in the Global Risk Report

And since the 1960s, we've seen repeated calls to action to step up efforts to mainstream the diseases during the course of normal public health planning, and these calls have extenuated over the last five years appreciably. But we see a huge paradox, because as opposed to these diseases which inherently warrant a multi-stake holder response with partnerships as its key feature. We see that when you browse through the list of 90-odd global health initiatives that are out there not even a single of them is dedicated to non-communicable diseases.

And there's a huge paradox evidenced in this patent. So how are we positioned as we move towards the 2011 September meeting of the UN General Assembly?

Now, as opposed to the lack of a concerted global response to non-communicable diseases, it is a bit heartening to notice that there has been a burgeoning of several

initiatives over the last several years, focused on non-communicable diseases, prevention, and control.

There have been high level commitments by the heads of Caracomb [misspelled?] and the commonwealth. They've been declarations that important for us, such as the UN this May, and at the Equisock [misspelled?] earlier this year. A number of nominative frameworks have cascaded into implementation over the last 10 years. There are funding instruments of bilateral and multilateral development agencies. There is now an explicit funding agency to support research work related to non-communicable diseases.

There is the pioneering work of the international NGOs Apex professional associations, and private sector Apex entities. And of course, there is a growing realization within a certain constituency that the long-term chronic care systems that have been established in many countries of Africa, as a result of the AIDS movement could actually be a steppingstone to institutionalize preventive and secondary preventive related care within the realm of non-communicable diseases, prevention and control, should a global response and movement get underway during the next one year?

We, of course, have some coordinating platforms or the initial frameworks thereof, within the broader rubric of the World Health Organization in the form of NCD Net, and the World Economic Forums Global Agenda Council. But of course, that

concerted global response which many other comparable public health issues have received is certainly lacking.

So, I would like to end by framing two questions. The first, of course, is within the rubric of non-communicable diseases. We know that we are currently at a time where fiscal constraints are grinding. We're all aware of the fact that the appetite is very limited for a new global initiative and that funding constraints would be a major impediment. But within the context of that reality, would it be possible to make a case for a super organizational structure that is charged with an implicit coordinating arrangement, and which is mandated with the task of exploiting synergies, pulling technical resources and coordinating policy.

Would it be possible, given the heavy interplay of the role of the private sector in preventing these diseases. Would it be possible to use this super organization structure, as a platform to interface global multi-lateral institutions, with Apex private sector entities. And would it be possible that such a structure could bridge the existing divide in conventional multilateralism, and actually be a steps towards creating a new framework for global governance and health. I leave you with that first question.

And secondly, this reflects a little bit with the earlier comments I made, do institutions with a global mandate have the capacity and the voice, and the leverage, and the

independence, and the funding. We're here at an academic institution which does stellar work and there are many others that do likewise, but then out there, there are global health institutions mandated with the task of formulating policy and cascading norms and standards, which have the physical presence in 190 countries.

And we are well aware that such multilateral global institutions with a global health mandate have severe and grinding fiscal constraints, many conditionalities stipulated that do not have the [inaudible] for engaging a wide range of actors, they do not have the mandate to engage the intersectoral scope of work and would it be possible to overcome those constraints, and revamp and reconstitute those systems of global health governance is the second question that I'd like to leave you with.

Dean Fried talked about reengineering for change and I hope that these two questions will be a small contribution in lending impotence to a dialogue around that during the course of these deliberations. Thank you very much. [Applause]

RICHARD PARKER: Thank you, Sania. We're going to ask you to hold questions and comments to move through the presentations as quickly as we can. We'll have one more presentation and discussants, before taking a great, then the break, the last two papers will be presented, and then we'll really have a longer time for open discussions. So I'd like to

move on now to the next presentation on innovations in science and technology. Peter Piot will present the background paper and Hassan Mshinda and Catterina Ferreccio will be our discussants. Peter, thank you.

