

GLOBAL

ALLIANCE FOR

CHRONIC

DISEASES

Annual Scientific Meeting

10 - 13 November 2015

 **GACD**
GLOBAL ALLIANCE FOR CHRONIC DISEASES
AN ALLIANCE OF HEALTH RESEARCH FUNDERS





CONACYT

Table of Contents

Meeting Agenda	4
Monday 9 November.....	4
Tuesday 10 November.....	5
Wednesday 11 November.....	7
Thursday 12 November.....	10
Friday 13 November.....	11
Stream Assignments	12
Meeting Information	14
Meeting Hotel and Venue.....	14
Travel.....	14
Travel Insurance and Personal Safety.....	14
Weather.....	15
Registration.....	15
Internet access.....	15
Meals.....	15
Special visit: Teotihuacan ruins.....	15
Maps.....	16
Suggested tourist attractions.....	17
List of Participants	18
Research Team Members.....	18
Funding Agency Representatives.....	45
GACD Secretariat.....	50
Project Updates	52
DM01: Improving the management of Diabetes in Pregnancy in Remote Australia.....	52
DM02: Systematic Medical Assessment, Referral and Treatment for Diabetes care in China using Lay Family Health Promoters - SMART Diabetes.....	53
DM03: IINDIAGO (Integrated INTERvention for DIAbetes risk after GestatiONal diabetes): An integrated health system intervention aimed at reducing type 2 diabetes risk in disadvantaged women after gestational diabetes in South Africa.....	54
DM04: Community Health Assessment Program in the Philippines (CHAPP).....	55
DM05: Effects of information technology-based tools on long-term self management of diabetic and non-diabetic patients with coronary heart disease.....	58
DM06: iHEALTH-T2D - Family-based intervention to improve healthy lifestyle and prevent Type 2 Diabetes amongst South Asians with central obesity and prediabetes.....	58
DM07: SMART2D - A people-centred approach through Self-Management and Reciprocal learning for the prevention and management of Type-2-Diabetes.....	62
DM08: Feel4Diabetes: Promoting healthy lifestyle in families across Europe.....	64
DM09: Evaluacion de un programa piloto de prevencion de diabetes usando tecnologias de la informacion en una poblacion basada en el sitio de trabajo [Evaluation of a pilot project to prevent diabetes in the workplace using information technology].....	66
DM10: Desarrollo de una red social interactiva para el control metabolico de los pacientes con diabetes [Development of an interactive social network for metabolic control of patients with diabetes].....	67
DM11: Desarrollo y validación de un software ligado a un portal de internet que facilite el tratamiento médico y el empoderamiento del paciente con diabetes tipo 2, la interacción con el personal médico y la generación de un registro en tiempo real [Development and validation of a software linked to an internet site to facilitate medical treatment and empowerment of the patient with type 2 diabetes, interaction with the medical personnel and the generation of a real time registry].....	68
DM12: Mobile phone text-messaging to support treatment for people with type 2 diabetes in sub-Saharan Africa: a pragmatic individually randomised trial.....	69
DM13: The Bangladesh D-Magic Trial. Diabetes Mellitus: Action Through Groups or Information for Better Control?.....	70

<i>DM14: Implementation of foot thermometry and SMS to prevent diabetic foot ulcer.....</i>	<i>72</i>
<i>DM15: Bridging Income Generation with Group Integrated Care (BIGPIC)</i>	<i>73</i>
<i>DM16: A lifestyle intervention program for the prevention of type 2 diabetes mellitus among South Asian women with gestational diabetes mellitus</i>	<i>74</i>
<i>DM17: Tools and Practices to Reduce CVD and Complications in the Diabetic Population in Mexico</i>	<i>75</i>
<i>HT01: Utilizing HIV/AIDS infrastructure as a gateway to chronic care of hypertension in Africa</i>	<i>76</i>
<i>HT02: Developing an innovative strategy for hypertension detection, treatment and control in two middle income countries, HOPE-4.....</i>	<i>77</i>
<i>HT03: DREAM-GLOBAL: Diagnosing hypeRtension - Engaging Action and Management in Getting LOwer Bp in Aboriginal and LMIC.....</i>	<i>79</i>
<i>HT04: A school-based education program to reduce salt intake in children and their families</i>	<i>81</i>
<i>HT05: Treating hypertension in rural South Africa: A clinic-based lay health worker to enhance community-based outreach services for integrated chronic care</i>	<i>83</i>
<i>HT06: Improving the control of HT in rural India: overcoming the barriers to diagnosis and effective treatment.....</i>	<i>85</i>
<i>HT07: A smartphone-based clinical decision support system for primary health.....</i>	<i>88</i>
<i>HT08: Randomised control trial of early use of a simplified treatment regimen incorporating a half -dose, three-in-one blood pressure lowering pill vs. usual care for improving hypertension control in India</i>	<i>90</i>
<i>HT09: Developing the evidence base for a national salt reduction program for India.....</i>	<i>91</i>
<i>HT10: Cost effectiveness of salt reduction interventions in Pacific Islands</i>	<i>92</i>
<i>Christoforou A, Snowdon W, Laesango N, Vatucaawaqa S, Lamar D, Alam L, Lippwe K, Havea I, Tairea K, Hoejskov P, Waqanivalu T, Webster J. Progress on Salt Reduction in the Pacific Islands: From Strategies to Action. Heart, Lung and Circulation, 2014 DOI: 10.1016/j.hlc.2014.11.023 [Impact Factor 1.172].....</i>	<i>93</i>
<i>HT11: Launching a salt substitute to reduce blood pressure at the population level in Peru.....</i>	<i>94</i>
<i>HT12: Task shifting and blood pressure control in Ghana - a cluster-randomized trial.....</i>	<i>95</i>
<i>HT13: Optimizing linkage and retention to hypertension care in rural Kenya</i>	<i>97</i>
<i>HT14: Comprehensive approach to hypertension and control in Argentina</i>	<i>101</i>
<i>HT15: Tailored Hospital-based Risk Reduction to Impede Vascular Events after Stroke (THRIVES).....</i>	<i>102</i>
Appendix.....	105
<i>GACD diabetes baseline prevalence data dictionary</i>	<i>105</i>
<i>GACD Annual Research Network Meeting Poster Competition</i>	<i>120</i>
<i>First Joint Publication: Behaviour change strategies for reducing blood pressure-related disease burden: findings from a global implementation research programme</i>	<i>122</i>

Meeting Agenda

Monday 9 November		
Time/Venue	Topic	Attendees
9.00am – 5.00pm <u>Room 1</u>	Implementation Science Workshop <i>See separate agenda</i>	Workshop participants
1.30pm – 5.30pm <u>Room 2</u>	Management Committee Meeting	Management Committee
7.00pm onwards <u>Hotel</u>	Workshop social event	Workshop participants & Management Committee

Tuesday 10 November

Time/Venue	Topic	Attendees
9.00am – 11.00am <u>Room 1</u>	Implementation Science Workshop (cont.) <i>See separate agenda</i>	Workshop participants
9.00am – 3.00pm <u>Room 2</u>	Management Committee Meeting	Management Committee
11.30am – 3.00pm	Site Visit to National Institutes of Health <i>Optional visit for max 25 people</i>	Registered visitors
3.30pm - 4.15pm <u>Room 1</u>	GACD Diabetes Programme Orientation <i>Diabetes Programme gathered together.</i> <ul style="list-style-type: none"> • <i>Overview of GACD and potential for collaboration</i> <ul style="list-style-type: none"> ○ <i>Celina Gorre, Global Alliance for Chronic Diseases</i> ○ <i>Prof Nancy Edwards, Canadian Institutes of Health Research</i> ○ <i>Dr Prashant Mathur, Indian Council of Medical Research</i> • <i>Introduce Secretariat</i> • <i>Engaging with the GACD</i> • <i>GACD Researchers Perspectives (Dr David Peiris and Dr Jaime Miranda)</i> • <i>Introduce Working Group Chairs</i> • <i>Data dictionary</i> • <i>When to elect programme co-chairs</i> • <i>Q & A Session</i> 	Diabetes Project Members
4.30pm – 5.00pm <u>Room 1</u>	Opening of Meeting <i>Dr Mercedes Juan, Mexican Health Minister</i> <i>Dr Guillermo Ruiz Palacios, Director of the Coordinating Commission of the National Institutes of Health and High</i>	All

Specialty Regional Hospitals

*Dr Enrique Cabrero, Director of the National Council for
Science and Technology*

Celina Gorre, Global Alliance for Chronic Diseases

<i>5.00pm – 5.30pm</i>	Keynote Address	All
<u>Room 1</u>	<i>Dr David Kershenobich, Director of Mexico’s National Institute of Medical Science and Nutrition Salvador Zubiran</i>	

<i>5.30pm onwards</i>	Opening Reception	All
<u>Hotel</u>		

Objectives for the day:

1. Streams

- Conference attendees are together for morning session with introductions from each stream (mHealth, Behaviour Change and System Change).
- After lunch, conference splits into three parallel streams, with teams placed into streams according to methodologies and intervention targets. Each stream is a mix of diabetes and hypertension teams. There will be a pair of stream co-leaders to assist each stream and present back to the meeting as a whole on day 2. Each stream starts with a very brief presentation (<5min) from each project, then opens for discussion on pertinent issues.
- The aim of the parallel sessions is to discuss common successes and failures of the hypertension projects, and how the diabetes projects might learn from this. Additionally, it should be used as an opportunity to identify where joint working between the teams could be beneficial.

2. Poster Competition

- The poster competition runs throughout day. Posters will be displayed near the conference area.
- Posters will be judged by a panel, and there is also a “People’s Choice Award” for the poster that YOU think deserves the award. Please remember to vote by placing the sticker that has been placed in your name tag holder. Prizes will be awarded on Thursday afternoon.

8.45m – 9am <u>Room 1</u>	Stream Introducers and Co-leaders Briefing			Stream introducers and co-leaders
9.00am–9.50am <u>Room 1</u>	mHealth Stream Introduction <i>Dr Praveen Devarsetty, The George Institute for Global Health, India</i> <i>Overview of theme and recommendation of key discussion points</i>			All
9.50am-10.40am <u>Room 1</u>	Behaviour Change Introduction <i>Dr Meena Daivadanam, Uppsala University</i> <i>Overview of theme and recommendation of key discussion points</i>			All
10.40am-11.10am	Coffee Break			
11.10am–12.00pm <u>Room 1</u>	System Change Introduction <i>Dr Rohina Joshi, The George Institute for Global Health, Australia</i> <i>Overview of theme and recommendation of key discussion points</i>			All
12.00pm-12.30pm <u>Room 1</u>	Summary of Meeting Format <i>Chance to reiterate expectations for each stream and roles of various people</i> <i>Dr Jaime Miranda and Dr David Peiris, Hypertension Programme co-chairs</i>			All
12.30pm–2.00pm	Lunch <i>Poster entrants stand by their posters</i>			
2.00pm–3.30pm	Room 1 mHealth 1 <i>Single slide from each team; begin discussion</i>	Room 2 Beh. Change 1 <i>Single slide from each team; begin discussion</i>	Room 3 System Change 1 <i>Single slide from each team, begin discussion</i>	All, broken into streams
3.30pm – 3.45pm	Coffee Break			
3.45pm – 5.15pm	Room 1	Room 2	Room 3	All, broken into

	mHealth 2 <i>Cont. discussion; summarise key points</i>	Beh. Change 2 <i>Cont. discussion; summarise key points</i>	System Change 2 <i>Cont. discussion; summarise key points</i>	streams
<i>5.15pm-5.30pm</i>	Daily wrap-up			
<i>5.30pm onwards</i>	Group meetings			Optional
	<i>Evening to be kept free for teams and working groups to meet.</i>			
	Task-Shifting Working Group – 5.30-6.30pm			
	COUNCIL Working Group – 5.30-6.30pm			
	Process Evaluation Working Group - 5.30-6.30pm			

Thursday 12 November

Time/Venue	Topic	Attendees
9.00am – 9.40am <u>Room 1</u>	<p>mHealth Spotlight</p> <p><i>Overview and key points from stream leaders, then open for discussion</i></p> <p><i>Dr Andrew Farmer, University of Oxford</i></p> <p><i>Dr Clicerio Gonzalez Villalpando, Instituto Nacional de Salud Publica</i></p>	All
9.40am – 10.20am <u>Room 1</u>	<p>Behaviour Change Spotlight</p> <p><i>Overview and key points from stream leaders, then open for discussion</i></p> <p><i>Dr Rajesh Vedanthan, Icahn School of Medicine at Mount Sinai</i></p> <p><i>Dr Ruth Webster, The George Institute for Global Health</i></p>	All
10.20am – 11.00am <u>Room 1</u>	<p>System Change Spotlight</p> <p><i>Overview and key points from stream leaders, then open for discussion</i></p> <p><i>Dr Louise Maple-Brown, Menzies School of Health Research</i></p> <p><i>Prof Patricio Lopez-Jamarillo, Universidad de Santander</i></p>	All
11.00am – 11.15pm	Coffee Break	
11.15am – 12.15pm <u>Room 1</u>	<p>Working Group Progress</p> <p>11:15-11:25 Joint Publications <i>Prof Brian Oldenburg</i></p> <p>11:25-11:35 Identifying Barriers to Hypertension <i>Dr David Peiris</i></p> <p>11:35-11:45 Baseline Data Standardisation and Data Sharing TBC</p> <p>11:45-11:55 Task Shifting <i>Dr Rohina Joshi</i></p>	All

11:55-12:05 Process Evaluation
Felix Limbani

12:05-12:15 Implementation Science Paper Series
Dr Karen Yeates

12.15pm – 1.15pm	The Future of International Research Collaborations	All
	Dr Alain Beaudet, President, Canadian Institutes of Health Research and GACD Chair-Elect	
	Dr Guillermo Ruiz-Palacios, Director, National Institutes of Health, Mexico	
	Commissioner Carlos Moedas, European Commission, Research, Science and Innovation	
	Q&A	
1.15pm – 2.15pm	Lunch	
2:15pm – 4.30pm	Future of Joint Activities Discussion	All
<u>Room 1</u>	<i>Time reserved to discuss future joint activities. Topics to consider:</i> <ul style="list-style-type: none">• <i>Data sharing between teams</i>• <i>New working groups</i>	
4.30pm – 5.00pm	Closing remarks	All
<u>Room 1</u>	<i>Poster prizes awarded</i>	
7.00pm onwards	Formal dinner	All
<u>NH Restaurant</u>		

Friday 13 November

8.45am – 4.00pm	Tourist visit	Registered visitors
	<i>Visit to Teotihuacan ruins, just outside Mexico City</i>	

Stream Assignments

mHealth Projects

- DM05 Effects of information technology-based tools on long-term self management of diabetic and non-diabetic patients with coronary heart disease
- DM06 iHEALTH-T2D - Family-based intervention to improve healthy lifestyle and prevent Type 2 Diabetes amongst South Asians with central obesity and prediabetes
- DM09 Evaluacion de un programa piloto de prevencion de diabetes usando tecnologias de la informacion en una poblacion basada en el sitio de trabajo [Evaluation of a pilot project to prevent diabetes in the workplace using information technology]
- DM10 Desarrollo de una red social interactiva para el control metabolico de los pacientes con diabetes [Development of an interactive social network for metabolic control of patients with diabetes]
- DM11 Desarrollo y validación de un software ligado a un portal de internet que facilite el tratamiento médico y el empoderamiento del paciente con diabetes tipo 2, la interacción con el personal médico y la generación de un registro en tiempo real [Development and validation of software to provide medical treatment and patient empowerment to type 2 diabetics, through interaction with medical staff and real-time recording]
- DM12 Mobile phone text-messaging to support treatment for people with type 2 diabetes in sub-Saharan Africa: a pragmatic individually randomised trial
- DM13 The Bangladesh D-Magic Trial. Diabetes Mellitus: Action Through Groups or Information for Better Control?
- DM14 Implementation of foot thermometry and SMS to prevent diabetic foot ulcer
- HT03 DREAM-GLOBAL: Diagnosing hypertension - Engaging Action and Management in Getting Lower Bp in Aboriginal and LMIC
- HT07 A smartphone-based clinical decision support system for primary health

Behaviour Change

- DM08 Feel4Diabetes - Developing and implementing a community-based intervention to create a more supportive social and physical environment for lifestyle changes to prevent diabetes in vulnerable families across Europe
- DM16 A lifestyle intervention program for the prevention of type 2 diabetes mellitus among South Asian women with gestational diabetes mellitus
- HT04 A school-based education program to reduce salt intake in children and their families
- HT06 Improving the control of HT in rural India: overcoming the barriers to diagnosis and effective treatment
- HT08 Randomised control trial of early use of a simplified treatment regimen incorporating a half-dose, three-in-one blood pressure lowering pill vs. usual care for improving hypertension control in India
- HT09 Developing the evidence base for a national salt reduction program for India
- HT10 Cost effectiveness of salt reduction interventions in Pacific Islands
- HT11 Launching a salt substitute to reduce blood pressure at the population level in Peru
- HT13 Optimizing linkage and retention to hypertension care in rural Kenya
- HT14 Comprehensive approach to hypertension control in Argentina

System Change

- DM01 Improving the management of Diabetes in Pregnancy in Remote Australia
- DM02 Systematic Medical Assessment, Referral and Treatment for Diabetes care in China using Lay Family Health Promoters - SMART Diabetes
- DM03 IINDIAGO (Integrated INtervention for DIAbetes rIsk after GestatiOnal diabetes): An integrated health system intervention aimed at reducing type 2 diabetes risk in disadvantaged women after gestational diabetes in South Africa
- DM04 Community Health Assessment Program in the Philippines (CHAPP)
- DM07 SMART2D - A people-centred approach through Self-Management and Reciprocal learning for the prevention and management of Type-2-Diabetes
- DM15 Bridging Income Generation with Group Integrated Care (BIGPIC)
- HT01 Utilizing HIV/AIDS infrastructure as a gateway to chronic care of hypertension in Africa
- HT02 Developing an innovative strategy for hypertension detection, treatment and control in two middle income countries, HOPE-4
- HT05 Treating hypertension in rural South Africa: strengthening community-based outreach services for integrated chronic care
- HT12 Task shifting and blood pressure control in Ghana - a cluster-randomized trial
- HT15 Tailored Hospital-based Risk Reduction to Impede Vascular Events after Stroke (THRIVES)

Meeting Information

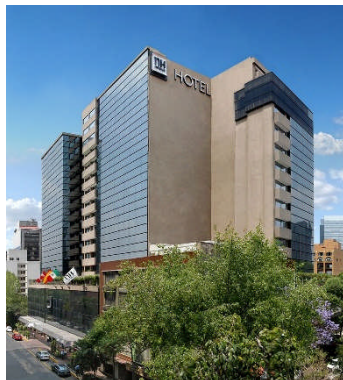
The GACD Research Programme's fourth annual Research Network meeting will be held 9-13 November 2015 in Mexico City.

One of the largest cities in the world, Mexico City is also the oldest capital city in the Americas. While the Aztecs discovered and gave the city its culture and heritage, the Spanish have given it their distinctive touch. Today, the cultural amalgamation is seen in every aspect of life in the city.



Meeting Hotel and Venue

NH Mexico City Reforma



Liverpool, 155
Zona Rosa
06600
Mexico City
Mexico

<http://www.nh-hotels.com/hotel/nh-mexico-city-reforma>

Attendees are responsible for their own accommodation arrangements.

If you need to reach the GACD Secretariat while in Mexico, please use this number: **+52 1 (55) 49612134**

Travel

Delegates are asked to make and manage their own transfer bookings.

To get to the hotel on arrival we would suggest that you use the organised taxi service at the airport, however the hotel can also assist with airport shuttle arrangements. Established, authorized taxi companies have booths just after baggage collection within the airport terminal and use a zonal prepaid system. Request a **sedan car** to the hotel.

The fee should be in the region of 300-400 pesos (20-25USD) and is payable in dollars. Once paid you will be issued a voucher and directed to an attendant who will source a car for you. The journey can be anything from 45min to 1h30m depending on the traffic. If you have any questions or queries regarding the arrangements for the meeting then please do not hesitate to contact gacd@ucl.ac.uk, or Noemi Mendoza (noemi.mendoza@vicejsa.com or **+52 1 (55) 5534881972**), the travel agent in Mexico who is helping with the arrangements for the meeting.

Travel Insurance and Personal Safety

You should ensure you have adequate travel insurance for your stay in Mexico, and practice sensible personal safety precautions during your time there. Advice on all aspects of travel in Mexico can be

found on the Rough Guide website <http://www.roughguides.com/destinations/north-america/mexico/>

Weather

Mexico City is situated in the tropical zone and lies at an altitude of 2200m. The city experiences hot summers and mild winters, with little seasonal changes throughout the year. We can expect average temperatures of around 15°C, with highs of 22°C and lows of 7°C. November is one of the dryer months, but there is still the chance of some rain.

Registration

For those staying at the meeting venue, meeting materials will be handed to you during check-in. Those staying elsewhere should register prior to the afternoon sessions on 10th November, or prior to the morning sessions on 11th November.

Internet access

Internet access is available in the meeting rooms. For those staying at the meeting venue, internet access is included in the cost of the rooms.

Meals

For those staying at the meeting venue, breakfast is included in the room rate. Lunch will be served each day at the meeting venue, and coffee and refreshments will be available during the meeting. The meeting venue has a couple of dining options, and there are a number in the local area. Please note that evening meals beyond those detailed below are the responsibility of the attendees.

Tuesday 10th November, 7pm

From 7pm onwards on Tuesday, all meeting attendees are invited to a light buffet and drinks reception at the meeting hotel. This will be a great opportunity to catch up with colleagues and meet new meeting attendees.

Thursday 12th November, 7pm

You are invited to a formal dinner co-hosted by Conacyt and GACD to mark the closing of the meeting.

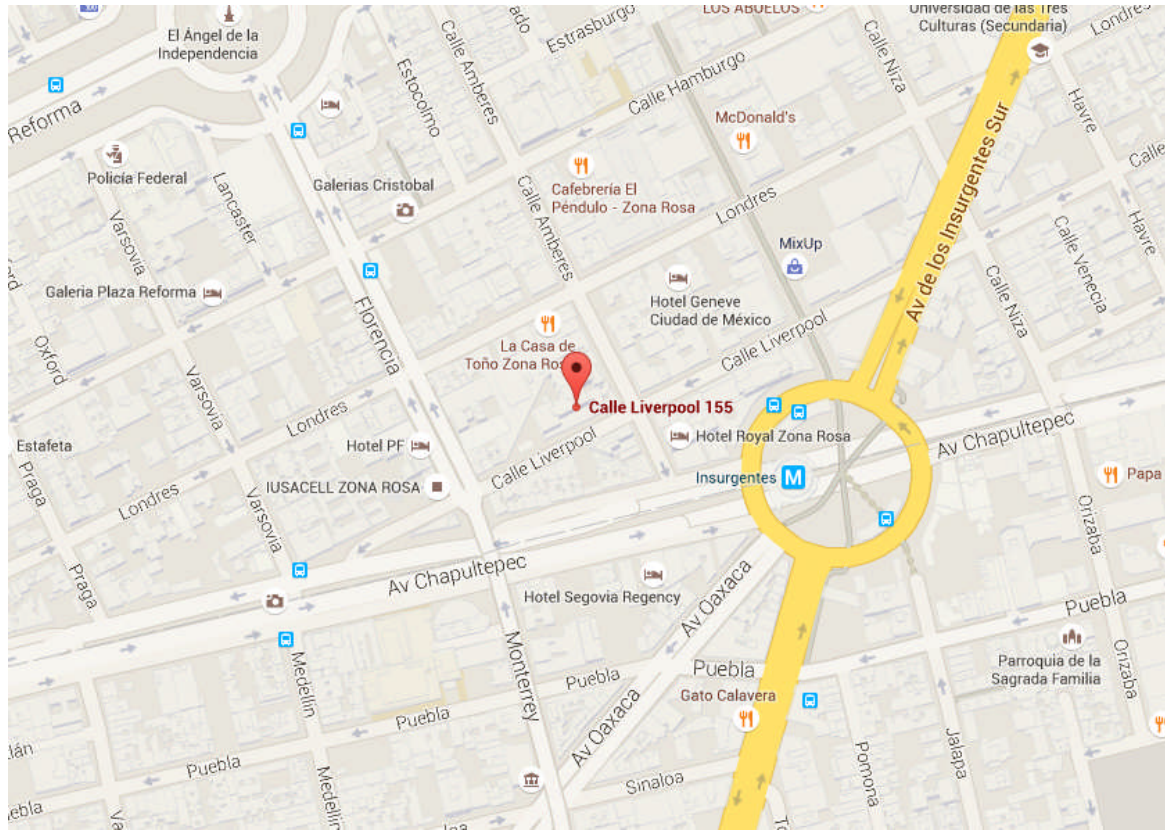
Special visit: Teotihuacan ruins

An excursion to the Teotihuacan archaeological site will take place during the day of Friday 13th November. Teotihuacan was a pre-Colombian Mesoamerican city known today as the site of many of the most architecturally significant Mesoamerican pyramids built in the pre-Colombian Americas. Apart from the pyramids, Teotihuacan is also anthropologically significant for its complex, multi-family residential compounds, the 'Avenue of the Dead', and the small portion of its vibrant murals that have been exceptionally well-preserved.

Those who have registered for this trip are asked to meet at 8.45am in the hotel lobby. The group will return around 4.00pm.

Maps

Meeting hotel local area



Meeting hotel location map



Suggested tourist attractions

Below are some suggestions for those planning on staying on in Mexico City after the end of the meeting.

The Plaza de la Constitución, or Zócalo



This is the main square of Mexico City's historic centre. At 250x150 metres, it is one of the largest public squares in the world. The great expanse of paved space is decorated with a single huge Mexican flag. This is the heart of the city, the site of events, festivals and protests. Plans were made to erect a column as a monument to independence, but only the base, or *zócalo* (meaning 'plinth'), was ever built. The plinth was destroyed long ago but the name has lived on.

Museo Frida Kahlo



The Casa Azul or Blue House in Coyoacan was the family home of the famous artist and wife of painter Diego Rivera. They lived here during the last 14 years of her life. Their home, decorated with Mexican arts and crafts, allows visitors a glimpse into the private life of these eccentric artists. Entrance is around \$9, and the museum is open every day except Mondays.