PETER PIOT: Thank you, Richard. And again good morning. First, I should disclose that I'm absolutely not a techie, when Richard asked me to talk about technology and innovation I kind of resisted. But on the other hand, I'm convinced that one of the main features of our time is the explosive development of innovative, scientific, technological, business products and processes and for this paper that's what I call innovation and technology.

First, in the paper that I hope you have looked at I tried to see to take a look into the future also what's in the pipeline. And it is obviously impossible to predict the future, but a lot of innovation and technology products are already either on the market or verged to become on the market. And with the explosion also of certain scientific disciplines we can expect and anticipate a lot of products that are gonna come on the market.

The most significant development probably when it comes to population health and social change has to do with communication and information technologies, which are far more than just an instrument for communication. They've been a driver of social change in many, many aspects for rapid

communication to sexual behavior and anything in between, marketing and some. Biotechnology is giving us new vaccines for example, new products, diagnostics, what have you. Miniaturization and nanotechnology, but particularly miniaturization can really become drivers for dramatic changes, particularly in medical practice. Think of very small, for example, ultrasound instruments and so on, which would be tremendously relevant for reducing maternal mortality and improving pregnancy outcomes in some.

And nanotechnology, we're really at the beginning of a revolution there, and that goes not only from food and also to massive applications for example for safe water. Food signs we rarely discuss about it in public health circles, but it's also in an incredible transition in terms of possibilities of making food safer, cheaper or unhealthier. The choices are there. And we need to link up with agriculture, the green revolution, and what we're trying to do in terms of public health.

And then energy and material sciences, just to flag that, we are of course discussing a lot about limitations in fossil fuels, but also we could put water scarcity and quality under this rubric.

One issue that is very often striking is that in public health we are kind of schizophrenic in our relationship with technology. It's been a very ambivalent relationship. On the one hand the search for the magic bullet, which when I was

Executive Director of [inaudible] it was every other week I would get an email or a letter, Dr. Piot, if only would do this and that goes then for the fashion of the day from male circumcision to some new device and some. So the search for the magic bullet based on technology. And on the other hand, a serious technophobia that we are also are having in public health.

And certainly in the tradition of global public health and in tropical medicine and international health, often the paradigm was okay, third type, third rate technology for third world countries. And that has been completely really reversed by what we've seen in terms of communication technology.

Just this is from a website, what I found about some data about Tanzania. You go to a typical village and with very still low coverage in terms of electricity, often coming from generators which are very inefficient on a large scale, solar panels, which are there, very uncommon, and often not functioning. But when you go into the village you see every bar has a big television screen, far bigger than I will ever have. People are watching the football matches, soccer matches in England particularly. The British competition is very followed.

And mobile phone coverage even in a country like Tanzania, one of the poorest in the world and we'll hear from Hassan later on is very high. Even with 3G mobile coverage in

large urban areas I think sometimes better than when you walk around in Manhattan.

So this is one example and when you look at the penetration of mobile phones in the world we are in the close to four billion, so out of a population of six billion. Meaning also that many poor people have a mobile phone, and some have two, and often have the latest version. And you see here the absolute explosion this, I shouldn't exaggerate, also there are still countries with fairly low coverage, but it is really been a dramatic change in terms of how we organize society and for social changes, as I said.

But when we talk about innovation we should also think of processes and it's not only about products, technology that we can hold in our hands. It's also a major developments that are in pipeline in terms of cognitive sciences, which will become extremely important also when we think of mental health, but also aging population, understanding what's going on in terms of learning collectively. Management sciences we heard about importance of health systems and here we can learn a lot from management sciences. Also, in public health we've been very schizophrenic, again no consumer business that it right in its mind would ever start launching a new product without some marketing research.

What do we do in public health? We bring together some experts, policy makers, and then in the best case if you're

talking representatives of people living with this or that and then we issue the global guidelines and then we try to implement it, and then we are surprised it doesn't work. So, we should also make sure that not only does marketing research is being done, but also the constant feedback from what people think to adapt our programs.

System sciences, Linda mentioned it, but also I said there's a lot of innovation in terms of how communities are organizing themselves; how they cope with things, how they take things in their own hands, and then innovation in financing models for examples. GAVI has been quite innovative there with advanced market commitments in sum. We'll see what it gives, but these are truly innovative ways of doing business. So it's not only about innovation of delivery, but also about delivery of innovation, but also innovation of delivery, and we need to think of both.

And very interesting examples that are coming up, this is an example from Bangladesh where the Gramine Bank and Danon [misspelled?] have joined forces to deliver healthy foods while also generating income. In this case it's yogurt and dairy products business. So that's also innovation.

And it's something also where in public health we need to get over our aversion to work with companies that are driven by profit. So everything we do will be affected by this innovation and is already being affected, whether we like it or

not. I also am addicted to my Blackberry. And that goes for major opportunities that we have not really well exploited yet. In terms of disease surveillance, not only diseases, but particularly risk factors and vulnerability surveillance, because that's what we should move to I think, also going back to what Carlos said.

Human resources, we are stuck I think in paradigms of human resources for health, paradigms of the past. Of course we need doctors and nurses, and the various categories, but have we really looked at it, what the needs are, what will promote health, and what kind of human resources do we need and how we can make maximum use of present day technology and innovation.

Disease prevention, education, good governance, and community empowerment, we don't have the time to go into it. All will be effected. And we've seen some game changers in recent years. Of course some vaccines that have really reduced or changed the – particularly some childhood diseases, but now we have also a vaccine that can prevent cancer. Showing the absurdity of the term non-communicable diseases, I think we need really some serious branding exercise there. Anything that starts with non, is a non-starter, is a non-issue. So, but we have a vaccines that can prevent cancer. Antiretroviral therapy was clearly a game changer. Without treatment for HIV infection I don't believe we would have had this spectacular

AIDS movement and this impact. It's an example also where the traditional firewall between population health and prevention and individual medicine has been broken down for the benefit of people. Mobile phones, I mention it.

Social media, it's a major platform. When you think of an emerging gay culture, for example in Southeast Asia, it is driven largely by social media and of course also in other places, but I mention Southeast Asia, because the gay culture had been very much underground up to now. Smoking was definitely a game changer and gradually – and it still is. And it's the major cause of deaths in the world today, but then the anti-tobacco movement is equally a game changer, but not yet to the same extent. And diet changes, we saw the map of McDonalds in sum.

Now there's a lot of risk and uncertainty that we have to deal with. And many new technologies the risk is unclear and traditional risk assessment doesn't work for example for nanotechnology. We don't know yet how to measure the impact of products that are based on molecular level, we don't know. I'm not saying it's bad or whatever, it's just that we need to adapt our assessment of this risk. And it's not enough to have a trial that measures efficacy, we need to know population based effectiveness, but also longer-term assessment of the risks.

And there is sometimes enormous commercial pressure to introduce new systems and I'm not only talking about risks of a product, but also risks of systems that are being introduced. The regulatory systems in many low and middle-income countries are very weak. So meaning that many things come on the market that are really not perhaps neither effective and may have risk. Risk reception is very enormously, look at the debates and the attitudes vis-à-vis genetically modified organisms in Western Europe and in this part of the world. It's absolutely different for historic and other reasons. There are ethic and human rights issues we need to take into account.

And then let's not forget that, let's say, easier communication is not always used to promote rational behavior or what have you, or to spread evidence, but also is a major instrument for desimnation of misinformation and anti-science. I think the most spectacular way of that is the anti-vaccine movement, but we've even seen like how this had an impact on present – like present and Becky by surfing the web and being exposed to AIDS denialists.

But the anti-vaccine movement is growing and growing in the world, including now in low and middle income countries and the internet and web communication is really a major instrument, and is undermining child survival issues attempts now in a growing way.