<http://www.museofridakahlo.org.mx>

Palacio Nacional



The government building takes up the eastern side of the Zocalo and houses the federal treasury and national archives. The main attraction here is Diego Rivera's murals depicting thousands of years of Mexican history. High above the centre door hangs the Campana de Dolores, the bell rung in the town of Dolores Hidalgo by Padre Miguel Hidalgo in 1810 at the start of the War of Independence.

Xochimilco



The chinampas or 'floating gardens' of the Aztecs were an ingenious agricultural technique to create arable land on the lake. Now you can ride brightly coloured boats along the canals and buy from vendors on barges. Xochimilco is a UNESCO World Heritage Site located about 17 miles south of Mexico City.

List of Participants

Research Team Members

Paloma Almeda-Valdes



*Instituto Nacional de Ciencias Medicas y Nutricion Salvador Zubiran
Mexico
palomaalmeda@yahoo.com*

Project: DM11: Desarrollo y validación de un software ligado a un portal de internet que facilite el tratamiento médico y el empoderamiento del paciente con diabetes tipo 2, la interacción con el personal médico y la generación de un registro en tiempo real [Development and validation of software to provide medical treatment and patient empowerment to type 2 diabetics, through interaction with medical staff and real-time recording]

Paloma is a staff physician and investigator at the Endocrinology Department of the INMNCSZ in Mexico City with an interest in beta cell function and insulin resistance.

Kishwar Azad



*Diabetic Association of Bangladesh
Bangladesh
kishwar.azad@googlemail.com*

Project: DM13: The Bangladesh D-Magic Trial. Diabetes Mellitus: Action Through Groups or Information for Better Control?

Kishwar is a senior paediatrician with more than 30 years experience in working in general paediatrics, neonatology and endocrinology and diabetes. She has research collaborations with University College London, and was recently awarded funding to research the roles of participatory groups and mobile messaging in preventing and managing diabetes.

Paul Camacho-Lopez

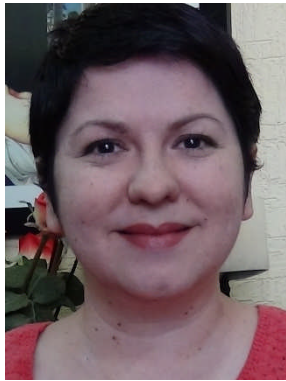


Universidad Autonoma de Bucaramanga
Colombia
camacholopez.paul@gmail.com

Project: HT02: Developing an innovative strategy for hypertension detection, treatment and control in two middle income countries, HOPE-4

Paul is a researcher in the area of cardiometabolic and physical activity. Investigator for the HOPE-4 study. Chief of Research & Development in Fundación Oftalmologica de Santander - FOSCAL (Colombia).

Elsa Cornejo Vucovich



El Colegio de Sonora
Mexico
elsa.cornejo@gmail.com

Project: DM17: Tools and Practices to Reduce CVD and Complications in Diabetics in Mexico

A Research Associate at El Colegio de Sonora, Elsa has collaborated on research-action projects in areas such as chronic disease prevention, community health promotion, sexual health, and gender and health. In addition to her research, she is an activist and community promoter on health and human rights issues.

Fortunato Cristobal



Ateneo de Zamboanga University
Philippines
cristobalforl@adzu.edu.ph

Project: DM04: Community Health Assessment Program in the Philippines (CHAPP)

Fortunato's research interests include Public Health, Gastroenterology, Medical Education, Pediatric and Nutrition. He is currently working on the Community Health Assessment Program in the Philippines.

Meena Daivadanam



*Karolinska Institutet, Uppsala University
Sweden
meena.daivadanam@ki.se*

Project: DM07: SMART2D - A people-centred approach through Self-Management and Reciprocal learning for the prevention and management of Type-2-Diabetes

Meena is a medical doctor with experience in NCD surveillance and intervention research for more than ten years. Her research interests centre on behaviour change interventions in relation to NCDs from a community and health systems perspective.

Catalina Denman Champion



*El Colegio de Sonora
Mexico
cdenman@colson.edu.mx*

Project: DM17: Tools and Practices to Reduce CVD and Complications in Diabetics in Mexico

An anthropologist with a PhD in Social Sciences from El Colegio de Michoacán, she is a Professor-Researcher at El Colegio de Sonora. Her research focuses on public health in border and urban areas of northern Mexico, including reproductive health, non-communicable disease prevention, and health promotion. She is currently the Co-PI for Mexico of an NHLBI-funded, collaborative project with the University of Arizona to counter CVD in the diabetic population of Mexico.

Anniza de Villiers



*South African Medical Research Council
South Africa
Anniza.deVilliers@mrc.ac.za*

Project: HT01: Utilizing HIV/AIDS infrastructure as a gateway to chronic care of hypertension in Africa

Anniza holds a PhD from the University of Stellenbosch and currently works as a senior scientist at the Non-communicable Diseases Research Unit at the South African Medical Council where she's involved in several projects and post graduate student supervision. She is currently coordinating the GACD funded HIV and hypertension research conducted in the unit, and has a special interest in qualitative research methodology and intervention research, especially school-based research.

Francisco Diez-Canseco



Universidad Peruana Cayetano Heredia
Peru
fdiezcanseco@upch.pe

Project: HT11: Launching a salt substitute to reduce blood pressure at the population level in Peru

Francisco is a psychologist with public health training and an Associate Investigator at CRONICAS Center of Excellence in Chronic Diseases at Universidad Peruana Cayetano Heredia in Lima, Peru. He has 14 years' experience leading in-depth qualitative studies and large-scale surveys. His research experience includes projects in NCDs and mental health.

Lisa Dolovich



McMaster University
Canada
ldolovic@mcmaster.ca

Project: DM04: Community Health Assessment Program in the Philippines (CHAPP)

Lisa is interested in community base primary health care approaches to improve chronic disease management and screening with a focus on best use of medications, program development and evaluation methods or ehealth technology.

Andrew Farmer



University of Oxford
United Kingdom
andrew.farmer@phc.ox.ac.uk

Project: DM12: Mobile phone text-messaging to support treatment for people with type 2 diabetes in sub-Saharan Africa: a pragmatic individually randomised trial

Professor Farmer is a family practitioner and researcher based in Oxford UK researching the self-management of diabetes in general practice including medication adherence and use of mobile-health based initiatives. He has extensive experience of research administration and ran the Oxford Primary Care Clinical Trials Unit from 2008 to 2014.

Xiangxian Feng



Changzhi Medical College

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xfena66@163.com

Project: HT04: A school-based education program to reduce salt intake in children and their families

Xiangxian has been in medical education and research for 33 years. His main research interest focuses on chronic disease epidemiology and he was part of the School-EduSalt project. He has also participated in and accomplished 22 other international and scientific research projects.

Alfonso Fernandez Pozas



Universidad de Monterrey

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Project: DM10: Desarrollo de una red social interactiva para el control metabolico de los pacientes con diabetes [Development of an interactive social network for metabolic control of patients with diabetes]

Alfonso is AMS Media's CEO. He has taken the lead in the creation of over 60 videogames, as well as other online communities. He has partnered with prestigious researchers and universities across the world. Among others, his videogames have contributed to solving problems such as problem gambling, anxiety, and ADHD.

Edward Fottrell



University College London

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Project: DM13: The Bangladesh D-Magic Trial. Diabetes Mellitus: Action Through Groups or Information for Better Control?

Dr Fottrell is interested in: epidemiology and global health metrics; community-based interventions for maternal and newborn health and, more recently, diabetes and NCD risk factors, in low-income settings; cluster randomised trials; mortality and morbidity measurement and survey methods; epidemiologic transitions; mHealth.

Cristina Garcia-Ulloa



*Instituto Nacional de Ciencias Medicas y Nutricion Salvador Zubiran
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Project: DM11: Desarrollo y validación de un software ligado a un portal de internet que facilite el tratamiento médico y el empoderamiento del paciente con diabetes tipo 2, la interacción con el personal médico y la generación de un registro en tiempo real [Development and validation of software to provide medical treatment and patient empowerment to type 2 diabetics, through interaction with medical staff and real-time recording]

Ana Cristina is an internist and endocrinologist with a subspecialty in obesity. She recently finished her masters degree in medical sciences.

Francisco Gonzalez Salazar



*Universidad de Monterrey
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fgonz75@hotmail.com*

Project: DM10: Desarrollo de una red social interactiva para el control metabolico de los pacientes con diabetes [Development of an interactive social network for metabolic control of patients with diabetes]

Francisco is a Pediatrician with a PhD in Microbiology. His main research interests are tuberculosis, obesity and diabetes. He is also interested in migration health issues, mainly parasitic diseases including trichomoniasis, amoebiasis, giardiasis and HIV infection.

Clicerio Gonzalez Villalpando



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Project: DM09: Evaluacion de un programa piloto de prevencion de diabetes usando tecnologias de la informacion en una poblacion basada en el sitio de trabajo [Evaluation of a pilot project to prevent diabetes in the workplace using information technology]

MD From Universidad Nacional Autonoma de Mexico. Internal Medicine Speciality University of Texas, Endocrinology Specialty University of Chicago Principal Investigator The Mexico City Diabetes Study. Investigator Instituto Nacional de Salud Publica

Maria Gonzalez Villalpando



Centro de Estudios en Diabetes
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Project: DM09: Evaluacion de un programa piloto de prevencion de diabetes usando tecnologias de la informacion en una poblacion basada en el sitio de trabajo [Evaluation of a pilot project to prevent diabetes in the workplace using information technology]

Maria is a physician and specializes in ophthalmology and epidemiology. She is a colaborator in the Mexico City Diabetes Study, a prospective population-based investigation with 20 years of follow-up.

Cardon Greet



Ghent University
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Project: DM08: Feel4Diabetes (Families across Europe following a hEalthy Lifestyle 4 Diabetes prevention) - Developing and implementing a community-based intervention to create a more supportive social and physical environment for lifestyle changes to prevent diabetes in vulnerable families across Europe

Greet is a full professor at the Department of Movement and Sports Sciences of Ghent University, Belgium. She leads a large research group, which mainly focuses on understanding the determinants of physical activity and sedentary behavior, as well as identifying the most effective ways to promote more physical activity and less sitting in different age groups.

Jill Guernsey de Zapien

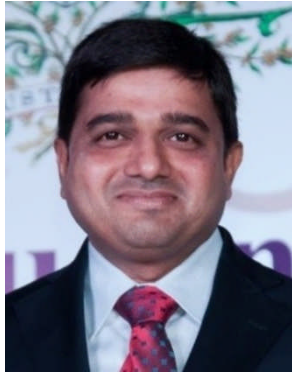


University of Arizona, El Colegio de Sonora
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Project: DM17: Tools and Practices to Reduce CVD and Complications in Diabetics in Mexico

Jill Guernsey de Zapien is the Associate Dean for Community Programs at the University Of Arizona College Of Public Health. She has been involved in community based public health interventions, polices and research in Arizona and throughout the Southwest and northern Mexico for more than thirty years.

Rama Guggilla



The George Institute for Global Health - India
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rqugilla@georgeinstitute.org.in

Project: HT06: Improving the control of HT in rural India: overcoming the barriers to diagnosis and effective treatment

Rama Guggilla is a clinician and a Research Fellow at the George Institute for Global Health. His research interests include epidemiological and clinical research on cardio-metabolic disorders. He is also interested in evidence-based health care and health systems and policy research. He is interested in research on using disruptive innovations in health care delivery.

Joyce Gyamfi



New York University School of Medicine
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Joyce.gyamfi@nyumc.org

Project: HT12: Task shifting and blood pressure control in Ghana - a cluster-randomized trial

Ms. Gyamfi has a Master's of Science in Epidemiology and has completed doctoral coursework in Epidemiology and Community Health. Her research area of interest is in Health Disparities, specifically in Cardiovascular Diseases and Maternal Child Health. She has worked for over 10 years implementing foundation and federal sponsored research projects in these areas.

Servando Halili



Ateneo de Zamboanga University
Phillipines
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Project: DM04: Community Health Assessment Program in the Philippines (CHAPP)

Servando's research interests include language and culture and its relation to health and well-being. He supervises students' research and has positions as Senior Researcher and Project Director on research grants with international partners.

Jiang He



*Tulane University
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Project: HT14: Comprehensive approach to hypertension control in Argentina

Jiang He is a Professor and Chair of Epidemiology at Tulane University in New Orleans, USA. His research interests include epidemiology and prevention of cardiovascular disease.

Sergio Hernandez-Jimenez



*Instituto Nacional de Ciencias Medicas y Nutricion Salvador Zubiran
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Project: DM11: Desarrollo y validación de un software ligado a un portal de internet que facilite el tratamiento médico y el empoderamiento del paciente con diabetes tipo 2, la interacción con el personal médico y la generación de un registro en tiempo real [Development and validation of software to provide medical treatment and patient empowerment to type 2 diabetics, through interaction with medical staff and real-time recording]

Sergio is an internist, endocrinologist and diabetes specialist, trained in the National Institute of Medical Sciences and Nutrition Salvador Zubiran. He is currently coordinator of the Center for Comprehensive Care of Patients with Diabetes.

Maia Ingram



*University of Arizona, El Colegio de Sonora
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Project: DM17: Tools and Practices to Reduce CVD and Complications in Diabetics in Mexico

Maia Ingram, Co-Director Arizona Prevention Research Center, University of Arizona, conducts community engaged research on the Community Health Worker model with community health centers and grassroots agencies in rural, urban and border communities. Ms. Ingram's research interests include diabetes prevention and control, health promotion, mental health, and most recently, hearing loss.

Vilma Irazola



*Instituto de Efectividad Clínica y Sanitaria
Argentina
virazola@iecs.org.ar*

Project: HT14: Comprehensive approach to hypertension control in Argentina

Vilma is Senior Researcher and Co-principal Investigator of CVD at IECS. She is also Coordinator of Academic Affairs for the Master's in Clinical Effectiveness at University of Buenos Aires. Vilma is also involved in several projects concerning implementation research in the region. Her areas of teaching and research are implementation studies, biostatistics, and survey development, cross-cultural adaptation and validation.

Hannah Jennings



*University College London
United Kingdom
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Project: DM13: The Bangladesh D-Magic Trial. Diabetes Mellitus: Action Through Groups or Information for Better Control?

Hannah recently completed her PhD at UCL; her thesis explored the therapeutic use of plants among Bengali women across countries and generations. She has extensive experience working with local and international NGOs in Bangladesh. Her research interests include community-based health interventions, alternative and traditional health care systems and non-communicable diseases in developing countries.

Claire Johnson



*The George Institute for Global Health
India
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Project: HT09: Developing the evidence base for a national salt reduction program for India

Claire is a Research Associate with the George Institute for Global Health. Claire's primary research interests are in nutritional epidemiology with a focus on the prevention of NCDs in low and middle income countries. She has a Masters degree in International Public Health from the University of Sydney and is undertaking a PhD based on the salt reduction work in India.

Rohina Joshi



*The George Institute for Global Health, The University of Sydney
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Project: DM16: A lifestyle intervention program for the prevention of type 2 diabetes mellitus among South Asian women with gestational diabetes mellitus

HT06: Improving the control of HT in rural India: overcoming the barriers to diagnosis and effective treatment

HT07: A smartphone-based clinical decision support system for primary health

Rohina is a medically trained epidemiologist. She is a senior research fellow at The George Institute for Global Health and senior lecturer at the University of Sydney with an interest in disease surveillance and health systems research with a specific focus on task-shifting and new models of care for chronic disease management in low- and middle-income countries.

Dimitrios Kakoulis



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Project: DM08: Feel4Diabetes (Families across Europe following a hEalthy Lifestyle 4 Diabetes prevention) - Developing and implementing a community-based intervention to create a more supportive social and physical environment for lifestyle changes to prevent diabetes in vulnerable families across Europe

Dimitrios has a background in business and economics, and his career spans more than 25 years of work in technology companies and innovative enterprises. As project leader and manager, he is intensively engaged in the e-mobile and e-health (for IDF Europe in Manage care and Feel4Diabetes) business environment.

Andre Kengne



*South African Medical Research Council
South Africa
andre.kengne@mrc.ac.za*

Project: HT01: Utilizing HIV/AIDS infrastructure as a gateway to chronic care of hypertension in Africa

Dr Kengne is currently the Director of South African MRC's National Collaborative Research Programme on Cardiovascular and Metabolic Diseases, and holds conjoint appointments at the Faculty of Health sciences of the University of Cape Town, and the Department of Medicine of the Groote Schuur Hospital, Cape Town.

Azad Khan



Diabetic Association of Bangladesh
Bangladesh
president@dab-bd.org

Project: DM13: The Bangladesh D-Magic Trial. Diabetes Mellitus: Action Through Groups or Information for Better Control?

Prof Khan is President of Diabetic Association of Bangladesh and is well reputed for his scientific activities and also for the development of sustainable healthcare model (Ibrahim Diabetes care Model) especially designed for developing nations. He is the prime mover behind NCD program in South Asian Region.

Saat Kimaru



Moi University
Kenya
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Project: HT13: Optimizing linkage and retention to hypertension care in rural Kenya

Saat recently completed a BA in sociology at Moi University and is currently a research assistant for the LARK Study. He has experience working with children in foster care and in HIV/AIDS care settings and worked as a social work intern at AMPATH and Moi Teaching & Referral Hospital. Saat's research interests include the adoption of health information technology (mHealth) to facilitate chronic disease management and improve collaboration between patients and providers.

Peninah Kiptoo



Moi University
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peshitoo@gmail.com

Project: DM15: Bridging Income Generation with Group Integrated Care (BIGPIC)

HT13: Optimizing linkage and retention to hypertension care in rural Kenya

Currently, Peninah works as Research Coordinator. She possesses a Degree in Public Health and is currently pursuing a MPH (Epidemiology and Population Health). She is a public health researcher with a keen interest in research that focuses on improving the health and quality of life of the community. She has experience in implementing research projects in resource-limited settings.

Maria Lazo



*Universidad Peruana Cayetano Heredia
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maria.lazo@upch.pe*

Project: DM14: Implementation of foot thermometry and SMS to prevent diabetic foot ulcer

HT11: Launching a salt substitute to reduce blood pressure at the population level in Peru

Maria is a physician from Peru and candidate for a master degree in Epidemiology from Universidad Peruana Cayetano Heredia. She is a study coordinator from CRONICAS Center of Center of Excellence for Chronic Diseases and her research focus is in diabetes, with special emphasis in interventions to prevent foot complications.

Sun Lei



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Project: DM02: Systematic Medical Assessment, Referral and Treatment for Diabetes care in China using Lay Family Health Promoters - SMART Diabetes

Sun graduated from Peking University Health Science Center in 2014 with a Masters degree and joined The George Institute as a research assistant where she focuses on health promotion for chronic diseases.

Felix Limbani



*University of the Witwatersrand
South Africa
felix.limbani@wits.ac.za*

Project: HT05: Treating hypertension in rural South Africa: strengthening community-based outreach services for integrated chronic care

Felix Limbani is a research fellow and PhD student with University of Witwatersrand. He has ten years of managing public health and research programmes. He has worked for several health and development NGOs, leading both projects and internal research programmes. His research interest includes sexual and reproductive health, maternal health, knowledge translation and process evaluation of chronic care interventions.

Peter Liu



University of Ottawa Heart Institute
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Project: HT03: DREAM-GLOBAL: Diagnosing hypertension - Engaging Action and Management in Getting Lower Bp in Aboriginal and LMIC

Patricio Lopez



Universidad de Santander
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jplopezi@gmail.com

Project: HT02: Developing an innovative strategy for hypertension detection, treatment and control in two middle income countries, HOPE-4

Patricio is the principal investigator of the HOPE-4 study project that is developing in Colombia with financial support of the GACD. He work as the Director of the Research Department of the FOSCAL and in the Medical School of the Universidad de Santander (UDES) in Bucaramanga.

Derick Luvembe



Moi University
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Project: HT13: Optimizing linkage and retention to hypertension care in rural Kenya

Louise Maple-Brown



*Menzies School of Health Research
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Project: DM01: Improving the management of Diabetes in Pregnancy in Remote Australia

Louise has concurrently been a part-time endocrinologist at Royal Darwin Hospital since 2004 and maintains strong clinical links with Aboriginal Medical Services in Darwin and the Top End, recently setting up a weekly telehealth clinic. Louise has held the position of head of department of endocrinology at Royal Darwin Hospital since January 2012.

Previously a member of the Council of the Australasian Diabetes in Pregnancy Society, Louise is currently on the Australian Diabetes Society Council.

Roy Mayega



*Makerere University
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wromay2000@yahoo.co.uk*

Project: DM07: SMART2D - A people-centred approach through Self-Management and Reciprocal learning for the prevention and management of Type-2-Diabetes

Tara McCready



*Population Health Research Institute
Canada
tara.mccready@phri.ca*

Project: HT02: Developing an innovative strategy for hypertension detection, treatment and control in two middle income countries, HOPE-4

Tara is the Program Director for the Canadian Network and Centre for Trials Internationally (CANNeCTIN) at the Population Health Research Institute. CANNeCTIN is a national network funded by the CIHR/CFI Clinical Research Initiative program to improve the prevention and treatment of cardiac and vascular diseases and diabetes. Previously the Executive Director of the Canadian Maternal, Infant, Child and Youth Research Network, Dr. McCready holds both a PhD in Biochemistry and a MBA in Technology Commercialization from the University of Alberta.

Sergio Mimbela



Universidad Peruana Cayetano Heredia

Peru

sergiomimbela@hotmail.com

Project: HT11: Launching a salt substitute to reduce blood pressure at the population level in Peru

Sergio Mimbela is interested in participating in the GACD Annual Scientific Meeting to acquire new knowledge in the investigation of chronic diseases. His research experience is in the field of chronic diseases and as a supervisor of studies.

Jaime Miranda



Universidad Peruana Cayetano HerediaUganda

Jaime.miranda@upch.pe

Project: HT11: Launching a salt substitute to reduce blood pressure at the population level in Peru

DM14: Implementation of foot thermometry and SMS to prevent diabetic foot ulcer

Jaime is Research Professor at the Department of Medicine, School of Medicine and Director of CRONICAS Center of Excellence in Chronic Diseases, both at Universidad Peruana Cayetano Heredia (UPCH) in Lima, Peru. His works brings together epidemiological and health policy aspects of chronic non-communicable diseases in low- and middle-income countries with emphasis on obesity, hypertension, and diabetes. Dr. Miranda trained in medicine at UPCH and earned a PhD in epidemiology at the London School of Hygiene and Tropical Medicine (UK).

Sailesh Mohan



Public Health Foundation of India

India

smohan@phfi.org

Project: HT09: Developing the evidence base for a national salt reduction program for India

Dr Sailesh Mohan is currently a Senior Research Scientist and Associate Professor at the Public Health Foundation of India (PHFI). He has academically trained in medicine, public health and cardiovascular epidemiology. At PHFI, he is involved in chronic non-communicable disease (NCD) research, teaching and training. He leads various NCD research projects focussed on knowledge translation including a large unique community based comprehensive diabetes/hypertension prevention and management project as well as a project to develop the evidence base for initiating a salt reduction program in India.

Barbara Mukasa



Mildmay Uganda
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barbara.mukasa@mildmay.or.ug

Project: HT01: Utilizing HIV/AIDS infrastructure as a gateway to chronic care of hypertension in Africa

Barbara has more than 18 years of diverse experience as a health care professional in a developing setting; more than 7 years managing integrated HIV programmes. She is Executive Director of Mildmay Uganda an integrated HIV prevention, care, treatment and training programme looking after more than 94,000 PLHIV in 16 districts of the Central region of Uganda. She has participated in the design and implementation of research and programme evaluation projects in Reproductive Health, Tuberculosis, NCDs and Mental Health in the context of HIV.

Jean Claude Mutabazi



Centre de recherche du CHUM
Canada
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Project: DM03: IINDIAGO (Integrated Intervention for DIAbetes risk after GestatiOnal diabetes): An integrated health system intervention aimed at reducing type 2 diabetes risk in disadvantaged women after gestational diabetes in South Africa

Jean Claude is a PhD candidate in Public health school of University of Montreal, specialising in Global Health. After a M.Sc degree in Hospital Administration, M.Sc in Medical Sociology and M.Phil in health services management, he is studying the integration of health care services (curative and preventive) in Health Systems of low and middle income countries.

Violet Naanyu

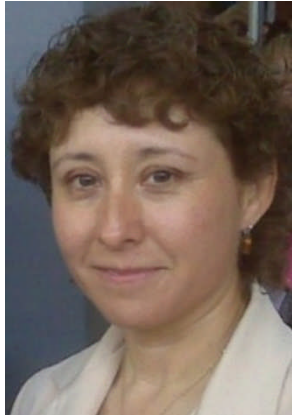


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Project: DM15: Bridging Income Generation with Group Integrated Care (BIGPIC)

Violet is a senior lecturer at the Moi University School of Medicine, Eldoret Kenya and Co-Field Director of Research, Indiana University-Kenya Program, in Eldoret, Kenya. Her graduate training was in both medical anthropology and medical sociology and her research areas explore individual and socio-cultural factors around illness, health and healthcare. She is especially interested in evaluations designed to improve care in LMICs.

Leticia Neira

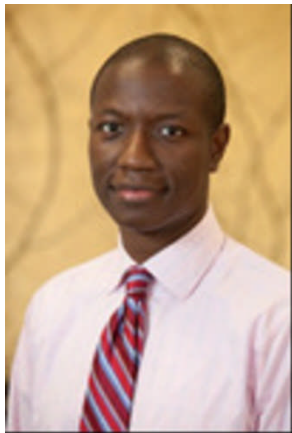


*Universidad Autónoma de Nuevo Leon
Mexico
leticia.neira@udem.edu*

Project: DM10: Desarrollo de una red social interactiva para el control metabolico de los pacientes con diabetes [Development of an interactive social network for metabolic control of patients with diabetes]

Leticia has been working on applying a systems and information technology approach to health areas such as diabetes, obesity and anxiety issues to improve and reduce their impact .

Bruce Ovbiagele



*Medical University of South Carolina
USA
ovibes@musc.edu*

Project: HT15: Tailored Hospital-based Risk Reduction to Impede Vascular Events after Stroke (THRIVES)

Bruce Ovbiagele is Professor and Chair of Neurology at the Medical University of South Carolina (USA). He is an elected Fellow of the American Academy of Neurology, American Neurological Association and American Heart Association Stroke Council. He has published numerous peer-reviewed papers on stroke epidemiology, stroke prevention and T2/T3 translational stroke research

Joanne Odenkirchen



*National Institute of Neurological Disorders and Stroke
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Project: HT15: Tailored Hospital-based Risk Reduction to Impede Vascular Events after Stroke (THRIVES)

Ms. Odenkirchen has a MPH from The Johns Hopkins University. She has worked in public health for over 30 years; mostly in the implementation and oversight of multisite clinical trials and large epidemiology studies. She has experience collaborating with universities, government health agencies, international health agencies, and NGO’s while managing large clinical research projects. She is the Program Official for a portfolio of research in ethical issues and for several large stroke, TBI, and other NINDS clinical research grants. Other interests include prevention, community health, and in research involving vulnerable populations especially in international settings.