Finally, what about the challenges that we face in public health? The first one, I would say, is not so much about new technologies and innovation, but it's making sure that existing tools that there is equitable access to the largest extent possible, all over the world. We can't constantly jump to the newest fashion and the newest technology and ignore the often very low cost interventions that are there.

Secondly, there is a big issue, not only for technology and innovation, but in general for global health. Who sets the agenda? Who sets the agenda? Is it those who are developing the technologies? Is it business? Is it the agenda in function of health? And all of those have to come together. And when we define innovation beyond technology development, but also innovation of how to do things then it's clear that every single country can learn from other countries. No country is too poor to develop innovative approaches. No countries too rich to learn from others in how to handle health issues.

And the issue of assessing effectiveness of innovation I mentioned before is a big issue, as far as I'm concerned. So access – yeah, I don't have time today. And then a second set of challenges have to do with where are the incentives. Market forces have been the incentives for innovation in individual healthcare and in healthcare provision and for disease

management. They've not been so effective for – in terms of prevention and population based. So that's where public/private partnerships, et cetera, and the Public sector definitely have a major role to play. We can also learn from individual medicine which is moving more and more towards personalized medicine.

In public health, we still have one template and that should be good for everybody. Forgetting that populations are very diverse. And with modern day technologies and information technology and the products and the learning of social science we can be far more refined in our approaches.

And lastly, so much is lost in translation, because we are not engaging with people. My issue about marketing, but also in terms of what we are going to be what people's expectations are.

So in conclusion three thoughts, first of all, very clearly there's a tremendous amount of signs, of innovation, of technology that we can bring to public health and to global health. Secondly, the new global health concept may be better equipped to fully utilize the potential innovation that classic public health, because of the multi-disciplinary nature of the global health.

And thirdly, the key is that we are proactive in setting the agenda for research, setting the agenda for access, assessing effectiveness, technology and innovation and

accutable [misspelled?] access. So, this will be some of the issues that we can discuss, but it has to be discussed as part of the overall objective of improving health for everybody. Thank you. [Applause].

RICHARD PARKER: Thank you, Peter. And so, for the first discussant, I'd like to ask Hassan Mshinda from the Tanzania Commission for Science and Technology to join us.

HASSAN MSHINDA: Thank you very much, and good morning, ladies and gentlemen. Let me start by giving you the information this morning I was listened, because of the jetlag I was watching a TV and I heard something which is very interesting, that the [inaudible], the Prime Minister of UK announced that he's going to put more resources to technology based institution.

This is not something new, with respect from Debbie Camaron [misspelled?] who has facing a big challenge of been changing a big number of public health records. And this is because that innovation is important for human welfare, but it's also very important for economic development and competitiveness. And this is something which we cannot ignore in public health, like what actually Peter has shown to us.

What I'm going to discuss with you this morning is [inaudible] this technology, I don't know if it's on my side. [Inaudible] some of the challenges, some of the challenges

which Peter has outlined which particularly focusing on who is really setting the agenda.

And as you know very well, this is the classical approach of setting agenda in science, where by the scientists are identifying the molecules and these molecules are taking to animal trials and then later on they're actually going to be used in human. But this is a slide from the President of the Global Research Alliance, Professor Masheka [misspelled?] from India.

But that is the linear approach of approaching science, but as we know that we need to change the approach or now the innovation is actually starting to change. It’s not only – it's no longer linear, but it's also moving from the customers or from the user sites to uniformly applied research and also to the basic science.

And one of those platform technologies, some of those platform technologies, particularly which have been outlined relating to information, technology, biotechnology, nanotechnology. There is also each additional knowledge which is existing in most of the developing countries. And we can start to see that in the future trends, some of these technologies will find its way in public health.

This is a classic example of India, which is using now the traditional technology as their way of bringing in back to the modern sciences.

Again, as [inaudible] in India, most of what the challenge is which they're bringing together is not only that these technologies are going to be available, but they're also going to be proposed in a very, very cheap way. And to the level that is, you cannot compare with most of the other countries. And this is what is going to be the future of the technologies which I'm going to hopefully be used in the public health setting. Particularly, if you want to have technologies, which are less costly, but also going to be more and more equitable. This is some of the developments we're actually going to see.

I apologize for those that have seen this slide, but this slide is very important. It's to show to you also in relations to when we're talking about science and technologies. This is the data which are coming from Tanzania, and really demonstrating that in most cases when we do clinical trials we normally interested mainly on efficacy of the products. But as you know very well, that efficacy which are mainly conducted, which is mainly generated from ideal condition is not equally to what is available in a real life situation.

Most of the decision to use these technologies are mainly based on clinical or trials, which is actually equally presenting what is happening in the real life situation, whereby some issues related to coverage, whether you are using diagnostics, compliance for those who are going to provide care

and patients. These are the most important when we talk about public health impact. Effectiveness, unfortunately, the current clinical trials also do not actually include some of these elements.

And also more importantly, even those drug manufacturers are not interested with this downstream issues. But these are important for public health, because as you know, that when you have this low coverage or high coverage and the community effectiveness is becoming very, very low. It's actually presenting what we know in terms of the drug efficacy when we actually do that in a clinical condition, in ideal condition. And this is where the challenge of the health systems comes, and even thus where we need maybe more innovation, particularly in the areas on where how one can strengthen the health systems.

And whether it's actually in these areas whereby management or system thinking will may be able to provide the solutions for public health. What is also more important when you try to put these in terms of the equity, you would find the story is going to be completely different. And this is where they're all of this social entrepreneurs or social investor may come in and trying to find what will be the best solution for the next challenges of public health.

Apart from those issues which have been mentioned by Peter, the other issues which are very important, as he said

clearly, that in Tanzania, communication is actually fastest growing field. The annual growth of communication sector is around 15 to 17-percent.

But we are still facing challenges in terms of how one can mainstream ICT these technologies in the real life situation. If you take example in health, in ICT, you find a number of vertical programs, putting VSAT communication in the same hospitals or in the same health facilities without knowing each other. You have one programs come with VSAT, another one comes with another VSAT, another one comes with VSIT [misspelled?] and then unfortunately none of them have operational cost of buying a bandwidth. And this is actually posing a very important challenges. So what we need to do is to think in terms on how one can mainstream these technologies in the health systems.

In a manner than you have ICT policies in the ministries, and you have also strategies and policy. This is also going to face a challenge in terms on how one is going to do technology assessment, with whether it is the technologies which are not purely medical oriented, like GM was as he mentioned earlier or what is going to– which is unfortunately that responsibility is lying on the environmental list. And these responsibilities are focusing a big challenge in terms on how these technology could actually be used.

Another problem we are facing is the lower understanding of intellectual property issues among the knowledge records. Particularly in the academia you find that a very, very low understanding of the IP issues. And this is becoming very important in our countries, simply because that your scientists, which have been trained have low understanding on these issues and they do it all the time when people are talking about ADA [misspelled?], protecting the intellectual property or exploiting intellectual properties are issues which are existing. And these are some of the gaps which are existing and it's very important to consider in the training of the new knowledge records.

Another aspect is the capacity building on commercialization. When you go to do science in most of our countries, nobody actually teach you on how can you commercialize any of the research product which you are getting. And as you know, that commercialization is one of the most important element if he wants to ensure that science has an impact in terms of the growth. So this aspect is very – is actually missing. The part of the innovation systems whereby you need to work together between private sector, public, and also civil society is very important. It's not only in terms of generating technologies, but also to ensure a proper use of these technology.

What we are seeing is also the invisible college, invisible college is the term which has come across from somebody called Carolyn Wagner [misspelled?], who is talking on science and development and this is actually a network of knowledge records which are hidden. We actually don't see them in the institution, and through interactions we try to build up consensus in coming up with solution. And this is the future of the public health, and the future of the global public health.