Olugbenga Ogedegbe



*New York University School of Medicine
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Project: HT12: Task shifting and blood pressure control in Ghana - a cluster-randomized trial

Dr. Ogedegbe is a hypertension specialist, clinical epidemiologist and behavioral scientist with expertise in Health Disparities Research. The programmatic focus of his research is the development, dissemination and translation into clinical practice and community settings, evidence-based interventions to reduce racial disparities in hypertension-related outcomes in minority populations.

Brian Oldenburg



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Project: HT06: Improving the control of HT in rural India: overcoming the barriers to diagnosis and effective treatment

Brian Oldenburg is Professor of Noncommunicable Disease Prevention & Control and Director, Centre for Health Equity, University of Melbourne. His research and knowledge translation program addresses health policy, global health and real world implementation trials in Australia, Finland, China, Malaysia, India, Sri Lanka and South Africa. He is a Visitor Professor with Beijing CDC, JiaoTong University and also Finland.

Mayowa Owolabi



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Project: HT15: Tailored Hospital-based Risk Reduction to Impede Vascular Events after Stroke (THRIVES)

Pioneering Regional Vice President, World Federation for Neurorehabilitation Research expertise and experience: Vascular Neurology, Genomic Epidemiology, Neurorehabilitation Research: Tailored Hospital-based Risk reduction to Impede Vascular Events after Stroke (THRIVES) and Stroke Investigative Research & Educational Network (SIREN) designed to unravel the genetic and environmental risk factors for stroke among people of African ancestry.

Anushka Patel



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Project: DM02: Systematic Medical Assessment, Referral and Treatment for Diabetes care in China using Lay Family Health Promoters - SMART Diabetes

DM16: A lifestyle intervention program for the prevention of type 2 diabetes mellitus among South Asian women with gestational diabetes mellitus

HT07: A smartphone-based clinical decision support system for primary health

HT08: Randomised control trial of early use of a simplified treatment regimen incorporating a half -dose, three-in-one blood pressure lowering pill vs. usual care for improving hypertension control in India

Anushka is a cardiologist, Professor of Medicine (University of Sydney) and Chief Scientist (global) of The George Institute for Global Health. Her research focuses on innovative, effective and affordable solutions for chronic disease care. She leads and collaborates in research involving a number of countries including Australia, China and India.

David Peiris



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Project: DM02: Systematic Medical Assessment, Referral and Treatment for Diabetes care in China using Lay Family Health Promoters - SMART Diabetes

HT07: A smartphone-based clinical decision support system for primary health

David is a primary health care physician and health services researcher. He is involved in developing e-health and mobile health systems in Australia, India and China and evaluating their impact in large scale clinical trials.

Maria Pesantes

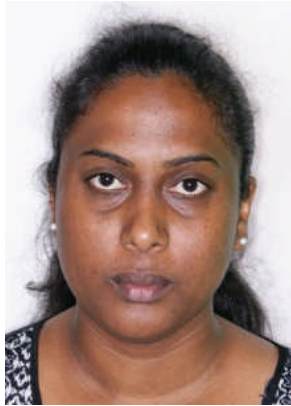


*Universidad Peruana Cayetano Heredia
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maria.pesantes.v@upch.pe*

Project: HT11: Launching a salt substitute to reduce blood pressure at the population level in Peru

Maria has a PhD in Medical Anthropology, a Master's Degree in Public Health and in International Development. Her research experience has focused on understanding the complexity of health care access for vulnerable populations.

Arti Pillay



*Pacific Research Centre for the Prevention of Obesity and Non-communicable Diseases
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Project: HT10: Cost effectiveness of salt reduction interventions in Pacific Islands

Currently Arti works as a Research Fellow for the Fiji Sodium Intervention Assessment Project at the Research Centre for the Prevention of Obesity and Non Communicable Diseases under the Fiji National University . She has held a teaching post at FNU in Food Technology from 2006-2013 and worked as a nutritionist with the National Food and Nutrition Centre. She holds a Post Graduate Diploma in Public health and a undergraduate degree in Food Science/Nutrition and Chemistry. Her research interests are Public health, and Non Communicable Diseases with a particular focus on salt reduction in the Pacific.

Jacob Plange-Rhule



*Kwame Nkrumah University of Science and Technology
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Project: HT12: Task shifting and blood pressure control in Ghana - a cluster-randomized trial

Dr. Plange-Rhule is a Ghanaian scientist at the Kwame Nkrumah School of Medical Sciences and the Komfo Anokye Teaching Hospital, where he is an Associate Professor of Medicine, and Chair of the Department of Physiology and Physician Specialist and Physician-in-Charge of the Hypertension and Renal Clinic, respectively.

Vilarmina Ponce-Lucero



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Project: HT11: Launching a salt substitute to reduce blood pressure at the population level in Peru

Vilarmina is a communicator, she has over twelve years experience in conducting communication plans focused on health. Her research goal is to communicate easily the complex health messages to the population and to make them feel responsible for the prevention and promotion of their own welfare.

Devarsetty Praveen



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Project: DM16: A lifestyle intervention program for the prevention of type 2 diabetes mellitus among South Asian women with gestational diabetes mellitus

HT07: A smartphone-based clinical decision support system for primary health

Dr Praveen is a public health researcher with a background in Medicine and post-graduation in community medicine, and having a keen interest in systems based innovations to address inequities related to chronic diseases. He currently leads the SMARThealth India program that aims to bridge the implementation gap in blood pressure control for individuals with a high risk of cardiovascular diseases.

Thandi Puoane



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South Africa
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Project: DM07: SMART2D - A people-centred approach through Self-Management and Reciprocal learning for the prevention and management of Type-2-Diabetes

Thandi is an Emeritus Professor at the University of the Western Cape, South Africa, and has a background in nursing. Her research focuses on non-communicable diseases risk factors including the impact of the food environment on the development of non-communicable diseases.

Cecilia Rosales

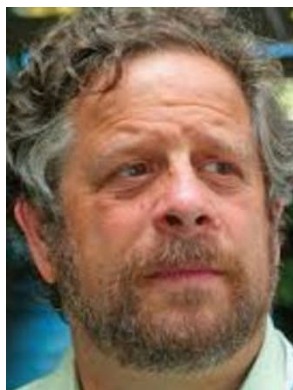


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Project: DM17: Tools and Practices to Reduce CVD and Complications in Diabetics in Mexico

Dr. Rosales has worked in the health arena for over thirty years and in the field of public health for twenty-five years. Her current research is applied and executed within a community based participatory research framework with an overall focus on the elimination of health disparities.

Adolfo Rubinstein



*Instituto de Efectividad Clinica y Sanitaria
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Project: HT14: Comprehensive approach to hypertension control in Argentina

Adolfo is Founder and Director General of the Institute for Clinical Effectiveness and Health Policy (IECS). He is Director of the Master's in Clinical Effectiveness at University of Buenos Aires, Coordinator of the Health Service Research and Policy course, and Director of the South American Centre of Excellence in Cardiovascular Health. His areas of research are cardiovascular health, chronic disease epidemiology, and primary care. He has published numerous papers on clinical epidemiology, health services research, and economic evaluations.

Raelle Saulson



*Medical University of South Carolina
United States
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Project: HT15: Tailored Hospital-based Risk Reduction to Impede Vascular Events after Stroke (THRIVES)

Raelle has a Master in Public Health from University of Michigan where she studied Health Behavior Health Education and received a Certificate in Global Health. Her interests are in chronic disease, obesity, and type II diabetes and their consequences (like stroke).

Jon-David Schwalm



*Population Health Research Institute
Canada
schwalm@mcmaster.ca*

Project: HT02: Developing an innovative strategy for hypertension detection, treatment and control in two middle income countries, HOPE-4

Dr. Schwalm is an interventional cardiologist, a Principal Investigator for the Knowledge Translation program at the Population Health Research Institute and an assistant professor at Hamilton Health Sciences/McMaster University. Dr. Schwalm completed his medical degree and clinical training at McMaster University and is completing a Master of Science in Epidemiology at the University of Ottawa. His area of interest is knowledge translation and he is Principal Investigator of two ongoing cluster-randomized controlled trials. He has published 50 peer-reviewed scientific papers, abstracts and book chapters.

Roopa Shivashankar



*Public Health Foundation of India
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Project: HT09: Developing the evidence base for a national salt reduction program for India

Roopa is a physician scientist working towards prevention of cardiometabolic diseases in LMICs. In her current capacity at PHFI, she is involved in epidemiological studies to measure incidence of CMDs, and quality of care of chronic diseases in primary care settings in South Asia.

Daniel Silveira



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Daniel Vitório Silveira is an Internal Medicine and Family Practice specialist, and is a masters student at the tropical disease program of the Federal University of Minas Gerais. He is a researcher member of the telehealth center of the University Hospital of the Federal University of Minas Gerais since March 2014, and helped in the development of a clinical decision support system to assist the care of arterial hypertension. His research fields of interest are implementation science, telehealth care, management and outcome in chronic diseases, and medical education.

Jessica Sleeth



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Project: HT03: DREAM-GLOBAL: Diagnosing hypeRtension - Engaging Action and Management in Getting LOwer Bp in Aboriginal and LMIC

Jessica is the Research Program Manager for a global health research portfolio at Queen's University. Her interests include chronic disease, social determinants of health, and access to care in low-income settings.

Maoyi Tian

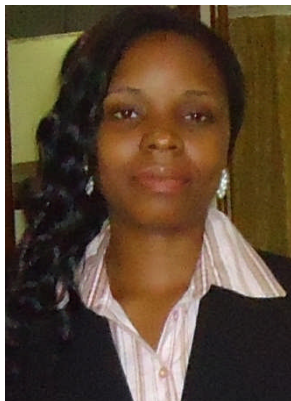


*The George Institute for Global Health - China
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Project: DM02: Systematic Medical Assessment, Referral and Treatment for Diabetes care in China using Lay Family Health Promoters - SMART Diabetes

Maoyi has a doctoral degree in Biomedical Engineering and is now studying a Master degree towards public health and epidemiology. He has led and participated in a number of trials in rural China for cardiovascular disease prevention by using mobile health (mHealth) tools. His current research interest focus on using technologies for chronic disease management.

Ezinne Uvere



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Project: HT15 Tailored Hospital-based Risk Reduction to Impede Vascular Events after Stroke (THRIVES)

Ezinne Uvere holds a post graduate degree in Public health (MPH) from University of Ibadan, Nigeria with research interests in NCDs, adolescent reproductive health, HIV/AIDS prevention, health system research. She's been involved in programs funded by DFID/APIN in Nigeria and currently coordinates a CVD project funded by NIH in Nigeria.

Rajesh Vedanthan



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Project: DM15: Bridging Income Generation with Group Integrated Care (BIGPIC)

HT13: Optimizing linkage and retention to hypertension care in rural Kenya

Dr. Rajesh Vedanthan earned his medical degree in 2002 from the University of California, San Francisco, and his Master of Public Health degree in 2000 from the University of California, Berkeley. Currently, Dr. Vedanthan is an Assistant Professor in Medicine/Cardiology at the Mount Sinai Medical Center in New York. His area of interest is global cardiology, global health delivery, capacity-building, and the intersection of health and development.

Ruth Webster



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Project: HT08: Randomised control trial of early use of a simplified treatment regimen incorporating a half-dose, three-in-one blood pressure lowering pill vs. usual care for improving hypertension control in India

Dr Webster is a Research Fellow in the The George Institute for Global Health. She has completed clinical medicine and public health degrees. Her current role is the Co-ordinator of the SPACE Collaboration, a global academic consortium of cardiovascular polypill trials, and is also the study director for TRIUMPH (a randomised trial of a low-dose triple anti-hypertensive pill in Indian patients).

Jacqui Webster



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Project: HT09: Developing the evidence base for a national salt reduction program for India

HT10: Cost effectiveness of salt reduction interventions in Pacific Islands

Jacqui is currently Director of the WHO Collaborating Centre on Salt Reduction in the Food Policy Division at the George Institute for Global Health with a remit to support countries to achieve the global target of a 30% reduction in salt by 2025. Her primary research interest relates to the development and evaluation of population strategies to reduce salt intake.

Karen Yeates



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Project: HT03: DREAM-GLOBAL: Diagnosing hypertension - Engaging Action and Management in Getting Lower Bp in Aboriginal and LMIC

Karen Yeates is a graduate of Queen's Medical School and received Internal Medicine training in Toronto. She then completed a fellowship in Nephrology at Queen's combined with a Master in Public Health from Harvard University. She is a Staff Nephrologist and Assistant Professor in the Department of Medicine at Queen's University and is co-founder and co-director of the School of Medicine Office of Global Health.

She is an implementation science researcher that runs a research program in Tanzania in collaboration with the Office of Global health at Queen's University. Most of her projects are in prevention, detection and management of NCD's and have community-based mHealth components.

Christina Zarowsky



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Project: DM03: IINDIAGO (Integrated INTERvention for DIABetes risk after GestatiONal diabetes): An integrated health system intervention aimed at reducing type 2 diabetes risk in disadvantaged women after gestational diabetes in South Africa

Christina is a public health physician and anthropologist. Her research is in global health, equity-focused health policy and systems/implementation research and capacity strengthening with particular interests in vulnerability/resilience, continuity of care, migration, maternal health and "HIV in context" including as a chronic disease. She works primarily in Africa.

Puhong Zhang



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Project: DM02: Systematic Medical Assessment, Referral and Treatment for Diabetes care in China using Lay Family Health Promoters - SMART Diabetes

Puhong has a doctorate in Epidemiology and Biostatistics, and has been working on NCD prevention and control for more than 10 years. As the head of Diabetes Research Program and the acting head of China Center for mHealth Innovation, he is now extremely interested in mHealth as a tool in the fight against the burden of NCDs. University of Montreal, Centre de recherche du CHUM

Jiachen Zhou



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Project: DM02: Systematic Medical Assessment, Referral and Treatment for Diabetes care in China using Lay Family Health Promoters - SMART Diabetes

Jiachen received his PhD in Epidemiology from Brown University and had worked as an R&D scientist at Philips Electronics Telemedicine Division. Recently, Jiachen joined the George Institute, dedicated to improving community health care in China through the study and development of affordable and sustainable mobile health interventions.

Funding Agency Representatives

Carlos Aguilar-Salinas



Instituto Nacional de Ciencias Medicas y Nutricion Salvador Zubiran
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Project: DM11: Desarrollo y validación de un software ligado a un portal de internet que facilite el tratamiento médico y el empoderamiento del paciente con diabetes tipo 2, la interacción con el personal médico y la generación de un registro en tiempo real [Development and validation of software to provide medical treatment and patient empowerment to type 2 diabetics, through interaction with medical staff and real-time recording]

Dr Aguilar Salinas is coordinator of the Lipid Clinic of the Instituto Nacional de Ciencias Medicas y Nutricion (INCMNSZ), Mexico City, and a specialist in internal medicine and endocrinology by the INCMNSZ. He undertook postgraduate training at Washington University, School of Medicine, St. Louis MO, USA). Dr Aguilar Salinas research interest includes the epidemiology, pathophysiology and treatment of the dyslipidemias, diabetes and components of the metabolic syndrome. Dr Aguilar-Salinas team has participated in three genome wide association studies that identified the main susceptibility genes for type 2 diabetes and dyslipidemias in Mexican mestizos. He is a member of the Mexican Academy of Medicine.

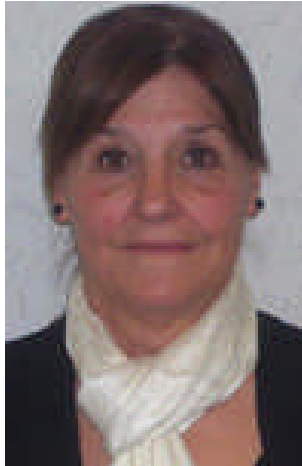
Karim Berkouk



European Commission
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Dr. Karim Berkouk is the deputy head of unit of the European Commission Non-communicable Diseases and the Challenge of Healthy Ageing Unit in the Health Directorate of the Research & Innovation DG. He develops and implements research policies on ageing, cancer, brain, cardiovascular, chronic diseases, diabetes and obesity. Previously, he was head of sector for the EC Marie Curie Actions. Prior joining the EC, he held various research positions on prosthesis specific to patients, improvement of nuclear brain images and brain connectivity, respectively in Exeter (UK), the French National Institute of Health and Medical Research (INSERM, FR) and Cambridge (UK). He graduated in fluid mechanics at the University of Paul Sabatier (Toulouse, FR) and holds a PhD in bio-fluid mechanics from the University of Warwick (UK), where he developed a new mathematical model for the understanding of the pathogenesis of Syringomyelia, a rare disease of the spinal cord.

Margarita Calleja



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Margarita Irene Calleja y Quevedo is a mathematician by background. She has worked in academia for 25 years before joining Conacyt, the Mexican National Council for Science and Technology.

Margarita is the Director of Applied Research and holds the post of Technical Secretary with responsibility for managing a diverse programme of funds in the areas of aerospace, environment, water, health, social development, educational infrastructure, women and dwelling.

Nancy Edwards



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Nancy Edwards is a Distinguished Professor, University of Ottawa, and Full Professor in the School of Nursing. She was appointed Scientific Director, Institute of Population and Public Health, Canadian Institutes of Health Research in July, 2008. Nancy is also the Chair of the GACD Management Committee.

Roger Glass



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Dr Glass is the Director of the Fogarty International Center and Associate Director for International Research at the National Institutes of Health. Dr Glass' research interests are in the prevention of gastroenteritis from rotaviruses through the use of vaccines. Dr Glass has published more than 600 research papers and chapters.

Greg Hallen



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Greg Hallen leads the Food, Environment and Health program at Canada's International Development Research Centre. He has expertise in tobacco control and public health nutrition. Greg is proud to have led and maintained IDRC's focus on population-level intervention research for the prevention of non-communicable disease risk factors in low- and middle-income countries: A focus maintained throughout his career. Greg holds a master's degree in nutrition and dietetics and a science degree, both from the University of Sydney, and a graduate diploma of education from Charles Sturt University (Australia).

Alex Harris



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Alex joined the UK Research Councils in 2008 and has since held positions at both the Science and Technology Facilities Council (STFC) and the Medical Research Council (MRC). In 2013, Alex was appointed MRC International Strategy Manager. In this role he is responsible for the management of the MRC's GACD Call for Diabetes Research Proposals.

Maira Karosuo



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Flora Katz



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Dr Louw has been involved in diabetes research for 25 years and specialises in disease prevention, the development of new therapeutics from plants, as well as foetal programming. Recent projects have involved identifying subcellular markers for early detection of diabetes, and the isolation of novel compounds with the potential of protecting pancreatic beta cells. He heads a multidisciplinary team, and actively collaborates with many local and international research organisations.

Johan Louw



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Dr Louw has been involved in diabetes research for 25 years and specialises in disease prevention, the development of new therapeutics from plants, as well as foetal programming. Recent projects have involved identifying subcellular markers for early detection of diabetes, and the isolation of novel compounds with the potential of protecting pancreatic beta cells. He heads a multidisciplinary team, and actively collaborates with many local and international research organisations.

Prashant Mathur



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Dr Mathur is a Pediatrician who completed his PhD in Pediatric Gastroenterology & Hepatology from the All India Institute of Medical Sciences, New Delhi. He has received training in clinical epidemiology, qualitative research methods and program evaluation. His research interests include viral hepatitis, liver failure, chronic liver diseases and metabolic liver diseases. He coordinated various multicentric studies on program evaluation related to polio elimination in the country. At the ICMR he is Program Officer for research in the areas of Noncommunicable Disease Surveillance, Obesity & Metabolic Syndrome, Chronic Disease Epidemiology, Gastroenterology and Tobacco. He has worked closely with the WHO Offices of the South East Region and India Office, including serving as Temporary International Professional with the WHO South East Regional Office, New Delhi and has worked on Capacity Assessment for NCD Prevention and Control and Analysis of NCD related Policies in SEAR Countries.

Salina Waddy



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Project: HT15: Tailored Hospital-based Risk Reduction to Impede Vascular Events after Stroke (THRIVES)

Dr. Salina Waddy is a stroke neurologist and neurogeneticist who is the Health Disparities Program Director in the Office of Clinical Research at the National Institutes of Health. Her areas of interest are health disparities, issues related to stroke and the genetic determinants of stroke, as well as predictive health.

Tony Willis



*National Health and Medical Research Council
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Dr Tony Willis is Executive Director, Research Programs Branch at the National Health and Medical Research Council (NHMRC). He completed a PhD at the Australian National University in 1994, before moving to Imperial College, London. On returning to Australia he worked as a research scientist, before moving into the public sector. He has held appointments in the Departments of Health, Foreign Affairs and Trade, and the Department of the Prime Minister and Cabinet. He joined NHMRC in March 2010.

GACD Secretariat

Faye Bassett



Executive Coordinator, GACD Secretariat
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Faye works jointly with the GACD and its host institution, the UCL Institute for Global Health, to provide key administrative support and operations management. Specifically for GACD, she provides Board and committee support to coordinate and document GACD meetings, and leads on the logistical and HR aspects of all GACD activities.

Celina Gorre



Executive Director, GACD Secretariat
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Celina Gorre is the Executive Director of the Global Alliance for Chronic Diseases. In that role, she heads up the GACD Secretariat team based at UCL in London. Previously, Celina was the Managing Director of the Foundation for the United Nations Global Compact. From 2007-2009, Celina was in the field with UNFPA and UNICEF in Angola as a Senior HIV/AIDS Advisor, advising the government of Angola on its HIV strategy, child survival and nutrition programmes, and companies on their social and community investments.

Dorothea Kanthack-Chan



Senior Programme Officer, GACD Secretariat
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Dorothea Kanthack-Chan coordinates the joint activities of the GACD member agencies, which includes the support of Board and Management Committee activities such as research call development and joint peer review. In addition, she supports the Executive Director in the implementation of the strategic plan of the GACD.

Gary Parker



*Research Coordinator, GACD Secretariat
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Gary is responsible for managing the joint activities of the funded research teams, particularly concentrating on the strategic, logistical and research management of the GACD research network. Gary holds a Masters in Research Psychology from the University of KwaZulu-Natal, focusing on social network correlates of HIV voluntary counselling and testing.

Simon Thompson



*Former Research Coordinator, GACD Secretariat
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Simon Thompson is consulting for the GACD in his capacity as previous Research Coordinator for the GACD 2014-15. He now work at Genomics England. Simon completed a PhD in Cardiovascular Genetics from UCL, studying the importance of genetic variation in an inflammatory regulator on risk of heart disease.

Project Updates

DM01: Improving the management of Diabetes in Pregnancy in Remote Australia

Funded by: NHMRC; Duration: 5 years

Study location: Australia

Investigators

PI

Louise Maple-Brown, Menzies School of Health Research, Darwin, Australia

Research team

Federica Barzi, Menzies School of Health Research, Australia

Jacqueline Boyle, Monash University, Australia

Alex Brown, University of South Australia, Australia

Christine Connors, Top End Health Services, Australia

Sumaria Corpus, NT Department of Lands and Planning, Australia

Anthony Hanley, University of Toronto, Canada

Stewart Harris, Australia

Robyn McDermott, University of South Australia, Australia

David McIntyre, University of Queensland, Australia

Anna McLean, Cairns Diabetes Centre, Australia

Jacki Mein, Apunipima Cape York Health Council, Australia

Elizabeth Moore, Aboriginal Medical Services Alliance Northern Territory, Australia

Jeremy Oats, University of Melbourne, Australia

Kerin O'Dea, University of South Australia, Australia

Jonathan Shaw, Baker IDI Heart and Diabetes Institute Holdings, Australia

Ashim Sinha, Cairns Hospital, Australia

Mark Wenitong, Apunipima Cape York Health Council, Australia

Cherie Whitbread, Menzies School of Health Research, Australia

Paul Zimmet, Baker IDI Heart and Diabetes Institute Holdings, Australia

Abstract:

Primary research aim

To improve systems of care and services for women with diabetes in pregnancy in remote Australia.

Research objectives and methodology

- To expand the Northern Territory (NT) Diabetes in pregnancy (DIP) Clinical Register across all regions of the NT, thereby scaling-up and extending coverage of an innovative clinical system.
- To establish a DIP Clinical Register in Far North Queensland (FNQ).
- To develop, expand and extend an enhanced model of care and augment health care professionals' capacity for managing DIP across all regions of the NT and FNQ.
- To improve maternal health post-partum for NT and FNQ Indigenous women with DIP with a systems-based intervention.
- To build capacity in Indigenous health research and share knowledge with Canadian researchers in the field of diabetes and DIP among Indigenous populations.

Current status

Project funding to commence in October 2015. Currently submitting ethics applications and recruiting staff to commence late 2015.

DM02: Systematic Medical Assessment, Referral and Treatment for Diabetes care in China using Lay Family Health Promoters - SMART Diabetes

Funded by: CAMS, NHMRC; Duration: 4 years

Study location: China

Investigators

PIs

David Peiris, The George Institute for Global Health, Sydney, Australia

Puhong Zhang, The George Institute for Global Health - China, Beijing, China

Weigang Zhao, Peking Union Medical College Hospital, Beijing, China

Research team

Beverly Essue, The University of Sydney, Sydney, Australia

Stephen Jan, The George Institute for Global Health, Sydney, Australia

Linong Ji, Peking University People's Hospital, Beijing, China

Junfeng Xu, Beijing Municipal Health Bureau, Beijing, China

Zhenyu Liang, Chinese Center for Disease Control and Prevention, Beijing, China

Yu Liu, Beihang University, Beijing, China

Serigne Lo, The George Institute for Global Health, Sydney, Australia

Anushka Patel, The George Institute for Global Health, Sydney, Australia

Jiachen Zhou, The George Institute for Global Health - China, Beijing, China

Maoyi Tian, The George Institute for Global Health - China, Beijing, China

Lei Sun, The George Institute for Global Health - China, Beijing, China

Abstract:

Primary research aim

To develop the SMARTHealth Diabetes system and determine its clinical impact for people with T2DM.