With that, thank you very much. [Applause]

RICHARD PARKER: Thank you, Hassan. And one last intervention before we take a break. Catterina Ferreccio, from the Catholic University in Chili will join us.

CATTERINA FERRECCIO: Good morning. Thank you very much for the invitation. This has been a pleasure to be here.

Well, my idea is to present one other point of view to repeat that I really agreed in all his presentation, also in the previous discussions. And also he's got some impediment that I see to incorporate innovation in [inaudible].

So, like a new concept is that innovation technology will unite in developing countries even more as the previous speaker mentioned, India is one of the most important early drivers for innovation. And also China, Brazil. And so, we think in the future, maybe most of the innovation will come from there. These companies are working they have to serve

large populations that are mainly poor populations, so we expect that the innovation that will come from these countries will be more appropriate for our population.

So, that's something that we have to have in mind that it really means that we may be over with a lot of innovation and it may be infrequent innovation, so this will be an issue for public health. The other thing that we are already seeing is that in these countries the problem is how to reach to the people that is still in rural or parted areas, so we are seeing today what they have been calling the scale out, that it means how to get to the people. So they are within relative system to provide the innovation to all the people. And we have to learn from that. They have clinics on wheels and there is a lot of description of things they are doing in India to serve the population. The private sector is doing that.

The other thing is that in these countries they are using a new concept to serve these people, that some economists call this a frugal, that it says to simply, instead of engineer more and more sophisticated products that we see in western countries, like the mobile phones becoming more and more complicated.

Here the movement goes in the other direction, how to simply these phones to make it more and more simple. And that has been called reverse innovation, it's get to the simpler. And that in public health we've seen this today, according with

HPV testing that is being developed in China. Going from the very highly sophisticated proven in the U.S., and in U.S., and in U.S. to very simple that would not need electricity. So this is something that is already occurring. So this we have to keep in mind that its fairly coming.

And the other concept that I wanted to discuss is that innovation can be very disruptive for the public health programs, traditional programs, managers. And I am facing this situation, because I happen to be involved in evaluating new technology. This can be very important, because in our countries, especially the ones that have centralized health system, you have to begin with the person in charge of the program. Is the person doesn't accept innovation that's it, there is no way to go beyond. For the public people the problem is that the private community will receive the innovation and that's what's happening in many countries in Latin America.

So the private sector takes the innovation, but the public one gets stuck. And why is that? What happened in my country and probably many other countries is that the problems are focused to disease. Let's say cervical cancer prevention, that is the example I want to use today. So the person is in charge of the program for the whole life and they are like, it's a baby, the program is a baby. And they forget about the population, how they population is changing, how innovation can

affect and that is what I think is almost impossible that innovation will initiate with the person in charge of the program.

So it has to be from another group in the [inaudible] probably that is in charge of innovation in reviewing innovation, because the person in charge of this program will not initiate a change. Very difficult. Well the other thing, the characteristics of this situational programs is that it's one program that covers the whole country.

There was words in the past, but today it's not necessary. It's not adequate. So, we have to– as Dr. Piot put it, we have to shape the programs to the population. And in a country we have diverse needs. And that is very difficult that will be done by the current program managers in Latin America.

The other thing is that innovation, of course, in relatively short time period and as I said with all this huge economies, emerging economies that are very flexible, innovation will come even faster.

And that requires that people keep reading, and reading and probably in English, that is not the language in Latin America. And also, it requires some technical knowledge to be able to adapt and understand what they are reading. And usually these managers don't have those abilities, so those are important, but really for them also to learn about the

innovation and usually they are taught by the companies that are interested or other interest groups.

So, at the end what happened is that managers felt incompetent to manage the change, and instead of managing the change the fight it. And this is something that we see or they are taken by interest groups, and that's even worse.