Secondary research aims

To conduct process and economic evaluations to understand intervention impact on patients, family health promoters (FHPs) and community healthcare providers, and to determine cost-effectiveness and scale-up opportunities. FHPs are lay family members who are willing to take the responsibility of supporting the disease/health management for the patients.

Research objectives and methodology

An interactive mobile health management system can support FHPs and community healthcare providers to improve clinical outcomes for patients with T2DM. This system will be affordable, acceptable and potentially scalable across China. After intervention development, a large-scale cluster randomised controlled trial will be conducted.

Current status

The study has been approved by the IRB of Peking University.

A working team for the development of the prototype of SMARTHealth Diabetes has been established and is ready to conduct barrier investigation among policy makers, community healthcare providers, patients and FHPs.

DM03: IINDIAGO (Integrated Intervention for DIAbetes risk after GestatiOnal diabetes): An integrated health system intervention aimed at reducing type 2 diabetes risk in disadvantaged women after gestational diabetes in South Africa

Funded by: CIHR, IDRC, MRC-SA; Duration: 5 years

Study location: South Africa

Investigators

PIs

Naomi Levitt, University of Cape Town, Cape Town, South Africa

Christina Zarowsky, Centre de recherche du Centre hospitalier de l'Université de Montréal, Montreal, Canada

Research team

Lara Fairall, University of Cape Town, Cape Town, South Africa

Vicki Lambert, University of Cape Town, Cape Town, South Africa

Katherine Murphy, University of Cape Town, Cape Town, South Africa

Krisela Steyn, University of Cape Town, Cape Town, South Africa

Mark Tomlinson, Stellenbosch University, Stellenbosch, South Africa

Shane Norris, University of the Witwatersrand, Johannesburg, South Africa

Carl Lombard, South African Medical Research Council, Cape Town, South Africa

Abstract:

Primary research aim

To develop and evaluate a novel health system intervention to reduce the subsequent risk of developing T2D among women with recent gestational diabetes.

Secondary research aim

To identify opportunities and barriers to subsequent scale-up and sustainability within routine, community-based primary health care services.

Research objectives and methodology

- To assess the feasibility and acceptability of the proposed intervention among both women and healthcare providers and managers, through formative research and evaluation. The formative research, as well as the on-going process evaluation during the trial, will use qualitative methodologies and be based on conceptual and methodological frameworks from health systems and implementation research and will be informed by applied social science models.
- To develop and implement a novel health system intervention package for women with recent gestational diabetes, that links existing public hospital-based antenatal care with postnatal community-based care at well baby clinics and which incorporates postpartum screening and evidence-based brief behaviour change counselling on the lifestyle risk factors for diabetes.
- To evaluate the risk for diabetes and its risk factors at baseline and at 12 months post-partum.
- To assess the process of implementation, including the possible system facilitators and barriers to integrating the intervention into routine, community-based primary healthcare services should the pilot prove successful.
- To assess the cost-effectiveness of the proposed intervention package.

Current status

Ethics clearance has been obtained at UCT and Wits University, for the overall project and the formative research. Formative research is currently underway - to document current policy, practice and trends in management of GDM and follow-up of women after delivery; explore women's

preferences and realities to inform the diabetes prevention intervention; and explore the perspectives of key stakeholders in the health sector regarding implementation and eventual scale up of the intervention. PhD and MPH students have been identified and scholarships awarded.

DM04: Community Health Assessment Program in the Philippines (CHAPP)

Funded by: CIHR, IDRC; *Duration:* 5 years

Study location: Philippines

Investigators

PIs

Fortunato Cristobal, Ateneo de Zamboanga University, Zamboanga, Philippines

Lisa Dolovich, McMaster University, Hamilton, Canada

Gina Agarwal, McMaster University, Hamilton, Canada

*Ricardo Angeles, Ateneo de Zamboanga University, Zamboanga, Philippines
and McMaster University, Hamilton, Canada*

Janusz Kaczorowski, University of Montreal, Montreal, Canada

Research team

Rodelin Agbulos, Zamboanga City Health Office, Zamboanga, Philippines

Rosemarie Arciaga, Ateneo de Zamboanga University, Zamboanga, Philippines

Jerome Barrera, Ateneo de Zamboanga University, Zamboanga, Philippines

Agnes Fernando, Department of Health Philippines, Manila, Philippines

Dale Guenter, McMaster University, Hamilton, Canada

Servando Halili, Ateneo de Zamboanga University, Zamboanga, Philippines

Norvie Jalani, Department of Health Philippines, Manila, Philippines

Daria O'Reilly, McMaster University, Hamilton, Canada

John Smith, Khon Kaen University, Khon Kaen, Thailand

Karl Stobbe, McMaster University, Hamilton, Canada

Lehana Thabane, McMaster University, Hamilton, Canada

Sheldon Tobe, Sunnybrook Research Institute, Toronto, Canada

Abstract:

Primary research aim

To adapt the elements of the expanded Cardiovascular Health Awareness Program (CHAP) intervention model to low- and middle-income countries (LMICs) and evaluate its effectiveness in preventing diabetes and its complications

Secondary research aims

To foster uptake of findings from the CHAPP program to other organizations and groups in the Philippines and other LMICs

Research objectives and methodology

1. To identify optimal ways to adapt elements of the CHAP model to fit local LMIC conditions (sociocultural, economic, environmental) while focussing on the prevention and management of diabetes.
 2. To evaluate the effectiveness, feasibility/acceptability, and cost-effectiveness of the CHAPP intervention for use in rural communities in LMICs.
- Methodologies: We will use a mixed-methods approach in multiple phases.

Phase 1: Adaptation of CHAPP to the sociocultural and economic setting

- Design: Qualitative inquiry to modify and incorporate the CHAP intervention model to best fit the local setting in Zamboanga Peninsula.

- Participants: Department of Health Personnel; Provincial Health Office Personnel; Municipal Mayor and barangay (local term for a small village) officials; Municipal Health Officers, Public Health Nurses and Midwives; Local Lead Organization representatives; CHAPP target participants (residents 40 years and older). Three municipalities will be selected from each province for the KII.
- Research Instruments: Interview guides for use in individual and group interviews, document abstraction forms (to be developed once key documents have been identified).
- Data Gathering Procedure: Document review, Key Informant Interviews (KII), Focus Group Discussions (FGDs), and directed exercises (free listing, pile sort and taxonomy building).
- Data analysis and outcome: Thematic Framework Analysis (CITE).

Phase 2: Pilot project of CHAPP in selected rural communities

- Design: 6-month prospective pilot project. The CHAPP intervention protocol developed in phase 1 will be pilot tested in selected municipalities in the Zamboanga Peninsula.
- Objective: To pilot test feasibility of the CHAPP
- The setting and study population: Two eligible communities Region IX. Target participants are permanent resident of qualified municipalities 40 years and older.
- Community Participant Sampling: Cluster random sample of 400 residents 40 years of age and older will be generated for each pilot Municipality.
- Other participants: CHAPP Local Lead Organizations (LLO) and volunteers, selected CHAPP participants, health workers (doctor, nurse, midwife).
- CHAPP intervention: The proposed CHAPP intervention will include:
 - Diabetes risk assessment (modified FINRISK and assessment of lifestyle risk behaviours) sessions at least every 2 weeks in accessible community locations, manned by trained volunteers of LLO
 - Volunteers educate CHAPP participants regarding their diabetes risk factors and ways to practice healthy lifestyle (including referral to local resources/activities) using diabetes education materials adapted for local context
 - Use of an accepted process to have participant data transmitted to a central web database system through a combination of cell-phone and computer-based technology
 - Have participant assessment result forwarded to the Municipal Health Officer (doctor) for follow-up and screening
- Data Gathering Procedures: Participant survey (risk profile, physical activity, diet), data collected during CHAPP sessions, Community Process Evaluation
- Data Analysis and Outcomes: Ease of conduct, difficulties encounters, revisions needed

Phase 3: Effectiveness of CHAPP

- Design: Stepped Wedge cluster RCT
- Objective: To determine if CHAPP program will significantly improve behaviours related to the prevention and treatment (physical activity, diet, medication use for diabetic patients) of diabetes among residents 40 years of age and older compared to usual care.
- Randomization: The CHAPP will be implemented in 20 communities that will be randomly selected, stratified by district and population size and randomly assigned to 1 of 4 wedges (5 communities per wedge).
- Participant sampling: A cluster random sample of 400 residents 40 years of age and older will be generated for each of the 20 Municipalities at the onset.
- Intervention: The CHAPP intervention will be implemented during intervention periods of selected communities. During control periods, communities will follow usual practice.
- Research Instruments: Same research instruments will be used as in Phase 2
- Primary outcome: For the general population, outcomes that will be assessed are physical activity measured by the International Physical Activity Questionnaire (IPAQ), Diet measured

by the portions of the diet survey lines from the Behavioral Risk Factor Surveillance System (BRFSS) questionnaire. For diagnosed diabetics, outcome will also include medication compliance.

- Secondary outcomes: Hospital admission rates and mortality rates due to diabetes and diabetes-related illness (based on International Classification of Disease-9 codes), number of newly diagnosed residents with diabetes, and changes in the BP and BMI of CHAPP participants.
- Data collection: All data collection procedures will be similar to Phase 2 or may be modified based on the results of the pilot study and advice from the Advisory Committee.
- Statistical analysis: The primary analysis will be to compare communities receiving the CHAPP intervention to those receiving regular care according to the stepped wedge schedule.

Phase 4: Knowledge Translation Activities

Current status

Phase 1 of the project has received REB approval in the Philippines and Canada and is underway. Qualitative analysis of initial community interviews has begun leading to iterative development of the interview guide and identification of CHAP adaptations and initial barriers and facilitators to program implementation in the Philippines. The project team members from the Philippines and Canada have had two face-to-face planning meetings.

Publications:

Agarwal G, Angeles RN, McDonough B, McLeod B, Marzanek F, Pirrie M et al. Development of a community health and wellness pilot in a subsidised seniors' apartment building in Hamilton, Ontario: Community Health Awareness Program delivered by Emergency Medical Services (CHAP-EMS). *BMC Res Notes*. 2015;8:113. doi:10.1186/s13104-015-1061-8.

Kaczorowski J, Chambers LW, Dolovich L, Paterson JM, Karwalajtys T, Gierman T et al. Improving cardiovascular health at population level: 39 community cluster randomised trial of Cardiovascular Health Awareness Program (CHAP). *Bmj*. 2011;342:d442. doi:10.1136/bmj.d442.

Kaczorowski J, Chambers LW, Karwalajtys T, Dolovich L, Farrell B, McDonough B et al. Cardiovascular Health Awareness Program (CHAP): a community cluster-randomised trial among elderly Canadians. *Prev Med*. 2008;46(6):537-44. doi:10.1016/j.ypmed.2008.02.005.

DM05: Effects of information technology-based tools on long-term self management of diabetic and non-diabetic patients with coronary heart disease

Funded by: CAMS; Duration: 3 years

Study location: China

Investigators

PIs

Jing Li, National Center for Cardiovascular Diseases, China, Beijing, China

Weigang Zhao, Peking Union Medical College Hospital, Beijing, China

DM06: iHEALTH-T2D - Family-based intervention to improve healthy lifestyle and prevent Type 2 Diabetes amongst South Asians with central obesity and prediabetes

Funded by: EC; Duration: 5 years

Study location: India, Pakistan, Sri Lanka, United Kingdom

Investigators

PI

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Research team

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Abstract:

Primary research aim

Determine whether a family-based lifestyle modification delivered by community health workers vs usual care is clinically- and cost-effective for prevention and risk reduction of T2D.

Secondary research aims

Assess effects on adiposity measures, glucose metabolism and other measures of well-being in the index case and family members.

Research objectives and methodology

General aim

Our goal is to develop approaches to health promotion through lifestyle modification (healthy diet, increased physical activity) that are acceptable, effective and efficient for prevention of T2D in South Asian communities from diverse settings, for scale-up across the Indian subcontinent and Europe. iHealth-T2D will study men and women from the Indian subcontinent (India, Pakistan and Sri Lanka), as well as Europe (UK) to provide evidence about the implementation of lifestyle modifications in

both high and low income settings. We will enrol men and women equally, in rural and urban settings, and across a range of socio-economic classes, to reduce inequalities. We will use focus groups, and the experience and knowledge of local leaders and local experts to develop approaches that are culturally appropriate, acceptable, sustainable and scalable amongst all segments of the community.

We will determine the factors that influence participation in and benefit from health promotion. We will thereby identify the obstacles that underlie inequities and gender gaps, and the barriers and facilitators that inhibit or strengthen local and national implementation. Our approach is thus carefully designed to be equitable and reduce gender, social and socio-economic inequalities in health promotion, locally, nationally and globally. We will complete a detailed health economic analysis of our approaches to implementation of lifestyle modification. This will include assessment of incremental value, and potential ethical, legal, regulatory, social and economic implications of scaling up at the local, regional and national levels.

The findings will provide objective evidence to enable local and national experts and policy makers to scale up intervention in a sustainable way, and to translate and embed the findings from our research into clinical practice and policy, and thereby help reverse the epidemic of T2D amongst South Asians.

Specific aims

1. Determine whether family-based lifestyle modification vs usual care reduces risk of T2D (primary endpoint) amongst South Asians with i. central obesity; ii. prediabetes and iii. overall (with central obesity and / or obesity). Compare effectiveness of the intervention between groups.
2. Investigate secondary endpoints, including health gains in family members. Identify social, demographic and environmental factors influencing primary and secondary endpoints.
3. Carry out a health economic analysis of family-based lifestyle modifications vs usual care for prevention of T2D on the Indian subcontinent and Europe. Quantify the cost-effectiveness of screening by waist circumference vs HbA1c.
4. Assess incremental value, and potential ethical, legal, regulatory, social and economic implications of scaling up locally and nationally.

Methodology

We have developed and evaluated a family-based intervention for health promotion amongst UK South Asians with central obesity. The intervention is closely based on established, successful protocols for prevention of T2D through weight loss in Europeans, but has been culturally adapted for South Asians (e.g. detailed food composition tables that capture customary diet, and translation of materials into relevant languages). Family members of the index obese South Asian are strongly encouraged to join the program, in particular children and the family cook(s). The ambition is for the family to take joint responsibility for change to a healthy lifestyle, supporting and guiding the obese index case in making healthy choices, and maintaining long-term engagement in the lifestyle intervention program. The target is for the index case to avoid new onset of T2D as defined by the primary endpoint, through a combination of reduced calorific intake, lower consumption of fat and refined sugars, and increased physical activity (150 minutes of moderate physical activity per week). Family members are also encouraged to make healthier choices.

Lifestyle modification is delivered over 22 contact sessions (weekly for 3 months, then every 4 weeks for 9 months). Sessions are delivered in the family home and community settings, by affordable community health workers from a range of healthcare backgrounds. The initial session focuses on education around obesity and diabetes for the whole family. Subsequent sessions focus on implementation of healthy diet and increased physical activity, and are attended by the index case and family members. Nutritional education is focused on the shopper and cook of the family, with

attention to cooking methods, portion size, food choices, amount of fat used in cooking and encouraging foods high in dietary fibre.

Work Package summary and interaction

The study will be delivered through 8 interlinked work packages. Below is a summary of the work packages' structure.

1. Co-ordination and management

WP1 will deal with Project and Scientific management including: i. overall direction and conduct of the research, ii co-ordination between work packages and partners,, iii. ensuring the research is completed to time and budget , iv creation of the study website, v. data management, vi. ethics and research governance, vii. Clinical trial co-ordination and documentation viii, contributing to dissemination activities, ix public engagement and x. periodic and final reporting to the European Commission,

2. Pilot and preparatory work.

In WP2 we will adapt our existing protocols for family-based intervention for use amongst South Asians in diverse settings on the Indian subcontinent. We will engage with local investigators, local communities and relevant experts in the process, including through focus groups. We will pilot the approaches locally to ensure they are feasible, culturally acceptable, and have potential for scalability.

3. Cluster randomised clinical trial

In WP3 we will recruit 3,600 South Asian men and women aged 40-70 years with i. central obesity (waist \geq 100 cm) and/or ii. prediabetes (HbA1c 6.0-6.4%) to the study (index cases). Recruitment will be from the Indian subcontinent (India, Pakistan, Sri Lanka) and Europe (UK). In WP4 index cases will receive either i. family-based lifestyle modification (N=1,800); or ii. usual care (N=1,800). Family-based intervention will comprise 22 sessions of lifestyle modification over 12 months, delivered by a community health worker, and involving available family members. Usual care group will comprise one diabetes prevention session and written material. WP5 will deliver annual follow-up of the index cases for three years to identify new-onset T2D (primary endpoint, HbA1c \geq 6.5%). Secondary outcome measures will include a range of clinical, lifestyle, psychosocial, biochemical and healthcare utilisation measures. Similar baseline and outcome assessments will be completed amongst a representative sample of spouses and children (>18 years) of index cases in the family-based intervention group, to ascertain the impact of the intervention on the wider family.

4. Data analysis and health economic analysis

WP6 and 7 will be responsible for data and health economic analysis of the clinical trial data respectively. The primary analyses will determine the clinical and cost-effectiveness of family-based intensive lifestyle modification vs usual care for prevention of T2D amongst South Asians with i. central obesity; ii. prediabetes or iii, overall. Secondary analyses will address behavioural, psychosocial, clinical, and biochemical measures similarly. All analyses will be intention to treat. Health economic analyses will take account of costs incurred by the government, participants and their families. Effectiveness will be measured in terms of screening numbers needed to identify one case of 'high risk' for developing diabetes, and numbers needed to treat to prevent or delay one case of diabetes. Sensitivity analysis will be undertaken to test the robustness of the analysis in terms of the cost inputs and health outcomes.

5. Dissemination and exploitation

WP8 is dedicated to dissemination and exploitation of the findings, with a view to translating and embedding the positive results into policy and practice. Approaches will include publication of findings, open access presentation of results via the study website, and dissemination to local, national and international bodies responsible for T2D prevention. Interaction with the policy makers is greatly strengthened by the involvement of key national and international opinion leaders as co-investigators. Extensive health economic evaluation will provide high quality information to enable decision-making and exploitation by policy-makers, funders and healthcare providers.

Current status

We are currently customising and finalising the protocol and supporting documents for recruitment, intervention and follow-up of participants, as well as the documents required for submission to the respective Research Ethics Committees. This is expected to be complete by October 2015. The study database is under construction and will be completed by Q4 2015. We anticipate field work starting in Q1 2016, as soon as ethical approval is obtained.

Publications:

Chambers JC, Abbott J, Zhang W, Turro E, Scott WR, Tan ST et al. The South Asian genome. PLoS One. 2014;9(8):e102645. doi:10.1371/journal.pone.0102645.

Chambers JC, Elliott P, Zabaneh D, Zhang W, Li Y, Froguel P et al. Common genetic variation near MC4R is associated with waist circumference and insulin resistance. Nat Genet. 2008;40(6):716-8. doi:10.1038/ng.156.

Chambers JC, Loh M, Lehne B, Drong A, Kriebel J, Motta V et al. Epigenome-wide association of DNA methylation markers in peripheral blood from Indian Asians and Europeans with incident type 2 diabetes: a nested case-control study. Lancet Diabetes Endocrinol. 2015;3(7):526-34. doi:10.1016/S2213-8587(15)00127-8.

Chambers JC, Zhang W, Zabaneh D, Sehmi J, Jain P, McCarthy MI et al. Common genetic variation near melatonin receptor MTNR1B contributes to raised plasma glucose and increased risk of type 2 diabetes among Indian Asians and European Caucasians. Diabetes. 2009;58(11):2703-8. doi:10.2337/db08-1805.

DM07: SMART2D - A people-centred approach through Self-Management and Reciprocal learning for the prevention and management of Type-2-Diabetes

Funded by: EC; Duration: 4 years

Study locations: South Africa, Sweden, Uganda

Investigators and research teams

PIs

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Pilvikki Absetz, Collaborative Care Systems Finland, Helsinki, Finland

Wim Van Damme, Institute of Tropical Medicine, Antwerp, Belgium

Meena Daivadanam, Uppsala University, Uppsala, Sweden

Stefan Peterson, Karolinska Institutet, Stockholm, Sweden & Uppsala University, Uppsala, Sweden (Overall PI)

Research team

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Göran Tomson, Karolinska Institutet, Stockholm, Sweden

Helle M. Alvesson, Karolinska Institutet, Stockholm, Sweden

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Juliet Aweko, Karolinska Institutet, Stockholm, Sweden

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Abstract:

Problem statement and overall aim

Formal Health Services will be overwhelmed by the magnitude of the T2DM burden. In addition healthcare services are often poorly accessible, acceptable, available, affordable or adequate (5As of access) to the needs of the target population in low- and middle-income countries and, especially among the urban vulnerable immigrant groups, in high-income countries, resulting in poor prevention and management of T2DM.

Our overall aim therefore is to strengthen capacity for T2DM care (both prevention and management), through proven strategies like task-shifting to non-physician health care providers and community health workers, and expanding care networks through community-based peer support groups. Our target population is adult men and women at high-risk for or diagnosed with T2DM, *i.e.*, individuals with pre-diabetes and diabetes in the three settings.

To this end, we propose the following **overall** and **specific objectives**:

Primary research objectives

- *To formulate and implement* a contextually appropriate self-management approach through facility and community components for prevention and control of T2DM in three settings
- *To evaluate* the outcome of the self-management approach and the added benefit of the community component compared to the facility component; and in dialogue with stakeholders
- *To translate* the research findings at each stage into relevant input for national guidelines and policies in each setting and for reciprocal transfer of knowledge across sites.

Study settings

In order to demonstrate the feasibility of this project in diverse settings, the proposed project will have three field sites: 1) The Iganga-Mayuge Health & Demographic Surveillance Site (IMHDSS), which is a largely rural setting in eastern Uganda, a low-income country; 2) Langa and Khayelitsha in South Africa, representing urban townships in a middle-income country; and 3) four urban communities in Stockholm county with a predominant immigrant population representing vulnerable urban groups in Sweden, a high-income country.

Current status

The project was officially launched in March, 2015 in Cape Town, South Africa. We are currently in the formative phase and our working groups on realist synthesis and cross-lessons led by Thandi Puoane and Josefien Van Olmen respectively are busy collating information that can be fed into the intervention phase. Literature reviews are underway for the local site contexts for diabetes, and for cross-lessons from other diseases that may be applicable to diabetes. Interviews and focus group discussions are also on-going at all three field sites, with individuals with diabetes or pre-diabetes, community members, and healthcare providers, coordinated by Peter Delobelle in South Africa, Helle M. Alvensson in Sweden and Juliet Kiguli in Uganda. This work is expected to finish by the end of the year.

Concurrently, preparation work has also begun for the intervention phase, which is expected to start by mid-2016. The intervention development team led by Pilvikki Absetz are using the preliminary results of the reviews and interviews, to formulate context-specific intervention strategies and this process will continue throughout the formative phase. Discussion on study design and implementation issues related to the intervention trial are also underway led by David Guwatudde and Meena Daivadanam and the working groups for the same are currently being formulated. The work package on continuous policy dialogue led by Göran Tomson has also been active in improving the local visibility of SMART2D among policy makers and together with Stefan Peterson and the research teams in Uganda and South Africa have been successful in identifying local and international collaborations and partnerships for SMART2D, such as the [4D project](#) in Sweden and the [Diabetes South Africa](#) and the [PURE study](#) cohort in South Africa.

DM08: Feel4Diabetes: Promoting healthy lifestyle in families across Europe

Funded by: EC; Duration: 4.5 years

Study location: Belgium, Bulgaria, Finland, Greece, Hungary, Spain

Investigators

Coordinator: Yannis Manios, Harokopio University, Athens, Greece

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Violeta Iotova, Medical University of Varna, Varna, Bulgaria

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Kostas Makrilakis, University of Athens, Athens, Greece

Remberto Martinez, Extensive Life Oy, Tampere, Finland

Luis Moreno Aznar, University of Zaragoza, Zaragoza, Spain

Lala Rabemananjara, International Diabetes Federation Europe, Brussels, Belgium

Imre Rurik, University of Debrecen, Debrecen, Hungary

Peter Schwarz, Dresden University of Technology, Dresden, Germany

Abstract:

Aim

Feel4Diabetes is aiming to develop, implement and evaluate an evidence-based and potentially cost-effective and scalable intervention program to prevent type 2 diabetes among families from vulnerable groups across Europe.

Background

Any risk factors associated with type 2 diabetes tend to cluster within a family since its members share common genetic background, lifestyle habits, social and physical environment. Promoting healthy behaviours and supportive environmental changes when the family is approached as a whole seems to be more effective compared to targeting the family members individually. Furthermore, since the prevalence of type 2 diabetes is higher in low and middle income countries and among low socioeconomic groups in the high-income countries, these vulnerable groups need to be identified and prioritized.

Methodology

Feel4Diabetes will be implemented in two high-income countries (Belgium and Finland), two countries under economic crisis (Greece and Spain) and two low/middle-income countries (Bulgaria and Hungary). During the implementation of the programme the following steps will be taken:

- Identify vulnerable groups within these six European countries. Within these subpopulation groups use schools as the entry point in the community and identify the families at high risk for type 2 diabetes.
- Using the multi-actor approach develop and implement a school and community-based intervention of low-cost and applicable in low resource settings, aiming to create a more supportive social and physical environment and promote healthy lifestyle changes for children and their families. Furthermore, invite the parents or other adult members of the high-risk families to attend out of school counseling sessions, in order to further support them in adopting a healthier lifestyle for them and their children.
- Evaluate and disseminate the results of the study and develop recommendations for health policy makers, aiming at embedding the learnings derived from the project into policies and practices on a local, national and international level.

Current status

During the first nine months of the project the following tasks have been conducted.

WP2 aimed to identify the (sub)behaviours related to risk factors for the type 2 diabetes and their barriers and facilitators. More specifically, the following deliverables were completed:

- Systematic literature review for the definition and identification of vulnerable groups.
- Systematic literature review on the most important behaviours and sub-behaviours related to risk factors for type 2 diabetes in vulnerable groups.
- Execution of focus groups with parents, grandparents, teachers and local community workers in the six intervention countries.

WP3 aimed to identify the best evidence-based strategies for the prevention of obesity and promotion of healthy eating and physical activity at school (especially in vulnerable groups), as well as those for the prevention of type 2 diabetes in high risk adults. More specifically, the following deliverables were completed:

- Review of intervention programs applied in the school setting for the prevention of obesity and the promotion of healthy lifestyle, with emphasis on vulnerable groups.
- Review of intervention programs targeting adults at high risk for type 2 diabetes.