So, I wanted to give a very quick example of a cervical cancer control program, and I'm taking the least controversial intervention that is the change in the screening. Because the vaccine is still with a lot of discussion that I don't want to go into. So this is not discussed. So, the process of the changing the cervical cancer prevention is practical at the screening, because in the 70s, they had the hypothesis that HPV could cause cervical cancer.

In '83 and '84, HPV 16 and 18 were discovered as the cause of cervical cancer. And in '95, an HPV DNA test was proven and it's now for years has been in use in developed countries. HPV vaccine were available in 2006.

So the first introducers of most innovation are developed countries and especially in the population who less need this innovation, because this cervical cancer is very low.

An exception in Mexico that that has a very [inaudible] in incorporating this innovation. Thanks to the particular situation that they have very well educated people in charge of the University of Health.

So, people that use to be the head of the National Institute of Public Health became health's authorities. So that was very important to help Mexico do well, leading Latin America in the change.

So the question is also, so who needed the innovation, who is getting it, who is deciding, and this is the problem. So I think in this example, things are upside down. So, this is just one example in my country. I am showing the Health Services cover an regional area and the country's very segregated, so poor people tend to live in the same area and rich people in another area. And here you can see I organized the 27 health services, by their rate of deaths of cervical cancer. And you can see that we have a very broad variation.

The red arrow shows the national average that is eight approximately, and but health service number one is in the metropolitan area, near the hills where I live. They're rich people. And the last health service is Coloracis [misspelled?] where the [inaudible] population live in Southern Chili. And you can see that two worlds, I mean completely different.

Now the people in the Aroco [misspelled?] service, they're 100-percent served by public health system. The people in number one health service is 70-percent private or 80-percent private hands. So we have two different health systems in real life.

The innovation today is being used for people in the health service number one, and that's the absurdity of all this situation. This is the same information, but breaking down by years of schooling.

So, this is the trend of cervical cancer death rate from the 90s to '05. And you can see the blue line on top is the rate of women with less than eight years of education, with very little change and with very high rate. In green, the second line from eight to twelve years of education. And the red line in bottom, women with more than 12 years of education. So, it's very clearly related with poverty and education.

So it's very clear that we have to focus our intervention in the less educated women. And this is the problem, because they're in the hands of the public health system, where innovation is almost impossible, unless we change the brains of the people in charge.

So this is an example of a study that we are just completing. This is real trial in real life situation, you can see the impressive difference in the detection capacity. This is the detection of a pre-cancerous lesions, severe cancerous lesion on cancer in the same women in the general population in the metropolitan area of Chili.

The same women had the two tests and you can see the difference of HPV detection versus [inaudible], with this information you think that they'd have some authorities that

would decide, okay we should do something with this new tool, that's for the high-risk area. But it's difficult for them to understand. Also that talking about a less complex technology, we have – and in Mexico they are using this, a very simple test that is self sampling, so women who have a problem to go for a gynecological examination they can help themselves by [inaudible] test, and it's as effective as the clinician obtaining sample.

Also, it has been demonstrated in India that if you move the HPV will prevent more deaths in India and probably everywhere, than the current [inaudible] technique. So, we already have demonstrated effectiveness.

So the thing is, I think today we have to focus this in the population that we saw is with highest risk. And we have to also via looking at the more simple techniques that are being developed in China that will drop the cost enormously. And we have to see how to standardize these techniques to use it for poor population.

And today as I see in my country, the main struggle is the public health managers incompetence to handle innovation. So, since I am in the academia and I teach I feel like our task is to change public health's officers to be able to absorb innovation and innovate innovation. And I think this is it.

Thank you very much. [Applause]

RICHARD PARKER: Thank you. It's been a long session, but we're going to take a break now for 15 minutes. And so if everybody would please help themselves to tea and coffee out in the entry area. Restrooms are to that side of the room through those doors. And we'll be back in 15 minutes for the other background discussions.

[END RECORDING]

[1] The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.