WP4 aimed to assess policies, practices and available infrastructure in the six intervention countries. More specifically, the following deliverables were completed:

- Systematic analysis of the national type 2 diabetes prevention guidelines, policies and practices.
- Descriptive overview of available human resources and infrastructure for promoting healthy and active lifestyle in low socioeconomic status municipalities from each country.

WP5 aims to develop and test the tools to be used for the impact and outcome evaluation of the Feel4Diabetes-intervention. So far the following task has been completed:

- A workshop for the training of fieldwork personnel was conducted in Ghent, Belgium in September, 2015. During this workshop the intra- and inter- observer reliability regarding the anthropometric (weight, height, waist circumference) and clinical (blood pressure) indices was tested among fieldwork researchers from the six intervention countries.

The group is currently working on the development of the intervention material and the development and assessment of validity and test-retest reliability of the questionnaires and tools which will be used to evaluate the process and impact of the Feel4Diabetes-intervention and to assess its cost-effectiveness. The newly constructed website: www.feel4diabetes-study.eu will be continuously updated with all news and outcomes resulting from the Feel4Diabetes-study.

DM09: Evaluacion de un programa piloto de prevencion de diabetes usando tecnologias de la informacion en una poblacion basada en el sitio de trabajo [Evaluation of a pilot project to prevent diabetes in the workplace using information technology]

Funded by: CONACYT; *Duration:* 2 years

Study location: Mexico

Investigators

PI

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Abstract:

Primary research aim

Evaluate on a pilot basis the performance of a work based e-intervention to prevent diabetes using information technology as means to deliver the intervention

Secondary research aims

Explore the feasibility and scalability of an internet platform designed to intervene in a work based community in order to prevent diabetes

Research objectives and methodology

Evaluate the feasibility of using information technology resources to deliver a family centered preventive program in order to reduce the overall cardiovascular risk at work based community
Evaluate the performance of risk factors questionnaires in order to estimate overall cardiovascular risk at a work based community.

Current status

Study is in the preliminary phase.

DM10: Desarrollo de una red social interactiva para el control metabolico de los pacientes con diabetes [Development of an interactive social network for metabolic control of patients with diabetes]

Funded by: CONACYT; Duration: 2 years

Study location: Mexico

Investigators

PI

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Research team

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Leticia Neira, Universidad de Monterrey, San Pedro Garza Garcia, Mexico

Abstract:

Primary research aim

Development of an interactive social network, and use of the internet to try to change behaviors and attitudes of risk in affected Type 2 diabetes community.

Secondary research aims

Get better education level about diabetes in the community, improve care-associated behaviors and self-care.

Research objectives and methodology

- To create a virtual online community, where people with diabetes can meet other people with the same illness, and with relatives and supporters. We will then seek to have sufficient activity data and maintain community interest to meet their long-term goals.
- To use "Gamification" to create an emotive and interactive experience. Participants enter their behaviour changes, and thereby improve their activities in the game.
- To evaluate the results.

DM11: Desarrollo y validación de un software ligado a un portal de internet que facilite el tratamiento médico y el empoderamiento del paciente con diabetes tipo 2, la interacción con el personal médico y la generación de un registro en tiempo real [Development and validation of a software linked to an internet site to facilitate medical treatment and empowerment of the patient with type 2 diabetes, interaction with the medical personnel and the generation of a real time registry]

Funded by: CONACYT; Duration: 3 years

Study location: Mexico and United States

Investigators

PIs

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Research team

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Hector Velazquez-Jurado, Instituto Nacional de Ciencias Medicas y Nutricion Salvador Zubiran, Mexico City, Mexico

Arantxa Colchero, Instituto Nacional de Salud Publica, Cuernavaca, Mexico

Abstract:

Primary research aim

Create, validate and export the use of a technological tool that contributes to empowerment in patients with diabetes, the provision of care according to quality standards, and generate real-time information required to measure the effectiveness of interventions.

Secondary research aims

To have an open information system, robust and interoperable on diabetes and its comorbidities to allow recovery, handling, processing, analysis and publication of specialized information according to the newest social and semantic tools of the digital era.

Research objectives and methodology

Designing an online information system, minding primarily a database relating interventions, designed in progress or SQL permissions at different levels, allowing records, process and retrieving information at different levels:

- Medical
- Administrative
- Patient
- Curatorial

Current status

We have created the variables and modules of the following interventions: health care, nutriology, physical activity and exercise, psychology, psychiatry, dentistry, ophthalmology, foot care, diabetes education, nursing, and patient reception. We have prepared the electronic tool to ensure data consistency, upper and lower values of alerts and the format to download the information. To date, we have entered complete data from 300 patients and 280 in the process. Data have been processed according to the indicators of the National Quality Assurance Program in diabetes care.

Publications:

Hernandez-Jimenez S, Garcia-Ulloa C, Mehta R, Aguilar-Salinas CA, Kershenobich-Stalnikowitz D. Innovative models for the empowerment of patients with type 2 diabetes: the CAIPaDi program. *Recent Pat Endocr Metab Immune Drug Discov.* 2014;8(3):202-9.

DM12: Mobile phone text-messaging to support treatment for people with type 2 diabetes in sub-Saharan Africa: a pragmatic individually randomised trial

Funded by: MRC-SA, MRC-UK; *Duration:* 3.5 years

Study location: Cape Town, South Africa; Johannesburg, South Africa; Malawi

Investigators

PIs

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Shane Norris, University of the Witwatersrand, Johannesburg, South Africa

Moffat Nyirenda, London School of Hygiene and Tropical Medicine, London, United Kingdom

Research team

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Emmanuelle Daviaud, South African Medical Research Council, Cape Town, South Africa

Natalie Leon, South African Medical Research Council, Cape Town, South Africa

Lionel Tarassenko, University of Oxford, Oxford, United Kingdom

Ly-Mee Yu, University of Oxford, Oxford, United Kingdom

Abstract:

Primary research aim

The overall aim of this project is to test the effectiveness of sending short message service (SMS) texts in improving health outcomes and supporting medication adherence in patients with type 2 diabetes in the context of implementing a low-cost, mobile-health communication infrastructure in an operational setting.

Research objectives and methodology

Failure to take diabetes medicines regularly is a major problem in sub-Saharan Africa. There are many different causes for this, and more support for better use of medicines is needed. However, resources to identify and support patients who are not making best use of medicine are scarce in low-income settings. One way of getting additional help to people is through mobile phone based support. This technology is widely available in low resource settings including among people with diabetes. Linked technologies such as SMS text messaging can sometimes be successful delivering low cost interventions efficiently. However, using text messages does not work consistently and we need more information about the best messages to use and when they work best. Although there is enthusiasm for using SMS text messaging, systematic development and testing of messages is not commonly done and studies need to measure the costs and benefits of these systems.

A randomized controlled trial of SMS text messaging for people with diabetes will begin in October 2016. It will provide information about the extent to which carefully developed messages might inform people about the benefits of their diabetes treatment, and motivate and prompt them to take it regularly. We will also collect detailed information about how the systems for sending messages are set up and used in the three different health care settings. This will guide future attempts to implement similar systems more widely elsewhere and for other long-term conditions. We will carry out a detailed study of the costs of wider implementation and the potential value for money of such a system.

Participants will use the system for twelve months. The primary outcome is the change in HbA1c and the proportion of patients collecting $\geq 80\%$ of their agreed diabetes related medication. Secondary clinical outcomes are change in systolic blood pressure, proportion of participants reaching treatment goals, self-reported measures of health status, self reported medication taking, and satisfaction with care.

Current Status

In October 2015 we will start working with our clinical collaborators and patients with diabetes to ensure that the system to deliver messages, and the message content, can be used in routine clinical care. We will work with a wide group including industry and policy makers to make sure that content of the text messages is appropriate for each of the planned study sites. We will continue to work with patients, clinical staff, and the wider community during and after the main trial to see how the technology was used and how people felt about it.

Ethical and governance approvals are now in place with the sponsor (OXTREC), University of Cape Town and Western Cape. Ethical approval has been received from University of the Witwatersrand and governance approval is being sought. Ethical approval has been given in Malawi. Contracting procedures between partners and the study sponsor are nearly complete. The coordinating centre for the project will be established in Cape Town by November 2015 and local project coordinators will be in place by April 2016.

DM13: The Bangladesh D-Magic Trial. Diabetes Mellitus: Action Through Groups or Information for Better Control?

Funded by: MRC-UK; *Duration:* 3 years

Study location: Bangladesh

Investigators

PIs

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Research team

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Hassan Haghparast-Bidgoli, University College London, London, United Kingdom

Hannah Jennings, University College London, London, United Kingdom

Azad Khan, Diabetic Association of Bangladesh, Dhaka, Bangladesh

Abdul Kuddus, Diabetic Association of Bangladesh, Dhaka, Bangladesh

Joanna Morrison, University College London, London, United Kingdom

Abstract:

Primary research aim

To evaluate the impact of a) a participatory community mobilisation intervention and b) an mHealth health promotion and awareness intervention on the prevalence of intermediate hyperglycaemia and diabetes in rural Bangladesh.

Secondary research aim

To evaluate the effect of a) a participatory community mobilisation intervention and b) a mHealth health promotion and awareness intervention on:

1. Two year cumulative incidence of diabetes mellitus among individuals with intermediate hyperglycaemia
2. Chronic disease risk factors of high body mass index, hypertension and physical inactivity
3. Blood glucose testing uptake, diabetic status awareness and service utilisation

Research objectives and methodology

Project objectives are presented by project phase.

Formative Phase

1. To describe local understandings of diabetes and identify issues of stigma/status around body size, physical activity and diet among different genders.
2. To conduct an epidemiological study of diabetes and its risk factors and care-seeking in Faridpur;
3. To conduct a situation analysis and describe healthcare workers' knowledge and current practices, available equipment, current service uptake, the presence of referral systems and the use of guidelines related to diabetes in Faridpur district and compare these to international guidelines and current practice at a large national apex diabetic hospital in Dhaka.
4. To design and document the development and implementation of community mobilisation and mHealth interventions within the study context

Evaluation Phase

1. To test the effect of a participatory community mobilisation intervention and an mHealth health promotion intervention on intermediate hyperglycaemia and diabetes disease occurrence, management and risk factors in Faridpur district, Bangladesh.
2. To describe the implementation of mHealth and participatory community groups interventions in Faridpur district in terms of replication and scale up, including the necessary roles and responsibilities of different stakeholders.
3. To cost the interventions and evaluate their potential cost-effectiveness.
4. To assess equity impact (benefit incidence) of intervention in reducing diabetes and risk factors prevalence

Dissemination Phase

To promote implementation and scale-up of community interventions (as appropriate depending on evaluation findings) through public symposia, engagement with media and through academic and health policy literature.

DM14: Implementation of foot thermometry and SMS to prevent diabetic foot ulcer

Funded by: FIC, NIH; *Duration:* 2 years

Study location: Peru

Investigators

PIs

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Research team

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Katie Sacksteder, Johns Hopkins School of Public Health, Baltimore, United States

Robert H. Gilman, Johns Hopkins School of Public Health, Baltimore, United States

Maria Lazo-Porras, Universidad Peruana Cayetano Heredia, Lima, Peru

German Malaga, Universidad Peruana Cayetano Heredia, Lima, Peru

Abstract:

Primary research aim

Compare the incidence of diabetic foot ulcer (DFU) during the study between the arm that receives thermometry alone and the arm that receives thermometry + messages (SMS and voice message).

Secondary research aims

Compare compliance with foot thermometer use between the thermometry alone arm and the arm that receives thermometry + messages.

Research objectives and methodology

Objectives

1. Compare the incidence of DFU during the study between the arm that receives thermometry alone and the arm that receives thermometry + messages. We hypothesize that subjects who receive messages will have a lower incidence of DFU than the subjects who do not receive messages.
2. Compare compliance with foot thermometer use between the two arms. We hypothesize that subjects who receive SMS will be more compliant with temperature measurement.

Design

Physician-blinded, randomized, 12-month trial.

Intervention

Participants in both groups will receive enhanced education about diabetic foot ulcer at the beginning of the study and will also be provided with TempStat, equipment that capture a thermal image of feet with different colors that represent different temperatures, when a yellow spot is detected, subjects will be instructed to contact the research nurse by phone or text message. She or he will then ask about the patient's activity on the previous two days, and will then make recommendations on how to decrease activity. In addition to everything provided to the other intervention group, this enhanced intervention arm will receive SMS and voice message reminders via mobile phones five times a week at 12 o'clock during the first week and then 2 times a week until the end of the trial. These SMS and voice message will remind patients to use the TempStat and perform foot care.

Outcome

The primary outcome is foot ulceration occurring at any point during the 12 month study duration.

Current status

Recruitment

DM15: Bridging Income Generation with Group Integrated Care (BIGPIC)

Funded by: NHLBI, NIH; *Duration:* 5 years

Study location: Kenya

Investigators

PIs

Eric Finkelstein, Duke University, Durham, United States

Joseph Hogan, Brown University, Providence, United States

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Sonak Pastakia, Purdue University, West Lafayette, United States

Rajesh Vedanthan, Icahn School of Medicine at Mount Sinai, New York, United States

Research team

Benjamin Andama, Moi University, Eldoret, Kenya

Gerald Bloomfield, Duke University, Durham, United States

Allison DeLong, Brown University, Providence, United States

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Valentin Fuster, Icahn School of Medicine at Mount Sinai, New York, United States

Carol Horowitz, Icahn School of Medicine at Mount Sinai, New York, United States

Claire Kofler, Icahn School of Medicine at Mount Sinai, New York, United States

Hana Lee, Brown University, Providence, United States

Simon Manyara, Moi University, Eldoret, Kenya

Diana Menya, Moi University, Eldoret, Kenya

Violet Naanyu, Moi University, Eldoret, Kenya

Cleophas Wanyoni, Moi University, Eldoret, Kenya

Abstract:

Primary research aims

Aim 1: Identify the contextual factors, facilitators, and barriers that may impact integration of group medical visits and microfinance for CVD risk reduction, using a combination of qualitative research methods: 1) baraza (traditional community gathering) form of inquiry; and 2) focus group discussions among individuals with diabetes or at increased risk for diabetes, microfinance group members, and rural health workers.

Subsidiary Aim 1.1: Use identified facilitators and barriers to develop a contextually and culturally appropriate integrated group medical visit-microfinance model to reduce CVD risk among individuals with diabetes or at increased risk of diabetes. We will assess this model's acceptability and feasibility by conducting focus group discussions with patients, microfinance group members, and health workers.

Secondary research aim

Aim 2: Evaluate the effectiveness of group medical visits and microfinance groups for CVD risk reduction among individuals with diabetes or at increased risk for diabetes, by conducting a four-arm cluster randomized trial comparing: 1) usual clinical care; 2) usual clinical care plus microfinance groups only; 3) group medical visits only (no microfinance); and 4) group medical visits integrated into microfinance groups. The primary outcome measure will be one-year change in systolic blood pressure (SBP), and a key secondary outcome will be change in QRISK2 CVD risk score, which has been validated for Black Africans.

Subsidiary Aim 2.1: Conduct mediation analysis to evaluate the influence of changes in social network characteristics on intermediate factors and intervention outcomes and moderation analysis to evaluate the influence of baseline social network characteristics on effectiveness of interventions.

Aim 3: Evaluate the incremental cost-effectiveness of each intervention arm of the trial, in terms of costs per unit decrease in SBP, per percent change in CVD risk score, and per disability-adjusted life year saved.

This research project will add to the existing knowledge base on innovative, scalable, and sustainable strategies for reducing CVD risk in diabetes and other chronic diseases in LMICs and other low-resource settings. If proven to be effective, we are poised to expand the approach beyond the trial, thus ensuring that this research will have a significant and positive health impact on a larger population.

Research objectives and methodology

The objective of our project is to utilize a transdisciplinary implementation research approach to address the challenge of reducing CVD risk in low-resource settings. The central hypothesis is: group medical visits integrated into microfinance groups will be effective and cost-effective in reducing CVD risk among individuals with diabetes and at increased risk for diabetes in western Kenya, and that the key modifiable CVD risk factor to be addressed is BP. We hypothesize that group medical visits and microfinance may each reduce CVD risk, but the integration of group medical visits and microfinance will yield the largest gains. We further hypothesize that changes in social network characteristics may mediate the impact of interventions on the primary outcome, and that baseline social network characteristics may moderate the impact of interventions.

DM16: A lifestyle intervention program for the prevention of type 2 diabetes mellitus among South Asian women with gestational diabetes mellitus

Funded by: ICMR, NHMRC; *Duration:* 5 years

Study location: Bangladesh, India, Sri Lanka

Investigators

PIs

Nikhil Tandon, All India Institute of Medical Sciences, New Delhi, India

Anushka Patel, The George Institute for Global Health, Sydney, Australia

Research team

India - Neerja Bhatia D. Prabhakaran, D. Praveen, Hema Divakar, Deksha Kapoor, Ankush Desai, Yashdeep Gupta; Bangladesh – Aliya Naheed, Saria Tasnim; Sri Lanka – Asita de Silva, Sunil Fernando, P. Pathmeswaran; Australia – Sophia Zoungas, Helena Teede, Stephen Jan, Catherine Lombard, Rohina Joshi, Laurent Billot

Abstract:

Primary research aim

To determine whether a resource- and culturally-appropriate lifestyle intervention program in South Asian countries, provided to women with gestational diabetes after delivery, will reduce the incidence of type 2 diabetes, in a manner that is affordable, acceptable and scalable.

Secondary research aims

To determine the effects of the intervention on intermediate biological outcomes and lifestyle behaviours, as well as the proportion of women with a change in glucose metabolism status.

Research objectives and methodology

We have taken the learnings from previous diabetes prevention programs to develop a new lifestyle program that has a high probability of being feasible, acceptable and cost-effective in the South Asian context for women with prior GDM. We will optimise this intervention using an iterative,

systems-based and user-centred approach. The intervention will be delivered by auxiliary nurse midwives or their equivalent in each participating hospital, representing a strategy of within-system task-shifting. We will then evaluate the intervention in a randomised controlled trial (1414 women from 24 centres) to determine whether it will reduce the incidence of T2DM at a median of 20 months follow-up. This project focuses on generating new knowledge around implementation of a preventive strategy embedded within existing health systems, using mixed-methods evaluation to inform on cost-effectiveness, acceptability and scalability. It incorporates a science component (a program based on behaviour change theory that supports a multi-level approach to prevention by combining individually targeted strategies with social support), a social component (an innovative workforce strategy) and a sustainability component (a systems perspective for integration with existing health system infrastructure).

Current status

The grant was awarded in August 2015. The protocol, ethics committee applications and a range of other study procedures (and associated documentation) are being prepared. The first Steering Committee meeting will be held in New Delhi on November 3rd/4th, 2015.

DM17: Tools and Practices to Reduce CVD and Complications in the Diabetic Population in Mexico

Funded by: NIH;

Study location: Mexico

Investigators

Elsa Cornejo, El Colegio de Sonora, Mexico

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Maia Ingram, University of Arizona, USA

Jill Guernsey de Zapien, University of Arizona, USA

Samantha Sabo, University of Arizona, USA

Melanie Bell, University of Arizona, USA

María del Carmen Castro, El Colegio de Sonora, Mexico

Abstract:

Primary research aim

One major component of the study will assess the effectiveness of an adapted evidence-based community health worker intervention, Meta Salud Diabetes, a 13-week intervention aimed at reducing behavioral and clinical risk for cardiovascular disease among adults with diabetes.

Secondary research aim

The project's second component is an implementation study that will consist of systematic engagement of local, state and national decision makers essential to scale up and sustain the intervention into the standard package of services offered by government-run health centers in Sonora and other Mexican states.

Research objectives and methodology

For the first component, we will conduct a cluster-randomized trial among adult patients with diabetes sampled from 20 Secretaría de Salud (Secretary of Health)-operated health centers in Sonora. Community health workers at each of ten health centers randomized to the intervention condition will be trained in the adapted CVD prevention curriculum. The community health workers will then enroll 20 participants with diabetes at each site into the 13-week intervention. Psychosocial

(e.g., knowledge, attitudes, and beliefs) and behavioral (e.g., smoking, healthy eating) risk factors for cardiovascular disease will be assessed via a survey during the first of the 13 weekly educational sessions. Clinical risk factors (i.e., BMI, blood pressure, lipids, blood sugar) will be abstracted from existing patient records at the health centers. We will then assess changes that occur at three months (immediately after the intervention) and 12 months. Changes in the intervention sites will be compared to changes over the same time period among adult patients with diabetes in each of ten health centers randomized to the control condition. For the second component, extensive qualitative and descriptive data will be collected on the facilitators and barriers to adopt and integrate community health worker chronic disease interventions in Sonoran health centers and throughout Mexico.

HT01: Utilizing HIV/AIDS infrastructure as a gateway to chronic care of hypertension in Africa

Funded by: CIHR, CSN, GCC, IDRC; *Duration:* 5 years

Study location: Rwanda, South Africa, Uganda

Investigators

PIs

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Norm Campbell, University of Calgary, Calgary, Canada & Libin Cardiovascular Institute of Alberta, Calgary, Canada

Harriet Chemusto, Mildmay Uganda, Lweza, Uganda

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Jamie Forrest, Global Evaluative Sciences, Vancouver, Canada

Michel Joffres, Simon Fraser University, Vancouver, Canada

Isadore Kanfer, Rhodes University, Grahamstown, South Africa

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Katherine Muldoon, University of Ottawa, Ottawa, Canada

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Jean Nachega, Stellenbosch University, Stellenbosch, South Africa

Lehana Thabane, McMaster University, Hamilton, Canada

Sanni Yaya, University of Ottawa, Ottawa, Canada

Abstract:

Background

Antiretroviral therapy for the treatment of HIV has greatly improved life expectancy but has also been found to increase the risk of hypertension, and cardiometabolic diseases in general. Limited data is available on local trends in cardiovascular disease risk and how non-communicable diseases (NCDs), more generally, are screened, assessed and managed in people living with HIV in sub-Saharan Africa.

Primary research aim

The study aims to evaluate the effectiveness of active-case finding and to investigate the presence of cardiovascular disease risk factors in patients attending antiretroviral treatment services. These findings are to inform intervention programs seeking to ensure optimum integrated HIV and NCD care to HIV+ individuals.

Research objectives and methodology

In the first objective, trained clinical teams are responsible for identifying patients with HIV and non-communicable disease (NCD) co-morbidities each clinic day and link the patient to support and care services and collect data to inform second objective, which includes identifying the prevalence and correlates of hypertension.

Current status

The study was officially launched in Rwanda at the School of Public Health at the University of Rwanda in December 2013. The aim in Rwanda is to conduct an assessment to determine the prevalence of hypertension in HIV-positive patients on antiretroviral therapy compared with ART-naïve and HIV-negative controls. The Rwandan team has completed 10% of total data collection and preliminary analysis and data cleaning is underway to inform the next phase of collection beginning September 2015.

The study in Uganda is further along. Phase one of data collection is complete and phase two is now collecting additional information on patient quality of life and provider quality of care.

Conclusions to date

In Uganda, 939 out of 1036 (93.5%) of patients with NCD-HIV co-morbidity 1.8% have been managed for stroke and 0.2% for Deep Venous Thrombosis; 97(6.5%) of the patients are diabetic while 51(4.9%) are both hypertensive and diabetic. Of the hypertensive patients, 845(90%) are on Anti Retro Viral Therapy (ART), of whom, 64((7.6%) are on protease inhibitor specific ART regimen. Protease inhibitors are known to predispose to dyslipidaemia, which is a risk factor for cardiovascular disorders.

Publications:

Mateen FJ, Kanters S, Kalyesubula R, Mukasa B, Kawuma E, Kengne AP et al. Hypertension prevalence and Framingham risk score stratification in a large HIV-positive cohort in Uganda. *J Hypertens*. 2013;31(7):1372-8; discussion 8. doi:10.1097/HJH.0b013e328360de1c.

Submitted for peer-review:

1. Treatment Outcomes of Patients with HIV and NCD Comorbidities Receiving care from Mildmay Uganda. *Health, Education and Behavior Journal*
2. Outcomes of Self-Management Education for Patients with Non-Communicable Diseases including; Hypertension, Diabetes, Mental illness and Cardiovascular Diseases and HIV and AIDS comorbidity at Mildmay Uganda - *Preventing Chronic Diseases Journal*.

HT02: Developing an innovative strategy for hypertension detection, treatment and control in two middle income countries, HOPE-4

Funded by: CIHR, CSN, GCC, IDRC; *Duration:* 5 years

Study location: Colombia, Malaysia

Investigators

PIs

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Juan Gonzalo Lopez Casas, Instituto Nacional de Salud, Bogota, Colombia

Martin McKee, London School of Hygiene and Tropical Medicine, London, United Kingdom

Khalid Yusoff, Universiti Teknologi MARA, Selangor, Malaysia

Salim Yusuf, Population Health Research Institute, Hamilton, Canada & McMaster University, Hamilton, Canada

Ariffin Omar Zainal, Ministry of Health Malaysia, Putrajaya, Malaysia

Research team

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Hadi Musa, Population Health Research Institute, Hamilton, Canada

Eleanor Ng, Population Health Research Institute, Hamilton, Canada

Robby Nieuwlaat, Population Health Research Institute, Hamilton, Canada

Abstract:

Primary research aim

The primary research aim is to evaluate whether the cardiovascular (CV) disease risk detection, treatment, and control programme can substantially improve hypertension control and overall Framingham Risk Score (FRS) at 1 year.

Research objectives and methodology

The overall objective of the Hypertension Phase of the HOPE-4 programme is to develop and field-test an evidence-based, contextually appropriate model for hypertension detection, treatment and control. This program will be evaluated in a cluster randomized control trial (cRCT) with a formative research strategy. More specifically, the program involves: (a) simplified WHO-supported algorithms that are implemented by non-physician health workers (NPHWs) and further supported by pre-programmed e-health tablet technologies; (b) evidence-based CV medications that includes a combination of anti-hypertensives and a lipid-lowering agent, and (c) patient-nominated treatment supporters (friends or family members) to help optimize long-term lifestyle modification and adherence. The results of this study will be submitted for peer review to a scientific journal. Further, results will be fed back to patients, physicians and health policy makers as deemed appropriate by experts.

Current status

To date, HOPE-4 has recruited and trained 20 NPHWs and expanded screening to 11 international communities, of which 6 have fully recruited the required number of participants. Based on the data collected so far, approximately 3379 homes have been visited, 1281 participants have been screened, and with an enrollment rate of approximately 32% (36% in Colombia and 26% in Malaysia), a total of 406 participants have enrolled.

However, prior to the study's expansion we want to note two significant developments that we have had to recently address. First, based on the data we analyzed from our pilot communities we have had to tighten our participant selection criteria because a significant portion of our recruited population (over 50%) had average systolic blood pressures below 140 mmHg, and therefore low CV disease-risk profiles of whom would receive little, if any, benefit from our 1 year hypertension programme. Second, due to complications with obtaining our combination of CV medications in a single pill we have instead secured our combination CV medications from local pharmacies of participating regions.

Lastly, as reported in the previous update, two systematic reviews on health systems and patient-physician barriers to hypertension awareness and management have already been published in PLoS Med 2013 and PLoS ONE 2014, respectively. We have also published a health systems inventory and appraisal for Colombia in PLoS ONE 2015 and Malaysia in BMC Health Services Research 2015, which was led by our affiliates at the London School of Hygiene and Tropical Medicine.

Conclusions to date

Although we structured and designed our research model to eliminate system-wide barriers to healthcare access, ensuring gender equity in participant recruitment has been a challenge. In our attempt to improve the study's low uptake of males relative to females we tried varying the times at which community screening is conducted so that working individuals also have a chance to be screened. Since this attempt, an initial 34% difference in male-female recruitment (44 male: 88 female from 2 pilot communities) has reduced to 28% (100 male: 144 female from 6 communities) in Colombia. Similarly, in Malaysia the difference was reduced from 27% (72 male: 126 female from 2 pilot communities) to 10% (73 female: 89 male from 5 communities).

Publications:

Risso-Gill I, Balabanova D, Majid F, Ng KK, Yusoff K, Mustapha F et al. Understanding the modifiable health systems barriers to hypertension management in Malaysia: a multi-method health systems appraisal approach. *BMC Health Services Research* 2015, **15**:254 doi:10.1186/s12913-015-0916-y
Legido-Quigley H, Camacho Lopez PA, Balabanova D, Perel P, Lopez-Jaramillo P, Nieuwlaat R, et al. (2015) Patients' Knowledge, Attitudes, Behaviour and Health Care Experiences on the Prevention, Detection, Management and Control of Hypertension in Colombia: A Qualitative Study. *PLoS ONE* 10(4): e0122112. doi:10.1371/journal.pone.0122112

Khatib R, Schwalm JD, Yusuf S, Haynes RB, McKee M, Khan M et al. Patient and healthcare provider barriers to hypertension awareness, treatment and follow up: a systematic review and meta-analysis of qualitative and quantitative studies. *PLoS One*. 2014;9(1):e84238. doi:10.1371/journal.pone.0084238.

Yusuf S, Attaran A, Bosch J, Joseph P, Lonn E, McCreedy T et al. Combination pharmacotherapy to prevent cardiovascular disease: present status and challenges. *European heart journal*. 2014;35(6):353-64. doi:10.1093/eurheartj/eh407.

Maimaris W, Paty J, Perel P, Legido-Quigley H, Balabanova D, Nieuwlaat R et al. The influence of health systems on hypertension awareness, treatment, and control: a systematic literature review. *PLoS Med*. 2013;10(7):e1001490. doi:10.1371/journal.pmed.1001490.

HT03: DREAM-GLOBAL: Diagnosing hypertension - Engaging Action and Management in Getting Lower Bp in Aboriginal and LMIC

Funded by: CIHR, CSN, GCC, IDRC; *Duration:* 5 years

Study location: Canada, Tanzania

Investigators

PIs

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Sheldon Tobe, Sunnybrook Research Institute, Toronto, Canada

Karen Yeates, Queen's University, Kingston, Canada

Research team

Diane Hua, Sunnybrook Research Institute, Toronto, Canada

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Marion Maar, Northern Ontario School of Medicine, Sudbury, Canada

Nancy Perkins, Sunnybrook Research Institute, Toronto, Canada

Jessica Sleeth, Queen's University, Kingston, Canada

George Wells, Ottawa Heart Research Institute, Ottawa, Canada

Abstract:

Primary research aim

The primary objective of the study is to assess the effect of SMS messages on BP control in aboriginal people in Canada and rural Tanzania with hypertension. Secondary objectives include evaluating the efficacy of community BP measurement and SMS messaging for diagnosing hypertension in Aboriginal Canadian and rural Tanzanian people at risk of developing this health problem. A third objective is to document and explore associations between SMS messaging and community BP measurement with patient and healthcare provider satisfaction and interest in the program during the study.

Research objectives and methodology

The primary objective of the study is to assess the effect of SMS messages on BP control in aboriginal people in Canada and people in rural Moshi region in Tanzania with hypertension.

This is a prospective, randomized blinded allocation study of BP control with SMS messaging in patients with uncontrolled hypertension.

The project is being carried out in five aboriginal communities in Canada and two in Tanzania. Adult patients with uncontrolled hypertension can be enrolled into the BP control study, and those without hypertension but at high risk of developing this condition into the BP screening study if they meet the study inclusion criteria and have none of the exclusion criteria. Participants will be screened prior to enrollment and undergo a follow-up period of at least 12 months. We have introduced and will test the efficacy of an SMS (e-voucher) model of drug access/distribution in Tanzania through private partnerships with drug distributors.

Lessons learned/conclusions to date:

It is critical to develop multi-faceted, and realistic health interventions in collaboration with the communities. Based on community-based participatory research (CBPR), we aimed to develop implementation tools to guide complex interventions. As a result, the I-RREACH tool was designed by the research team to facilitate implementation of the intervention and to identify existing strengths and areas requiring further development for an effective implementation. I-RREACH has been found to be easily adaptable to diverse geographical and cultural settings and can be further adapted to other complex interventions. As recruitment and retention with communities is a priority, regular engagement with communities and site visits can help to maintain partnerships and sustain community interest.

Current status

The project is enrolling patients in both countries. Process evaluations have been underway, and the final analysis expected in 2016-2017.

Publications:

Maar M, Yeates K, Toth Z, Barron M, Boesch L, Hua-Stewart D, Liu P, Perkins N, Sleeth J, Wabano MJ, Williamson P, Tobe SW Unpacking the black box of text messages in mobile health interventions: A formative research approach to the development of theory-driven, evidence-based, and culturally safe messages. JMIR mHealth uHealth 0000;##(##):e## URL: <http://mhealth.jmir.org/0000/0/e0/> doi:[10.2196/mhealth.4994](https://doi.org/10.2196/mhealth.4994)

Maar M, Yeates K, Barron M, Hua D, Liu P, Moy Lum-Kwong M et al. I-RREACH: an engagement and assessment tool for improving implementation readiness of researchers, organizations and communities in complex interventions. Implement Sci. 2015;10(1):64. doi:10.1186/s13012-015-0257-6.

Niebylski ML, Lu T, Campbell NR, Arcand J, Schermel A, Hua D et al. Healthy food procurement policies and their impact. International journal of environmental research and public health. 2014;11(3):2608-27. doi:10.3390/ijerph110302608.

HT04: A school-based education program to reduce salt intake in children and their families

Funded by: MRC-UK; *Duration:* 2 years (Project Completed)

Study location: China

Investigators

PIs

Feng He, Queen Mary University of London, London, United Kingdom

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Research team

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Stephen Jan, The George Institute for Global Health, Sydney, Australia

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Ching-Ping Lin, The George Institute for Global Health - China, Beijing, China

Yuan Ma, Queen Mary University of London, London, United Kingdom

Caryl Nowson, Deakin University, Melbourne, Australia

Haijun Wang, Peking University, Beijing, China

Lijing Yan, The George Institute for Global Health - China, Beijing, China

Abstract:

Primary research aim

To determine whether an education program targeted at primary school children could lower salt intake in children and their families.

Methodologies

Design: Cluster-randomised controlled trial in 28 primary schools in urban Changzhi, northern China. 279 children in Grade 5 of primary schools with mean age of 10.1 years will be enrolled, and 553 adult family members (age 43.8 years) will also participate in the assessments.

Intervention: Schools will be randomly assigned to either the intervention or control group. Children in the intervention group will be educated on the harmful effects of salt and how to reduce salt intake using the schools' usual health education lessons. Children will then deliver the salt reduction message to their families. The intervention duration is one school term (\approx 3.5 months).

Main outcome measures: The primary outcome will be the difference between the intervention and the control group in the change of salt intake (measured by 24h urinary sodium) from baseline to the

end of the trial in children and adults. The secondary outcome will be the difference between the two groups in the change of blood pressure.

Current status

The study has been successfully completed. The main paper has been published in BMJ. Cost-effective analysis is underway. Process evaluation analysis is in progress.

Conclusions

The study demonstrates that an education programme delivered to primary school children as part of the usual curriculum, is effective in lowering salt intake in children and their families. This offers a novel and important approach to reducing salt intake in the population where most of the salt in the diet is added by the consumers.

Publications:

He FJ, Wu Y, Feng XX, Ma J, Ma Y, Wang H et al. School based education programme to reduce salt intake in children and their families (School-EduSalt): cluster randomised controlled trial. BMJ. 2015;350:h770. doi:10.1136/bmj.h770.

He FJ, Wu Y, Ma J, Feng X, Wang H, Zhang J et al. A school-based education programme to reduce salt intake in children and their families (School-EduSalt): protocol of a cluster randomised controlled trial. BMJ open. 2013;3(7). doi:10.1136/bmjopen-2013-003388.

HT05: Treating hypertension in rural South Africa: A clinic-based lay health worker to enhance community-based outreach services for integrated chronic care

Funded by: MRC-UK; Duration: 3 years

Study location: South Africa

Investigators

PIs

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Felix Limbani, University of the Witwatersrand, Johannesburg, South Africa

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Nkosinathi Masilela, University of the Witwatersrand, Johannesburg, South Africa

Nokuzola Myakayaka, University of the Witwatersrand, Johannesburg, South Africa

Stephen Tollman, University of the Witwatersrand, Johannesburg, South Africa

Rhian Twine, University of the Witwatersrand, Johannesburg, South Africa

Abstract:

Primary research aim

The aim of the trial is to reduce population levels of uncontrolled hypertension, especially in those individuals at greatest risk, by supporting and strengthening the management of hypertension in primary care clinics

Research objectives and methodology

The research objectives of the trial are to:

- Compare the effectiveness of clinic based lay health workers to 'usual care', in improving the management of hypertension (including access to care, adherence to treatment, and management), in rural South Africa.
- Conduct a realist evaluation to understand the patient, intervention, implementation, health system and community barriers and facilitators that explain patient outcomes in the intervention and 'usual care' clinics.
- Contribute specific recommendations to strengthen policy and practice in similar rural settings of South and Southern Africa.

Methods

The trial involves randomising clinics to receive support from lay health workers (LHW). Four clinics will be randomised to receive the LHWs, and four will be control clinics. The outcome of the trial will be assessed by two population based cross sectional surveys; one at baseline and one at the end of the intervention. The surveys will collect data on cardiovascular risk factors, use of clinics, and current medication, as well as measuring blood pressure. The hypothesis is that the LHWs will improve clinic functioning, thus encouraging more use of the clinics and more consistent use of medication for high blood pressure. Alongside the trial there will be a system linking the clinic records and the existing Health and Demographic Survey System database, enabling us to collect patient specific data on clinic use. There will also be an extensive process evaluation involving interviews with nurses, clinic managers and supervisors, LHWs, and our implementation manager.

We are also carrying out observations in the clinics, conducting patient exit interviews and interviewing three purposely selected samples of clinic users.

Current status

Once our LHWs started in the clinics we found that the blood pressure machines, and particularly the cuffs, were not functional. It took about six months to measure the seriousness of the situation, negotiate with the health authorities, consult our steering committee and finally, buy new cuffs for all clinics (intervention and control) out of our own funds. The intervention has therefore been extended by six months, until the end of August 2015. By November, we will be more than half-way through our end-of-intervention community survey. In early 2016 we will start analysing the data and writing our reports.

Conclusions to date

We will not have outcome data until well into 2016. Our process evaluation is still being analysed. However, it has given us some reasons to think we may have had an effect, but other reasons to think we may not (see table).

Why we might have an effect	Why we might not have an effect
More patients turn up for their appointments	Demand for ARVs for HIV swamps the clinics
Shorter queues in clinics	Shortage of nursing staff
More newly diagnosed hypertension	Drug outages for anti-hypertensives
LHWs giving active support and advice	Constant problems with BP machines breaking down

(ARVs: anti-retroviral drugs, HIV: Human immunodeficiency virus, BP: blood pressure)

Publications:

Thorogood M, Goudge J, Bertram M, Chirwa T, Eldridge S, Gomez-Olive FX et al. The Nkateko health service trial to improve hypertension management in rural South Africa: study protocol for a randomised controlled trial. *Trials*. 2014;15:435. doi:10.1186/1745-6215-15-435.

HT06: Improving the control of HT in rural India: overcoming the barriers to diagnosis and effective treatment

Funded by: NHMRC; *Duration:* 3 years

Study location: India

Investigators

PIs

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Brian Oldenburg, University of Melbourne, Melbourne, Australia

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Abstract:

Primary research aim

There are significant barriers to the diagnosis and treatment of hypertension in both urban and rural regions of India, and there is some evidence that individual and system barriers differ according to the stage of transition of the population. Our research is being undertaken in three diverse rural regions in India, each of which is at a different stage of economic and epidemiological transition (early, middle, late) to identify and explore these potentially different barriers and knowledge gaps in the diagnosis treatment and management of hypertension.

Research objectives and methodology

We are employing common recruitment and study methods across these settings in order to address the following aims:

- Quantify and identify the determinants of the prevalence, awareness, treatment, and control of hypertension in three different rural populations in India.
- Identify barriers to hypertension control.
- Develop and pilot intervention strategies to improve the control of hypertension. The pilot program is based on those factors identified as contributing to hypertension control in these settings and includes both management and prevention strategies aimed at the individual, health service delivery and policy levels.

Current status

A meeting with stakeholders and investigators was held during October 2014 in order to plan the pilot intervention.

During these consultations we collectively developed a group based self-management support and information intervention that will be led by trained Accredited Social Health Activists (ASHAs). ASHAs are community members who connect the community with the formal health sector in India. They are the first point of contact for communities in rural India. Because they are selected by their communities to act as the ASHA, and have considerable status within these communities, we anticipate utilising these ASHAs may improve scalability of the intervention.

ASHAs are currently undergoing training at each site. Participants who have been identified as hypertensive during the baseline survey are being recruited to participate in a 3 month intervention consisting of six group meetings. At these meetings participants will be provided with information about hypertension knowledge and support for self-management within the local community.

Process achievements

We have obtained ethics approval from all institutes, including ICMR and each sponsor partner (n=5). We have successfully harmonised the cross sectional survey across three disparate rural settings (English plus two additional languages), and trained staff to administer the survey and collect anthropometric data using identical techniques.

Outcome achievements

Approximately 13,000 total participants from the three study regions have been recruited for assessment to date (approximately 78% of planned recruitment for baseline). Participants had their blood pressure (BP) measured, either in their homes or at a mobile centre, in strict accordance with the WHO Steps protocol for measuring BP. Weight, height, and waist circumference were also assessed in addition to risk factors and other comorbidities, family history, health care utilisation, current medication, socioeconomic position, diet, physical activity, smoking, other tobacco use and quality of life. Barriers associated with the assessed domains were also investigated. Data entry and analysis is ongoing.

Focus Group discussions have been undertaken to explore people's experiences with health care systems, particularly related to their experience in the diagnosis and management of hypertension as well as their perceptions and beliefs about hypertension. Interviews have been carried out with health care providers (Primary Health Centre Clinician, Staff nurse, and other associated non-physician health care workers) in these rural settings. These interviews were conducted to explore care practices for hypertension, and perceptions of the health care system in relation to screening and management of hypertension and other chronic conditions.

We have conducted an audit of pharmacies at each site to capture availability and cost of medicines in the public and private sector. This information was used to identify opportunities for the inclusion of pharmacological activities within the intervention plan.

Methodological challenges

To develop common recruitment and study methods that take into account the great diversity of culture, systems, and communities.

Across three sites with divergent cultural attitudes it has been challenging to promote and maintain consistency of anthropometric measurements.

Investigating divergent and varied potential barriers and gaps with respect to diagnosis and management of hypertension whilst minimizing participant burden.

Developing the training material for ASHAs, intervention resources and meeting content that will be suitable/relevant across all sites, particularly because each site has significantly diverse levels of general and health specific literacy.

Stakeholder engagement

Major administrative and health policy stakeholders attended our annual investigator meeting in October 2014. These stakeholders included representatives from the Indian Council of Medical Research, Public Health Foundation India, as well as the State Program officer from the National Programme for Prevention and Control of Cancer, diabetes Cardiovascular diseases and stroke, Director of Andhra Pradesh Public Health and Family Welfare.

Stakeholders were asked to comment, critique and assist in further refining the intervention in the context of the existing health delivery frameworks, clinical guidelines, and current clinical practice. Our underlying aim with this approach was to develop an effective intervention that would be easily incorporated into the Indian health system, thereby enhancing the scalability of the intervention.

Critical lessons from last 12 months

We identified the need for ASHA material and intervention resources to be relevant at each site. There was also a need to present the concepts of behavioural change to the ASHAs in simple and pictorial terms so that they could understand and then relay the same information to the participants. For the period of the study we will be linking the ASHA worker to a research team member. This will ensure that process measures can be accurately recorded. This pairing will also give the ASHA time and confidence to deliver the program in future should it prove to be effective clinically and/or socially acceptable and supported by the community.

Some discussion with stakeholders, who manage ASHAs and Auxillary Nurse Midwives (ANMs) within the rural health system, may be required to adequately redefine and delineate the position roles for these health workers. This will enhance harmony, understanding and cooperation in delivering this intervention to the community.

Aims/priorities for next 12 months

We will implement a low cost community based group intervention that is culturally and economically appropriate for each setting. Villages will be randomised to receive the intervention or to act as a control villages. For villages randomised to the intervention, group meetings will be used to deliver information about hypertension as well as practical advice for self-management such as incorporating lifestyle, pharmacological and clinical behavioural changes into daily activities. The groups will provide social support and practical solutions for the “how to” implementation of the suggested behavioural and clinical changes required for effective control of hypertension.

Analysis of the extensive data base of the baseline data will be ongoing in order to investigate our original hypotheses:

1. Knowledge/awareness of the presence of hypertension and about risk factors associated with hypertension is greater in the late transition region than in the early transition region.
2. Prior BP measurement is less common in the early transition region (Rishi Valley) than in the late (Kerala) and medium transition region (Andhra Pradesh Rural Health Initiative: APRHI)
3. In those previously identified as having hypertension, costs of treatment are the greatest barrier to ongoing management of hypertension in all settings.
4. Poor management of hypertension is more common in women, people living below the poverty line, and in those who did not finish high school.
5. High salt intake is a major risk factor for hypertension in both men and women in the late transition region, but its effect is limited to men in the early transition setting.

Other research impact

Our findings might impact on other research activities for other non-communicable diseases in the region, as we will have self-reported data on diabetes, hyperlipidaemia, and memory loss. The intervention designed might be applicable to managing these other conditions. The research will also

enable us to determine how non-physician health workers can be utilised to control hypertension in rural communities.

Conclusions to date

We have conducted a comprehensive community based survey of approximately 13000 participants to date. Representative communities were randomly selected for participation in the baseline survey and sampling was defined by age group (18-24, 25-34, 35-44, 45-54, 55-64, 65+) and sex with the goal of including comparable numbers of individuals from each group.

As hypothesised, we have encountered differences in the prevalence of hypertension and barriers to its control across these three rural settings. There is also variation in both lifestyle factors and availability of goods and services, including health care services and food variety. We will be able to explore how the variability in lifestyle and services impacts on hypertension and associated health outcomes.

An audit of available pharmaceuticals for the treatment and clinical management of hypertension has been completed at each site. This information has been used in developing the intervention content and will be published separately to enhance and disseminate knowledge regarding this significant aspect of clinical management of hypertension.

Focus group discussions of participants from each location have been conducted and are currently being analysed for recurrent and divergent themes.

In-depth interviews with health care providers have enabled identification of barriers to accessing health care services and other system barriers.

Training of ASHAs has been piloted and found to be feasible and acceptable. Intervention materials have been piloted by ASHAs during the training period and have been edited and amended according to feedback during the training period.

Process evaluation measurements have been developed to monitor the intervention. This comprehensive process evaluation will enable us to further engage with major stakeholders from the Ministry of Health and Family Welfare, and potentially enhance scalability.

HT07: A smartphone-based clinical decision support system for primary health

Funded by: NHMRC; Duration: 3 years

Study location: India

Investigators

PIs

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Abstract:**Primary research aim**

To test whether an electronic clinical decision support system will assist non-physician health workers and doctors in making evidence-based management decisions to lower their patients' CVD risks.

Research objectives and methodology

The two specific objectives of this project are:

- To develop a multifaceted primary healthcare worker intervention that utilises a mobile device-based clinical decision support system to improve optimal BP control in high risk individuals.
- To evaluate this program utilising a mixed methods evaluation in a cluster randomised trial involving 54 villages in rural Andhra Pradesh.

The intervention is being evaluated using a stepped- wedge cluster randomised, controlled trial (cRCT) of two years duration.

Current status

- Intervention rolled out to 18 PHCs in a phased manner.
- Study is in the third phase of the four 6-monthly phases.
- Around 80 health workers and 6 doctors from 18 villages belonging to the first set of 6 PHCs have been using the SMARThealth platform for more than 10 months and those from the second set for more than 4 months.
- The health workers have screened a total of 30444 eligible adults above the age of 40 years and 4998 high-risk individuals are referred to the doctor till 15 Oct 2015.

Conclusions to date

- Doctor availability at the PHC is the key challenge
- The work of the health workers is impeded by the seasonal agricultural work
- Monthly reports and online refresher training helps keep up the motivation of the health workers
- Availability of medications was an issue but with Government support, medications are freely available at the Government center now
- The model of task shifting with use of mHealth technology for CVD risk estimation is well accepted to the rural community

Publications:

Raghu A, Praveen D, Peiris D, Tarassenko L, Clifford G. Implications of Cardiovascular Disease Risk Assessment Using the WHO/ISH Risk Prediction Charts in Rural India. PLoS One. 2015 Aug 19;10(8):e0133618. doi: 10.1371/journal.pone.0133618. eCollection 2015.

Raghu A, Praveen D, Peiris D, Tarassenko L, Clifford G. Engineering a mobile health tool for resource-poor settings to assess and manage cardiovascular disease risk: SMARThealth study. BMC Med Inform Decis Mak. 2015 Apr 29;15(1):36. [Epub ahead of print]

Peiris D, Praveen D, Johnson C, Mogulluru K. Use of mHealth Systems and Tools for Non-Communicable Diseases in Low- and Middle-Income Countries: a Systematic Review. Journal of cardiovascular translational research. 2014;7(8):677-91. doi:10.1007/s12265-014-9581-5.

Praveen D, Patel A, McMahon S, Prabhakaran D, Clifford GD, Maulik PK et al. A multifaceted strategy using mobile technology to assist rural primary healthcare doctors and frontline health workers in cardiovascular disease risk management: protocol for the SMARTHealth India cluster randomised controlled trial. *Implement Sci.* 2013;8:137. doi:10.1186/1748-5908-8-137.

Praveen D, Patel A, Raghu A, Clifford GD, Maulik PK, Mohammad Abdul A et al. SMARTHealth India: Development and Field Evaluation of a Mobile Clinical Decision Support System for Cardiovascular Diseases in Rural India. *JMIR mHealth and uHealth.* 2014;2(4):e54. doi:10.2196/mhealth.3568.

HT08: Randomised control trial of early use of a simplified treatment regimen incorporating a half-dose, three-in-one blood pressure lowering pill vs. usual care for improving hypertension control in India

Funded by: NHMRC; *Duration:* 3 years

Study location: Sri Lanka

Investigators

PIs

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Abstract:

Primary research aim

To investigate effectiveness, cost-effectiveness, and acceptability of Triple pill (Triple BP lowering therapy) compared to usual care for early management of high BP in Sri Lanka.

Research objectives and methodology

Design: Randomised Controlled Trial, Economic Evaluation, and Process Evaluation.

Participants: Adults with high BP despite diet and lifestyle advice or single drug therapy.

Intervention: Triple pill vs. usual care.

Outcome: Proportion of participant achieving target BP at 6 months follow-up.

Sample: n=700, power = 90%, $2\alpha = 0.05$, 12% improvement in control rates from 50%.

Current status

All required ethics and regulatory approvals have been obtained to commence in Sri Lanka. Sites have been identified and a local investigator meeting held in July, 2015. Recruitment should commence in September, 2015 depending on arrival of the study drug in the country.

Conclusions to date

Challenges thus far have been primarily administrative in nature related to obtaining required approvals to commence the TRIUMPH study in India. Valuable lessons have been learned around resilience and perseverance in dealing with unexpected barriers.

Publications:

Salam A, Webster R, Singh K, Kallakuri S, Rodgers A, Prabhakaran D et al. Triple pill vs Usual care Management for Patients with mild-to-moderate Hypertension (TRIUMPH): Study protocol. American heart journal. 2014;167(2):127-32. doi:10.1016/j.ahj.2013.10.020.

HT09: Developing the evidence base for a national salt reduction program for India

Funded by: NHMRC; *Duration:* 3 years

Study location: India

Investigators

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Abstract:**Primary research aim**

The overall goal of this 3-year project is to develop the evidence base required to formulate a national salt reduction program for India. This will be done by conducting an integrated, multifaceted research program comprised of stakeholder assessments, population surveys and food supply evaluations. It is hoped this research will then provide the data required to formulate and implement a plausible national salt reduction program for India.

Research objectives and methodology

The specific objectives for each research component are:

Stakeholder survey: To obtain a comprehensive understanding of consumer and other stakeholder opinions in relation to the most effective mechanisms for reducing salt intake: Face-to-face in-depth interviews with stakeholders from academia, industry, government, non-government and focus group discussions with consumers.

Population survey: To estimate the mean daily salt consumption of the Indian population, the main sources of salt in the diet, and population knowledge about the adverse effects of salt on health: 24hr urinary sodium excretion/spot urine samples; 24hr dietary recall survey; demography and anthropometry; knowledge, attitudes and behaviors on salt intake using a questionnaire.

Food survey: To estimate the mean and variation in the nutritional quality of common processed and restaurant foods: shop survey to capture nutrition information on packaged food available in Hyderabad and Delhi supermarkets.

Current status

Population surveys including 1200 participants in North and South India are complete and preliminary results show a mean crude average of 7.8 (95% CI 7.6-8.0). Approximately 50 stakeholder interviews and 8 focus group discussions have been completed and the analysis and identification of emergent major themes is underway. The survey of processed foods captured approximately 8000 products from major North and South Indian supermarkets.

Conclusions to date

Currently, analysis of urinary creatinine is underway to determine appropriate inclusion criteria for completeness of the 24hr urine samples. Creatinine excretion as well as total 24hr urine volume will be used to determine completeness.

Publications:

Johnson C, Mohan S, Praveen D, Woodward M, Maulik PK, Shivashankar R et al. Protocol for developing the evidence base for a national salt reduction programme for India. *BMJ open*. 2014;4(10):e006629. doi:10.1136/bmjopen-2014-006629.

HT10: Cost effectiveness of salt reduction interventions in Pacific Islands

Funded by: NHMRC; *Duration:* 3 years

Study location: Fiji, Samoa

Investigators

Chief Investigators

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Abstract:

Research aims and methodology

The aim of the project is to evaluate the impact and cost-effectiveness of multi-faceted intervention strategies to reduce salt in the Pacific Islands. With parallel projects in Fiji and Samoa, the objectives are to measure current salt consumption patterns, develop an intervention program to reduce salt in each country and then monitor progress against key indicators. The study uses a before and after design and is powered to detect a difference of 0.7grams/day in population salt intake. A cost-effectiveness analysis is integral to the program.

Current status

The final repeat monitoring stage of the project is now underway in both countries. The original baseline assessments were completed in 2013. The results were then collated with the findings of stakeholder analyses and used to inform targeted country specific intervention projects. In Fiji, meetings were held with food companies to develop targets for salt levels in foods and community educators were trained to deliver salt reduction messages through ongoing programs. In Samoa, school and cultural specific community awareness programs were delivered, including distributing information at charity events, religious group meetings, government meetings, and through advertisements in newspaper articles, radio and television. A joint meeting to bring together collaborators from both projects was held in Fiji in June. This was to exchange experiences on the project to date, plan logistics and training for the follow up monitoring and identify lessons that can be used to inform other countries that are considering similar work. The meeting was a critical milestone in relation to consolidation of learning to date.

Conclusions to date

Whilst it is too early to say whether the project has been successful in reducing population salt intake in either Fiji or Samoa, there are now co-ordinated programs in place in each country. An initial challenge was recruiting the local research teams but there are now commitments from the Ministries of Health to continue to support existing staff and program implementation after the GACD project ends. A second initial challenge was securing the multi-sectoral stakeholder collaboration required to implement effective salt reduction strategies. New governance structures are now in place in both countries to facilitate collaboration on this and future projects. It is expected that, by the end of 2015, as well as demonstrating progress on salt reduction and providing new evidence relating to cost-effectiveness, the project will have resulted in salt reduction becoming mainstreamed into government work programs. In addition, a range of tools and resources for other countries will be produced and disseminated through the World Health Organization Collaborating Centre on Population Salt Intake at the George Institute in line with its remit to support Member States towards achieving the global target of reducing average population salt intake by 30% by 2025.

Publications:

Downs SM, Christoforou A, Snowdon W, Dunford E, Hoejskov P, Webster J. (2015) *Setting targets for salt levels in foods: A five-step approach for low- and middle-income countries* (based on lessons from the Pacific Islands). *Food Policy* 55: 101-108.

Webster J, Snowdon W, Moodie M, Viali S, Schultz J, Bell C et al. *Cost-effectiveness of reducing salt intake in the Pacific Islands: protocol for a before and after intervention study*. *BMC Public Health*. 2014;14:107. doi:10.1186/1471-2458-14-107.

Christoforou A, Snowdon W, Laesango N, Vatucawaqa S, Lamar D, Alam L, Lippwe K, Havea I, Tairea K, Hoejskov P, Waqanivalu T, Webster J. *Progress on Salt Reduction in the Pacific Islands: From Strategies to Action*. *Heart, Lung and Circulation*, 2014 DOI: 10.1016/j.hlc.2014.11.023 [Impact Factor 1.172]

HT11: Launching a salt substitute to reduce blood pressure at the population level in Peru

Funded by: NHLBI, NIH; *Duration:* 5 years

Study location: Peru

Investigators

PIs

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María Amalia Pesantes, Universidad Peruana Cayetano Heredia, Lima, Peru
Katie Sacksteder, Johns Hopkins School of Public Health, Baltimore, United States

Sergio Mimbela, Universidad Peruana Cayetano Heredia, Lima, Peru

Vilarmina Ponce-Lucero, Universidad Peruana Cayetano Heredia, Lima, Peru

Abstract:

Primary research aim

To implement and assess the impact of an intervention using a salt substitute on blood pressure at the population level using a stepped wedge trial design.

Research objectives and methodology

Phase 1: To assess predisposition patterns towards incorporating the new salt substitute into daily cooking among villagers, authorities and other potential stakeholders, in order to inform and construct the structure of the intervention in the local communities and ensure successful implementation. For this, we will use focus groups and in-depth interviews techniques.

Phase 2: To implement and assess the impact of an intervention using a salt substitute on blood pressure at the population level using a stepped wedge trial design.

Current status

Phase 1: Exploratory Phase (concluded)

1.1. Triangle Taste Test (TTT): We used the sensory discrimination test to assess if the use of potassium-enriched salt substitutes leads to perceived differences in taste. Sample: 156 subjects. Procedure: Samples of cooked rice prepared with different salts: 100% NaCl (regular salt) and salts where sodium was replaced by 50%, 33% or 25% KCl (potassium-enriched salt). Result: Samples with 25% potassium-enrichment were indistinguishable from regular salt, whereas samples with 33% and 50% were distinguishable.

- Salt Substitute Combination for Intervention: 25% KCl - 75% NaCl.

1.2. Formative Research: Qualitative Study & Questionnaire to define Product Identity

We used in-depth interviews and focus groups (6 villages, 170 male and female dwellers).

Main Results: Women are the family cooks but men opinions about food quality and taste are relevant for women. Salt is considered a key ingredient for food flavor. Even when a high consumption of salt is considered unhealthy there is no association between salt intake and hypertension. Available salt is very cheap (USD 0.20 p/kilo) and has very low-quality (grey color). Salt substitute is not available in the area and participants in focus groups showed high interest on use it.

Phase 2: Implementation Phase

2.1. Recruitment of participants & baseline: (concluded)

In April 2014, enrollment and baseline data collection began in the 6 villages. It took 3.5 months. A total of 2365 adults of 2575 potential participants accepted to be enrolled. The random selection of the 1st village to be intervened was done in July 2014.

2.2. Production & distribution of salt substitute: (in progress)

Salt substitute with 25% KCl is not available in the market in Tumbes. As a result, a small factory was built to produce the salt substitute by simple combination. The ingredients (common salt and 50% potassium-enriched salt) are bought in Lima, and then transported to Tumbes. As the first step, exchange of common salt for salt substitute is performed in the intervened villages. The salt substitute is freely distributed and delivered to participants. The first delivery is undertaken using plastic pots to guarantee appropriate salt conservation.

2.3. Social Marketing Campaign: (in progress)

The implementation started in August 2014. Entertainment-Education activities and socio-cultural animation techniques are used to create favorable conditions to promote the consumption of the substitute (sal Liz).

Conclusions to date

Since the beginning of the intervention, on average, families were asking for 1 kg. bag per month. Our study assumed that participants from each village will use salt exclusively for their personal (family) consumption. However, after 8 months, we realized the wide variation in the number of bags requested by families each month. This made us think that families were storing the salt for future use. Later, we learned from our project staff that some participants were sharing the salt with relatives from other villages. We are now in the process of confirming this data through a qualitative study to explore family networks and salt distribution.

Publications:

Bernabe-Ortiz A, Diez-Canseco F, Gilman RH, Cardenas MK, Sacksteder KA, Miranda JJ. Launching a salt substitute to reduce blood pressure at the population level: a cluster randomized stepped wedge trial in Peru. *Trials*. 2014;15(1):93. Saavedra-Garcia L, Bernabe-Ortiz A, Gilman RH, Diez-Canseco F, Cárdenas MK, Sacksteder KA, et al. Applying the Triangle Taste Test to Assess Differences between Low Sodium Salts and Common Salt: Evidence from Peru. *PLoS ONE* 2015;10(7):e0134700.

HT12: Task shifting and blood pressure control in Ghana - a cluster-randomized trial

Funded by: NHLBI, NIH; *Duration:* 5 years

Study location: Ghana

Investigators

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Kingsley Apusiga, BSc, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

Abstract:**Primary research aim**

Countries in sub-Saharan Africa (SSA) are experiencing an epidemic of cardiovascular disease (CVD) propelled by rapidly increasing rates of hypertension. Barriers to hypertension control in SSA include poor access to care and high out-of-pocket costs. Although SSA bears 24% of the global disease burden, it has only 3% of the global health workforce. Given such limited resources, cost-effective strategies, such as task shifting, are needed to mitigate the rising CVD epidemic in SSA. Ghana, a country in SSA with an established community health worker program integrated within a national health insurance scheme provides an ideal platform to evaluate implementation of the World Health Organization (WHO) task-shifting strategy. This study will evaluate the comparative effectiveness of the implementation of the WHO Package targeted at CV risk assessment versus provision of health insurance coverage, on blood pressure (BP) reduction.

Research objectives and methodology

Using a cluster randomized design, 32 community health centers (CHCs) and district hospitals in Ghana will be randomized to either the intervention group (16 sites) or the control group (16 sites). A total of 640 patients with uncomplicated hypertension (BP 140-179/90-99 mmHg and absence of target organ damage) will be enrolled in this study (20 patients per site). The intervention consists of WHO Package of CV risk assessment, patient education, initiation and titration of antihypertensive medications, behavioral counselling on lifestyle behaviours, and medication adherence every three months for 12 months. The primary outcome is the mean change in systolic BP from baseline to 12 months. The secondary outcomes are rates of BP control at 12 months; levels of physical activity, percent change in weight, and dietary intake of fruits and vegetables at 12 months; and sustainability of intervention effects at 24 months. All outcomes will be assessed at baseline, six months and 12 months. Trained community health nurses will deliver the intervention as part of Ghana's community-based health planning and services (CHPS) program. Findings from this study will provide policy makers and other stakeholders needed information to recommend scalable and cost-effective policy with respect to comprehensive CV risk reduction and hypertension control in resource-poor settings.

Current status

We have recruited and randomized 32 health facilities (16 district hospitals, 16 health centers) into four cohorts; and trained 64 community health nurses (CHNs) in hypertension diagnosis and treatment of uncomplicated cases. Baseline recruitment is complete with a total of 757 patients. Preliminary baseline data analyses is underway. Final patient recruitment was ~18% more than the estimated recruitment target of 640. A total of 651 patients have completed 12 months follow up with an 86% overall retention rate. 24 months follow up is currently on-going.

Conclusions to date

Keeping community health nurses abreast of study protocol and measurements by conducting bi-annual group re-training and onsite refresher trainings regularly may help to ensure study fidelity across sites. Some of our challenges include: maintaining high retention rates for usual care group who receive only health insurance; additionally, some nurses find it difficult to maintain patient documentations since that has not been part of their regular job. Lastly, transitioning patients back to usual care post trial intervention termination, has been a challenge due to Ghana's National Health Insurance Scheme (NHIS) policy that restrict certain facilities from prescribing certain classes of antihypertensives.

Publications:

Iwelunmor J, Airhihenbuwa CO, Cooper R, Tayo B, Plange-Rhule J, Adanu R, et al. Prevalence, determinants and systems-thinking approaches to optimal hypertension control in West Africa. *Global Health*. 2014;10:42. doi:10.1186/1744-8603-10-42.

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Ogedegbe G, Plange-Rhule J, Gyamfi J, Chaplin W, Ntim M, Apusiga K, et al. A cluster-randomized trial of task shifting and blood pressure control in Ghana: study protocol. *Implement Sci*. 2014;9:73. doi:10.1186/1748-5908-9-73.

Iwelunmor J, Plange-Rhule J, Airhihenbuwa CO, Ezepue C, Ogedegbe O. A Narrative Synthesis of the Health Systems Factors Influencing Optimal Hypertension Control in Sub-Saharan Africa. *PLOS ONE*. 2015 Jul 15;10(7):e0130193. doi: 10.1371/journal.pone.0130193.

Iwelunmor J, Blackstone S, Gyamfi J, Airhihenbuwa C, Plange-Rhule J, Tayo B, Adanu RMK, Ogedegbe G. A concept mapping study of physicians' perceptions of factors influencing management and control of hypertension in Sub-Saharan Africa in Sub-Saharan Africa. Accepted for Publication in *International Journal of Hypertension* Sept. 20, 2015.

HT13: Optimizing linkage and retention to hypertension care in rural Kenya

Funded by: NHLBI, NIH; *Duration:* 5 years

Study location: Kenya

Investigators

Pls

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Abstract:

Primary research aim

The objective of this project is to utilize a multi-disciplinary implementation research approach to address the challenge of linking and retaining hypertensive individuals to a hypertension management program.

Research objectives and methodology

1. Identify the facilitators and barriers to linking and retaining individuals with high blood pressure to a hypertension care delivery program, using a combination of qualitative research methods:
 - a. Using identified facilitators and barriers, develop a tailored behavioral communication strategy guided by the Health Belief Model.
 - b. Using identified facilitators and barriers, develop a smartphone-based tool linked to the AMPATH Medical Record System (AMRS) to be used by CHWs to optimize linkage and retention of hypertensive patients to the care program, and evaluate the usability and feasibility of this tool.
2. Evaluate the effectiveness of CHWs equipped with a tailored behavioral communication strategy and a smartphone-based tool in improving linkage and reducing blood pressure among hypertensive patients, by conducting a cluster randomized trial comparing:
 - a. Usual care (CHWs with standard training on recruitment of individuals with any chronic condition).
 - b. CHWs with an additional tailored behavioral communication strategy.
 - c. CHWs with a tailored behavioral communication strategy and also equipped with smartphone-based tool linked to the AMRS.
3. Evaluate the incremental cost-effectiveness of each intervention arm of the cluster randomized trial. The co-primary outcome measures will be:
 - a. Documented linkage to care following home-based testing.
 - b. One year change in systolic blood pressure among hypertensive individuals.

Current status

- Behavioral Assessment tools and Communication Strategy having been finalized, they are in use.
- Tablets for Research Assistants, and Smartphones, protective covers and sim cards for the Community Health Workers have been procured. Other items procured: Blood Pressure Machines, weight/height meter scales.
- mUzima platform for smartphone app has been developed and is operational.
- Protocol for usability and feasibility testing was developed and finalized, yet to be administered after Community Health Workers getting adequate experience with smartphone use.
- Trainings of the Community Health Workers and Community Health Extension Workers on: Overview of LARK study, Hypertension, Behavioral Assessment tools and Communication Strategy as well as Motivational Interviewing was carried out. Tech-arm CHWs have received additional smartphone-based training.

- Data management plan; Development of Data Management protocol, SAS script as well as concept dictionary is ongoing
- Year Four study IREC approval was obtained
- Programming Function. Programming of the study Behavioural Assessment questionnaires was accomplished which paved way for roll-out of the study in smartphone arm.
- Roll-out/Participant enrolment, by end of August, 15, we have initiated enrolment in 23 Community Units (CUs) out of a total of 24 CUs. The cumulative enrolment by 31st Aug, 15 is 1,119.
- Refresher training for Community Health Workers (CHWs) and Community Health Extension Workers (CHEWs) will be initiated based on Process Evaluation outcome
- Aim 3 (cost-effectiveness analysis)
 - Administration of Costing questionnaire (both electronic and paper-based forms) is on-going
 - Real-time entry on
 - Data entry is on-going for the initial paper-costing questionnaires
 - Preliminary analyses to be sought once data cleaning/entry is done
 - 12 months costing follow-up for the costing questionnaire is on-going.
- Aligning LARK study with Process Evaluation: to ascertain the fidelity of the study protocol, various tools to be utilized in the exercise have been developed which include: Objective Structured Clinical Examinations (OSCEs), CHWs' Written Tests, Focus Group Discussion (FGD) Guide for both CHWs & Hypertensive patients as well as System Usability Testing aligned with subsequent development of Redcap databases where applicable. IREC approval too to partake the exercise was obtained on April 14, 2015.
 - OSCEs; 26 OSCEs has been done out of a target of 40, the remaining 14, will be done in smartphone arm
 - FGDs with CHWs & 1 FGD with HTN patients have been done. Target: A total of 6 FGDs with CHWs & 8 FGD with HTN patients
 - Written Tests & Usability Testing have been embedded in the process evaluation
 - Data Entry & Transcription: On going- 17 OSCEs entered out of 26, 3 transcription done
- Personnel Capacity Building:
 - Three of the study personnel underwent a short course on International Health Research Ethics.
 - The whole study team attended a one day Qualitative training led by Dr. V. Naanyu (Moi University) as well as Objective Structured Clinical Examination (OSCEs)-Process evaluation led by Debra Litzelman (Indiana University) in preparation for Process Evaluation
 - Evon trainings/Brown visit
 - Evon Okidi-LARK Biostatistician travelled to Brown for the training and mentoring program on May15th to June15 2015
 - Next Steps: Study personnel to be considered for any future trainings/workshops
 -
- Faculty (PIs/Co-PIs/Trainees) Visits (to Eldoret), we have had several visits by Faculty.
- Papers/publications/posters
 - Qualitative paper 1 is being revised after external peer review comments by JGIM
 - Abstract titled “Perceptions of the Role of CHWs in HTN Management: A Qualitative Analysis of the LARK Hypertension Study” was accepted as an e-abstract to the AHA conference in November, 15.
 - “Content Validity of a Behavioural Assessment Tool for Optimizing Linkage and Retention to Hypertension Care in Kenya (LARK Hypertension Study)” was accepted as a poster to the AHA conference in November, 15.

Conclusions to date

Challenges

- Ministry of Health Activities that are done concurrently with the study activities have impacted negatively on study deliverable especially on timelines
- Personnel related challenges i.e. Study Data Manager, Biostatistician and Java Programmer resignation
- Data-related challenges cutting across the databases, server, data collection and entry
- Pronounced delays in programming function and associated delays in implementation and utilization
- Delays in administrative and procurement processes due to new system (Ampath Transformational Project (ATP)) being implemented and associated initial slowness.
- Enrollment difficulties

Next Steps/Six Months

- Scale up the roll-out process to the one remaining community unit.
 - Continue with the participants enrolment aligned with Data Entry (both real-time & manual for both Costing & BA)
 - Continue with the 12 months costing follow up
 - Scale up Process Evaluation
 - Finalize Data Management Protocol & SAS script Development detailing periodic updates with respect to query of AMRS, VM server using IDs, Data Dictionary, Integrity checks among others
 - Hire Data Manager and a Research Assistant
 - Pursue Error Resolution/Prevention
 - Training of CHWs and CHEWs: Refresher training will be initiated based on Process Evaluation outcome
 - Analyses of baseline dataset
 - Analyses of f/u dataset
 - Abstracts, manuscripts
-

Publications:

Blank E, Tuikong N, Misoi L, Kamano J, Hutchinson C, Kimaiyo S et al. Usability of implementing a tablet-based decision support and integrated record-keeping (DESIRE) tool in the nurse management of hypertension in rural Kenya. *Stud Health Technol Inform.* 2013;192:1002.

Vedanthan R, Kamano JH, Naanyu V, DeLong AK, Were MC, Finkelstein EA et al. Optimizing linkage and retention to hypertension care in rural Kenya (LARK hypertension study): study protocol for a randomized controlled trial. *Trials.* 2014;15(1):143. doi:10.1186/1745-6215-15-143.

HT14: Comprehensive approach to hypertension and control in Argentina

Funded by: NHLBI, NIH; *Duration:* 5 years

Study location: Argentina

Investigators

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Abstract:

Primary research aim

The primary research aim is to test whether a comprehensive intervention program within a national public primary healthcare system will improve hypertension control among uninsured hypertensive patients and their families in Argentina.

Research objectives and methodology

The research objectives are to test whether a comprehensive intervention program will lower blood pressure and improve hypertension control among uncontrolled hypertensive patients over an 18-month period compared to usual care and to estimate the cost-effectiveness of the comprehensive intervention program compared to usual care. A cluster randomized trial design will be used to randomize 18 public primary care clinics to the intervention and control groups. The trial is recruiting 2,000 clinic patients with uncontrolled hypertension, their spouses and hypertensive family members. The 18-month comprehensive intervention program will target the primary care system through health care provider education, a home-based intervention among patients and their families (home delivery of antihypertensive medication, self-monitoring of blood pressure, health education for medical adherence and lifestyle modification) conducted by community health workers and a mobile health intervention.

Current status

The comprehensive intervention program and data collection are ongoing and quality control measures are regularly being conducted. To date, of the 1,951 participants enrolled, 26% of have finished the study, 93% have completed a 6 month follow-up and 75% have completed a 12 month follow-up.

Conclusions to date

We currently have no conclusions to date as the data collection is still ongoing.

Publications:

Mills KT, Rubinstein A, Irazola V, Chen J, Beratarrechea A, Poggio R et al. Comprehensive approach for hypertension control in low-income populations: rationale and study design for the hypertension control program in Argentina. *The American journal of the medical sciences*. 2014;348(2):139-45. doi:10.1097/MAJ.000000000000298.

HT15: Tailored Hospital-based Risk Reduction to Impede Vascular Events after Stroke (THRIVES)

Funded by: NIH, NINDS; *Duration:* 5 years

Study location: Nigeria

Investigators

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Salina Waddy, National Institute of Neurological Disorders and Stroke, Bethesda, United States

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Abstract:

Primary research aim

The need to improve stroke preventative care is particularly pressing in developing countries where resources are few and the burden of stroke is disproportionately heavy. The overall aim of Tailored Hospital-based Risk Reduction to Impede Vascular Events after Stroke (THRIVES) is to determine whether a culturally-sensitive multipronged post-discharge intervention can significantly reduce blood pressure, enhance achievement of guideline recommended targets for risk factor control, and lower recurrent vascular events in Nigeria. THRIVES has unfolded into five distinct phases:

- Pretest qualitative
- Main qualitative (focus group discussions and semi-structured interviews)
- Intervention tailoring and redesign
- Randomized clinical trial
- Translation to institutional/governmental policy

Research objectives and methodology

The research objective for the RCT phase of the THRIVES project is to conduct a randomized clinical trial of the developed THRIVES intervention vs. standard post discharge management in stroke patients discharged from four hospitals in Nigeria. The primary outcome will be a significant reduction in systolic blood pressure at one year. Other study objectives will evaluate whether the intervention shows a signal of potential efficacy in reducing the rate of subsequent primary vascular events and investigate whether the intervention compared with usual and customary care will reduce functional disability and enhance quality of life at one year. The final objective is to estimate, in a preliminary fashion, the cost-impact and cost-effectiveness of the THRIVES post discharge intervention, compared with usual and customary care. The multi-pronged intervention involves the use of a patient video therapy, patient report card, and text messages. The patient interactive video therapy will be adapted and produced in three languages (English, Yoruba and Pidgin English) in tandem with the primary languages of the study population. A THRIVES Task Force will evaluate and review all materials produced.

Commencement of RCT phase of THRIVES study

The pre-test qualitative, main qualitative, and intervention tailoring phases are complete. With the data provided through semi-structured interviews, focus groups and a community based task force, the patient tools were refined to be culturally appropriate (the tools are relevant, easy to read/use, and informative).

Prior to the commencement of the RCT phase of THRIVES study, specific strategies ranging from provision of Technical Advice, Advocacy and Capacity building were incorporated in a bid to ensure a smooth implementation process. With respect to provision of technical advice, consecutive, intensive and rigorous intervention validations sessions were conducted and championed by a multidisciplinary committee (task force committee) comprising physician investigators, statisticians, pharmacists, educators, social workers, nurses, telecommunication experts, dieticians, physical therapists, administrators, and religious, community representatives, government and Nigerian Stroke Society. Constituted to review and make recommendations to the RCT phase of THRIVES study, THRIVES intervention (patient report card, mobile text messaging and in-clinic educational video) underwent refinement and validation. As a result, the interventions evolved to a readable patient report card with targets reflecting evidence based stroke risk factor control recommendations, clarification of personnel responsible for specific tasks; identification of cost effective structures appropriate for delivery of messages, and for the video the development of dynamic educational tool consistent with the African culture and lifestyle.

Pilot testing of the refined report card was carried out among non-stroke patients at the University College Hospital, Nigeria by neurologists in the study. From an advocacy point of view, a familiarization visit was paid earlier this year to key stakeholders at the University College Hospital, Ibadan, Nigeria by the Principal Investigator of THRIVES study. He solicited the stakeholders' unflinching support for the second phase of THRIVES study. Furthermore, capacity building sessions were conducted for specific subsets of personnel who will be involved in the study. Trained by an array of specialists and investigators on the study, blinded adjudicators with background in public health were sensitized to the need to collect independent and objective outcome data from enrolled subjects at the various time points of the study. In addition, all clinicians across all four sites of the study were brought up to speed with expectations and assigned tasks in the course of the study.

Current status of RCT Phase of THRIVES

Recruitment of potential subjects have begun in earnest from the four study sites in Nigeria. This is made easier from an updated stroke subject's database that has been in construction since the onset of the project. Subjects are being consented and enrolled. Till date about 235 potential subjects have been screened. Out of this figure, 201 subjects have been enrolled into the study. This

phase of the project will provide data on the efficacy of the study tools (in-clinic educational video, patient report card, and text messages).

Although implementation of this phase of this study have significantly commenced, it has not been without challenges. Two major industrial action (strikes) were embarked upon by the health sector in Nigeria: at commencement of the study in 2014 and for over 100 days in the second quarter of 2015. The strikes which occurred at those periods stalled the rate and pace of subject recruitment and enrolment into the study. However, with the suspension of the industrial action, recruitment and enrolment have improved though steadily.

Baseline findings on THRIVES study

Current baseline findings reveals a preponderance of male (64.4%) to female (35.6%) gender being enrolled into the study. Although minimum and maximum age of subjects is 30 and 81years respectively, mean age is at 57.01 ± 10.5 years while about 66% of subjects are aged 50-69 years. Majority (91.0%) are affiliated to the Yoruba ethnic with only 9.0% belonging to a minority (Ibo) group. With respect to education, more than half (50.8%) have bagged a higher/university degree; over 30.0% a secondary, 13.0% a primary level of education. Only 5.1% have no form of education. A vast majority (97.7%) are urban dwellers with only over 2.0% subjects residing in the rural areas. A little over half (55.4%) of subjects have ischemic while 44.6% have ICH (haemorrhagic) type of stroke. More than half (82.5%) of respondents have >120 systolic while 59.9% have >80 diastolic blood pressure. Mean systolic BP stands at 142.1 ± 24.9 with the diastolic at 85.1 ± 17.0 .

The study have about four publications with two additional awaiting acceptance from sent journals. See reference section below for further details.

References:

Owolabi MO, Akinyemi RO, Gebregziabher M, Olaniyan O, Salako BL, Arulogun O, et al. Randomized controlled trial of a multipronged intervention to improve blood pressure control among stroke survivors in Nigeria. *International journal of stroke : official journal of the International Stroke Society*. 2014; 9(8): 1109-16

Owolabi MO, Akinyemi RO, Hurst S, Arulogun O, Olaniyan O, Gebregziabher M, et al. Tailored Hospital-based Risk Reduction to Impede Vascular Events After Stroke (THRIVES) study: qualitative phase protocol. *Critical pathways in cardiology*. 2014; 13(1): 29-35

Hurst S, Arulogun OS, Owolabi AO, Akinyemi R, Uvere E, Warth S, Ovbiagele B. Pretesting Qualitative Data Collection Procedures to Facilitate Methodological Adherence and Team Building in Nigeria. *Int J Qual Methods*. 2015; 14:53-64.

Olaniyan et al 2015. Cost and cost-effectiveness analysis of a bundled intervention to enhance outcomes after stroke in Nigeria: Rationale and design. Accepted for publication at the *eNeurologicalSci journal*

Arulogun et al 2015. Impact of Task Force Involvement in the Development and Implementation of a Culturally Sensitive THRIVES Intervention program in Nigeria. Submitted and awaiting acceptance

Appendix

GACD diabetes baseline prevalence data dictionary

1. Demographic Measures

Field	Code	Description	Question Guide	Answer Code	Acceptable Range/ Field type	Req'd?
SIDNO	DEM0	Site ID number	Site Identification as assigned by GACD?			
PIDNO	PIDNO	Participant ID Number	Unique participant ID number assigned by study site			Y
PAGE_Yr	DEM1	Participant Age in years <i>WHO STEPS protocol: Full instructions here on page 5-2-2</i>	How old are you? Don't know code 777 <i>Record age in years as stated by respondent</i>	NNN	numeric	
PAGE_DOB	DEM1A	Participant Date of Birth <i>WHO STEPS protocol: Full instructions here on page 5-2-2</i>	What is your date of birth? Don't know code 77777777 <i>Record date of birth as stated by respondent in US format</i>	MM/DD/YYYY	date	
PAGE_PROXY	DEM1B	Participant age estimated <i>WHO STEPS protocol: Full instructions here on page 5-2-2</i>	Based on significant event calendar? <i>Record age in years as calculated based on age at significant event</i>	NNN	numeric	
SEX	DEM2	Participant sex <i>WHO STEPS protocol: Full instructions here on page 5-2-2</i>	Sex of Participant – Male/female <i>Record sex of respondent as observed</i>	Male=1 Female =2	numeric	Y
EDUC	DEM3	Highest participant	In total, how many years have you spent at school or in full time study	NNN	numeric	Y

		education <i>WHO STEPS protocol: Full instructions here on page 5-2-2</i>	(excluding pre-school)? <i>Record total number of years of education excluding pre-school and kindergarten)</i>			
HSESIZE	DEM4	Household size <i>WHO STEPS protocol: Full instructions here on page 5-2-2.</i>	How many people older than 18 years, including yourself live in your household <i>Add share the same kitchen if culturally appropriate Record total number of people living in the household (or sharing the same kitchen ?country specific definition of household) who are 18 years of age or older</i>	NN	1 – 100 numeric	Y
HSEINC	DEM5a DEM5b DEM5c DEM5d	Household Income <i>WHO STEPS protocol: Full instructions here on page 5-2-3.</i>	Taking the past year, can you tell me what the average earnings of the household have been? <i>(RECORD ONLY ONE, NOT ALL 3) Enter the average earnings of the household by week, month, or year. If refused to answer, code 88 and skip to CLIN1.</i>	NNNNNNN Week NNNNNNN Month NNNNNNN Year 88 Refused	DEM5a DEM5b DEM5c DEM5d numeric	

2. Dietary Measures

Field Name	Code	Description	Question Guide Guidance derived from http://www.fao.org/docrep/014/i1983e/i1983e00.pdf	Answer Code	Acceptable Range/ Field type	Entry required
SALT	DIET1	Added salt	Do you add salt to your food/drinks at the table before eating/ drinking Never Rarely Sometimes Often Always 88. Refused 99. Don't know	Never Rarely Sometimes Often Always 88. Refused 99. Don't know		
SALT	DIET2	Added salt	In the food you eat at home salt is added in cooking: Never Rarely Sometimes Often Always I don't know, I don't do the cooking 88. Refused	Never Rarely Sometimes		

				Often Always I don't know, I don't do the cooking 88. Refused		
SALT	DIET3	Added salt	How many times per day do you eat salty food or snacks?	NN times 77 don't know	0 – 50 numeric	Y
SALT	DIET4	Added salt	How much salt do you think you consume? (READ LIST) Far too much Too much Just the right amount Too little Far too little Don't Know Refused	Far too much Too much Just the right amount Too little Far too little Don't Know Refused		
SALT	DIET5	Added salt	On average how many teaspoons of salt do you add to your food each day <u>before eating (count salt in sauces and spices if possible)? Use level standard teaspoon measure (approx. 5ml) to demonstrate amount of all the salt participant adds in total to their meals over the day</u>	NNN tsp	0 – 20 numeric	
NUTRI	DIET6	Fruit consumption	In a typical week, on how many days do you eat fruit? (USE SHOWCARD) available here , 5-3-7 Ask the participant to think of any fruit on the showcard. A typical week means a "normal" week when the diet is not affected by cultural, religious, or other events. Ask the participant to not report an average over a period. If 0 days go to DIET4	NN days 77 don't know	0 – 7 numeric	Y

NUTRI	DIET7	Fruit consumption	How many servings of fruit do you eat on one of those days <i>(USE SHOWCARD) available here,5-3-7 Ask the participant to think of one day they can recall easily. Refer to the showcard for serving sizes</i>	NN servings 77 don't know	0 – 7 numeric	Y
NUTRI	DIET8	Vegetable consumption	In a typical week, on how many days do you eat vegetables? <i>(USE SHOWCARD) available here,5-3-7 Tubers such as potatoes and cassava should not be included Ask the participant to think of any vegetable on the showcard. A typical week means a "normal" week when the diet is not affected by cultural, religious, or other events. Ask the participant to not report an average over a period. If 0 days go to DIET6</i>	NN days 77 don't know	0 – 7 numeric	Y
NUTRI	DIET9	Vegetable consumption	How many servings of vegetables do you eat on one of those days <i>(USE SHOWCARD) available here,5-3-7 Ask the participant to think of any vegetable on the showcard. A typical week means a "normal" week when the diet is not affected by cultural, religious, or other events. Ask the participant to not report an average over a period.</i>	NN days 77 don't know	0 – 7 numeric	Y
NUTRI	DIET10	Vegetable consumption	How many meals per week contain fried vegetables?	NN meals 77 don't know	0 – 25 numeric	Y
NUTRI	DIET11	Protein consumption	How many meals per week do you eat meat and/or poultry (include organ meat, flesh meat)	NN meals 77 don't know	0 – 25 numeric	Y
NUTRI	DIET12	Protein consumption	How many meals per week include fish (fresh, dried or shell fish)	NN meals 77 don't know	0 – 25 numeric	Y
NUTRI	DIET13	Protein consumption	How many meals per week include nuts, legumes or seeds	NN meals 77 don't know	0 – 25 numeric	Y
NUTRI	DIET14	Dairy consumption	How many times per week do you eat dairy products (milk, cheese, yogurt or other milk products)	NN times 77 don't know	0 – 50 numeric	Y
NUTRI	DIET15	Fried food consumption	How many times per week do you eat deep fried foods, snacks or fast foods?	NN times 77 don't know	0 – 50 numeric	Y

NUTRI	DIET16	Food Preparation	What type of oil or fat is most often used for meal preparation in your household? (<i>SELECT ONLY ONE</i>) <i>Select the appropriate response</i>	Vegetable Oil - 1 Lard or Suet - 2 Butter or Ghee - 3 Margarine - 4 Other - 5 (specify) None in particular - 6 None used - 7 Don't know - 77	numeric	Y
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3. Clinical and Anthropometry Measures

BLOOD PRESSURE: WHO STEPS protocol: <i>Full instructions here on page 3-3-5</i> Suggested method for all teams to use is STEPS, if not included in full protocol use STEPS for a proportion of your study population to allow cross site comparison Equipment required: • Digital automatic blood pressure monitor, e.g. OMRON • Appropriate size cuffs. Participant to rest for 15 minutes with legs uncrossed. Three blood pressure measurements should be taken with three minutes of rest between readings. Calculate the mean of the second and third readings. Measure blood pressure in mmHg. Collect pulse rate along with blood pressure measurements. Calculate the mean of the second and third readings. Measure the pulse rate in beats per minute. Inform the participant the blood pressure readings only after the whole process is completed.						
Field Name	Code	Description	Question Guide	Answer Code	Acceptable Range/ Field type	Entry required
DEVICEID	CLIN1		Record Device ID	NNN		
CUFF SIZE	CLIN2		Select appropriate cuff size by arm circumference Small = arm circumference 17- 22 cm Medium = arm circumference 22-32 cm Large = arm circumference >32 cm Extra-large = arm circumference too big for large cuff	Small = 1 Medium = 2 Large= 3 Extra-large = 4	numeric	Y
BPSYS	CLIN3	Systolic Blood	Mean of second and third reading Reading 1_ NNN Reading 2_ NNN	NNN	40 - 300	Y

		pressure	Reading 3_ NNN	mmHg		
BPDIA	CLIN4	Diastolic Blood Pressure	Mean of second and third reading Reading 1_ NNN Reading 2_ NNN Reading 3_ NNN	NNN mmHg	30 - 200	Y
PULSE	CLIN5	Pulse rate	Mean of second and third reading (beats per minute) Reading 1_ NNN Reading 2_ NNN Reading 3_ NNN	NNN BPM	30 - 200	Y
<p>HEIGHT: WHO STEPS protocol: <i>Full instructions here on page 3-3-8</i> Equipment required: • A portable height/length measuring board Ask participant to remove their footwear and any head gear. (If it would be insensitive to seek removal of a scarf or veil, the measurement may be taken over light fabric). Participant to stand with their feet together, heels against the backboard and knees straight. Participant to look straight ahead, not tilt their head up and ensure eyes level with ears. Move the measure arm gently down onto the participant’s head and request that they breathe in and stand tall, measure once in centimetres.</p>						
Field Name	Code	Description	Question Guide	Answer Code	Acceptable Range/ Field type	Entry required
Device ID	CLIN6	Stadiometer/ measure ID	Record Device ID	NNN		
HGT	CLIN7	Participant height	Record participant height in cm with one decimal point	NNN. N (cm)	75 – 220 Numeric	y
<p>WEIGHT: WHO STEPS protocol: <i>Full instructions here on page 3-3-9</i> Equipment required: • Portable electronic weighing scale • A stiff wooden board to place under the scales (to reduce effects of uneven surfaces) • Power supply or batteries for the scales Place the scale on a firm, flat surface. Participant to remove their footwear and socks and step onto the scale. Ensure the participant stands still, faces forward, places arms by their side. Measure the weight once and record in kilograms.</p>						
Field Name	Code	Description	Question Guide	Answer Code	Acceptable Range/ Field type	Entry required
Device ID	CLIN8	Scale ID	Record Device ID	NNN		
WGT	CLIN9	Participant weight	Record participant weight in kg with one decimal point If too large for scale 777.7	NNN.N (kg)	20.0 – 200.0 or 777.7 Numeric	Y
<p>WAIST CIRCUMFERENCE: WHO STEPS protocol: <i>Full instructions here on page 3-3-11</i> Equipment required: • Constant tension tape (for example, Figure Finder Tape Measure) • Pen • Chair or coat stand for participants to place their clothes. This measurement should be taken in a private area, either without clothing or over light clothing. Measure at the midpoint of the last palpable rib and top of hip bone. Check that the tape is placed horizontally. Participant to stand with their feet together and hold the arms in a relaxed position by their sides. Participant should breathe normally for a few breaths, and then make a normal expiration. Measure waist circumference once to the nearest 0.1 cm.</p>						

Field Name	Code	Description	Question Guide	Answer Code	Acceptable Range/ Field type	Entry required
Device ID	CLIN10	Scale ID	Record Device ID	NNN		
WACIR	CLIN11	Waist Circumference	Record participant waist circumference in cm with one decimal point	NNN.N (cm)	30 – 300 numeric	Y
HIP CIRCUMFERENCE: <i>WHO STEPS protocol: Full instructions here on page 3-3-13</i> Equipment required: • Constant tension tape (for example, Figure Finder Tape Measure) • Pen • Chair or coat stand for participants to place their clothes. This measurement should be taken in a private area, either without clothing or over light clothing. Measure around the maximum circumference of the buttocks. Participant to stand with feet together and hold their arms relaxed at the sides. Check that the tape is placed horizontally. Measure hip circumference once to the nearest 0.1 cm.						
Field Name	Code	Description	Question Guide	Answer Code	Acceptable Range/ Field type	Entry required
Device ID	CLIN12	Scale ID	Record Device ID	NNN		
HIPCIR	CLIN13	Hip Circumference	Record participant hip circumference in cm with one decimal point	NNN.N (cm)	30 – 300 numeric	Y

4. Medical History

Participant history of Hypertension and use of antihypertensive medication: <i>WHO STEPS protocol: Full instructions here on page 5-2-11</i>						
Field Name	Code	Description	Question Guide	Answer Code	Acceptable Range/ Field type	Entry required
HTNHIST	MED1	History of hypertension	Have you ever been told by a doctor or other health worker that you have raised blood pressure or hypertension? Yes = 1 No = 2 <i>If participant does not know or is unsure code = 7</i>	Yes = 1 No = 2 Don't know/ unsure = 7	1 -2 or 7 numeric	Y
HTNMED	MED2	Hypertension Medication	In the past two weeks, have you taken any drugs (medication) for raised blood pressure prescribed by a doctor or other health worker? Yes = 1 No = 2 <i>Ask the participant to only consider drugs for raised blood pressure prescribed by a doctor or other health worker, if possible interviewer to observe medication for confirmation If</i>	Yes = 1 No = 2 Don't know/ unsure = 7	1 -2 or 7 numeric	Y

			<i>participant does not know or is unsure code = 7</i>			
Participant History of Diabetes: WHO STEPS protocol: Full instructions here on page 5-2-11						
Field Name	Code	Description	Question Guide	Answer Code	Acceptable Range/ Field type	Entry required
DIABHIST	MED3	History of Diabetes	Have you ever been told by a doctor or other health worker that you have raised blood sugar or diabetes? Yes = 1 No = 2 <i>If participant does not know or is unsure code = 7</i>	Yes = 1 No = 2 Don't know/ unsure = 7	1 -2 or 7 numeric	Y
Participant History of Heart Disease or Stroke: WHO STEPS protocol: Full instructions here on page 5-2-12						
Field Name	Code	Description	Question Guide	Answer Code	Acceptable Range/ Field type	Entry required
CVD	MED4a	History of CVD	Have you ever been told by a doctor or other health worker that you have heart problems? Yes = 1 if yes go to MED 4 b & MED 4c No = 2 if No go to MED 5 If participant does not know or is unsure code = 7	Yes = 1 No = 2 Don't know/ unsure = 99	1 -2 or 99 numeric	Y
CVD	MED4b	History of CVD	Have you ever had coronary artery bypass surgery?	Yes = 1 No = 2 Don't know/ unsure = 99	1 -2 or 99 numeric	Y
CVD	MED4c	History of CVD	Have you ever had coronary angioplasty or a stent inserted	Yes = 1 No = 2 Don't know/ unsure = 99	1 -2 or 99 numeric	Y
Stroke	MED5	History of stroke	Have you ever been told by a doctor or other health worker that you have symptoms suggestive of a stroke? (eg weakness on one side of the body, visual disturbance, difficulty speaking or being understood)	Yes = 1 No = 2 Don't know/ unsure = 99	1 -2 or 99 numeric	Y

HTN			Have you ever been told by a doctor or other health worker that you have high blood pressure (hypertension)	Yes = 1 No = 2 Don't know/ unsure = 99	1 -2 or 99 numeric	Y
Diabetes	MED6	History of diabetes	Have you ever been told by a doctor or other health worker that you have diabetes (blood sugars)	Yes = 1 No = 2 Don't know/ unsure = 99	1 -2 or 99 numeric	Y
CKD	MED7	History of CKD	Have you ever been told by a doctor or other health worker that you have chronic kidney disease	Yes = 1 No = 2 Don't know/ unsure = 99	1 -2 or 99 numeric	Y

Participant Knowledge/Awareness of Hypertension <i>WHO STEPS protocol: Full instructions here on page 5-2-12</i>						
Field Name	Code	Description	Question Guide	Answer Code	Acceptable Range/ Field type	Entry required
HTNKNOW	KNO1	Knowledge of HTN <i>From Oliveria S etal 2005 JGenInternMed here</i>	What does the term Hypertension mean? <i>If participant does not know or is unsure code = 77</i>	High Blood Pressure =1 High level stress/ tension = 2 Nervous Condition =3 High Blood Sugar = 4 Overactivity = 5 Don't	1 -5 or 77 numeric	Y

				know = 77		
HTNKNOW	KNO2	Knowledge of HTN <i>From Oliveria S etal 2005 JGenInternMed here</i>	How dangerous is hypertension to your health? <i>If participant does not know or is unsure code = 77</i>	Extremely =1 Somewhat = 2 Not at all =3 Don't know = 77	1 -3 or 77 numeric	Y
HTNKNOW	KNO3	Knowledge of HTN <i>From Oliveria S etal 2005 JGenInternMed here</i>	Would lowering high blood pressure improve a person's health? <i>If participant does not know or is unsure code = 77</i>	Yes =1 No = 2 Somewhat =3 Don't know = 77	1 -3 or 77 numeric	Y
HTNAWARE	KNO4	Awareness of HTN <i>From Oliveria S etal 2005 JGenInternMed here</i>	Have you ever been told by a doctor or health care provider what your own blood pressure reading should be? <i>If participant does not know or is unsure code = 77</i>	Yes =1 No = 2 Don't know = 77	1 -2 or 77 numeric	Y
HTNAWARE	KNO5	Knowledge of HTN <i>From Oliveria S etal 2005 JGenInternMed here</i>	If told, what should your top number (systolic) be	<140 = 1 140 = 2 >140 = 3 Don't know = 77	1 -3 or 77 numeric	Y
HTNAWARE	KNO6	Knowledge of HTN <i>From Oliveria S etal 2005 JGenInternMed here</i>	If told, what should your bottom number (diastolic) be	>90 = 1 90 = 2 <90 = 3 Don't know = 77	1 -3 or 77 numeric	Y

5. Physical Activity

Physical Activity: Show cards are available here , while show cards specific to physical activity are available here .						
Field Name	Code	Description	Question Guide	Answer Code	Acceptable Range/ Field type	Entry required
GenPHYS	PHY1	physical activity	Are you physically active for more than 30 minutes 5 times a week or vigorously active 3 times per week? This includes physical activity during work, leisure or regular daily routine. Yes = 1 No = 2 Don't know == 99 [INSERT EXAMPLES] (USE SHOWCARD) available here . Ask the participant to think about all activities during work leisure or daily routine	Yes = 1 No = 2	1 -2 numeric	Y
GENPHYS	PHY2	physical activity	How much time do you spend walking or bicycling on a typical day? Ask the participant to think of a typical day he/she can recall easily in which he/she engaged in walking or cycling	HH:MM	00:30 – 10:00 numeric	Y
WHO STEPS PHYSICAL ACTIVITY: Sedentary behaviour: The following question is about sitting or reclining at work, at home, getting to and from places, or with friends including time spent sitting at a desk, sitting with friends, traveling in car, bus, train, reading, playing cards or watching television, but <u>do not include</u> time spent sleeping. [INSERT EXAMPLES] (USE SHOWCARD) available here .						
Field Name	Code	Description	Question Guide	Answer Code	Acceptable Range/ Field type	Entry required
SEDPHYS	PHY16	Sedentary behaviour	How much time do you usually spend sitting or reclining on a typical day? [INSERT EXAMPLES] (USE SHOWCARD) available here . Ask the participant to consider total time spent sitting at work, in an office, reading, watching television, using a computer, doing hand craft like knitting, resting etc. The participant should not include time spent sleeping.	HH:MM	00:30 – 10:00 numeric	Y

6. Behavioural Measures

Tobacco Use: *[INSERT EXAMPLES] (USE SHOWCARD) available [here](#) page 5-3-3 These questions are from <http://www.itcproject.org/surveys> International Tobacco Control Policy evaluation project*

Field Name	Code	Description	Question Guide	Answer Code	Acceptable Range/ Field type	Entry required
CIGCURR1	SMK1	Smoking/chewing tobacco use	Do you currently smoke cigarettes (filtered manufactured)/ hand rolled tobacco/ bidis (or local alternative eg cheroots, gurkha) Yes No <i>if NO go to SMK4</i> 99. Refused <i>[INSERT EXAMPLES] (USE SHOWCARD) available here page 5-3-3</i>	Yes No 99 refused		Y
TOBACCURR 2	SMK2	Smoking/chewing tobacco use	Do you currently use smokeless tobacco / chewing tobacco/ snuff Yes No <i>if NO go to SMK4</i> 99. Refused <i>[INSERT EXAMPLES] (USE SHOWCARD) available here page 5-3-3</i>	Yes No 99 refused		Y
TOBACFREQ	SMK3	Smoking/chewing tobacco use	On average how often do you use tobacco (smoking or smokeless) Less than once a week Once a week Twice a week 3 -5 times a week Every day or almost every day More than once a day Refused (Don't read) Don't know (Don't read)	Less than once a week Once a week Twice a week 3 -5 times a week Every day or almost every day More than once a day 88. Refused 99. Don't know		N
TOBACEVER	SMK4	Smoking/chewing tobacco use	Have you smoked 100 or more cigarettes or use smokeless tobacco 100 times or more over your lifetime? Yes No Refused (Don't read) Don't know (don't read)	Yes No 88 Refused 99 Don't		

				know		
TOBACPASSIVE	SMK5	Exposure to passive smoke from http://www.who.int/tobacco/media/en/jarvis.pdf	Is there anyone else living at home with you who smokes? Yes No Refused (Don't read) Don't know (don't read)	Yes No 88 Refused 99 Don't know		
Alcohol Use: [INSERT EXAMPLES] (USE SHOWCARD) available here page 5-3-6						
Field Name	Code	Description	Question Guide	Answer Code	Acceptable Range/ Field type	Entry required
ALCOHEVER	ALC1	Alcohol use	Have you EVER consumed any alcohol (beer, wine, spirits [INSERT LOCAL EXAMPLES]) Yes = 1 No = 2 88 Refused 99 Don't know (USE SHOWCARD) available here page 5-3-6 Ask the participant to think of any drinks that contain alcohol, with the exception of alcohol based medication that is taken due to health reasons If Yes answer ALC 2 & ALC 3 If No go to next section	Yes = 1 No = 2 88 Refused 99 Don't know	1 -2 , 88, 99 numeric	Y
ALCOH12month	ALC2	Alcohol use	Have you consumed any alcohol (beer, wine, spirits [INSERT LOCAL EXAMPLES]) within the past 12 months Yes = 1 No = 2 if NO go to ALC 4 88 Refused 99 Don't know (USE SHOWCARD) available here page 5-3-6 Ask the participant to think of any drinks that contain alcohol, with the exception of alcohol based medication that is taken due to health reasons If Yes answer ALC 2 If No answer ALC3	Yes = 1 No = 2	1 -2 numeric	Y
ALCOHfreq 12mth	ALC3	Alcohol use	During the past 12 months, how frequently have you had at least one standard alcoholic drink? (READ RESPONSES, USE SHOWCARD) available here page 5-3-6 For those that have consumed alcohol in the past 12months. A "standard drink" is the amount of ethanol contained in standard glasses of beer, wine, fortified wine such as sherry, and spirits. Depending on the country, these amounts will vary between 8 and 13 grams of ethanol. See showcard. available here page 5-3-6	Daily = 1 5 - 6 days/week = 2 1 - 4 days/week = 3 1 - 2 days/week = 4 1 - 3 days /month = 5 Less than once/month = 6	1 - 6 numeric	Y
ALCOHstop	ALC4	Alcohol cessation	Have you stopped drinking due to health reasons, such as a negative impact on your health or on the advice of your doctor or other	Yes = 1 No = 2	1 -2 numeric	Y

			health worker? Yes = 1 No = 2 <i>This question is for those participants that did not drink during the past 12 months, but that have drunk in their lifetime.</i>			
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7. Biochemical measures

Fasting Blood Glucose						
Field Name	Code	Description	Question Guide	Answer Code	Acceptable Range/ Field type	Entry required
FBGL	BGL1	Fasting blood glucose measure	During the past 12 hours have you had anything to eat or drink other than plain water. <i>Essential that fasting sample collected, if yes do not proceed</i>	Yes = 1 No = 2	1 -2 numeric	Y
FBGL	BGL2	Fasting blood glucose measure	Device ID	NNN	numeric	Y
FBGL	BGL3	Fasting blood glucose measure	Time of day specimen collected <i>Record time sample collected</i>	HH:MM Hours: minutes	numeric	Y
FBGL	BGL4	Fasting blood glucose measure	Fasting Blood glucose measure Choose units appropriate for device (mmol/L or mg/dL) <i>Essential that fasting sample collected, do not proceed if participant has not fasted</i>	NN.NN mmol/L NNNN.N mg/dL	numeric	Y
FBGL	BGL5	Fasting blood glucose measure	Today have you taken insulin or any other drugs (medications) that have been prescribed by a doctor or health worker for raised blood glucose (high sugars)	Yes = 1 No = 2	1 -2 numeric	Y
URINE	URN1	24 hr Urine	What is the 24 urine volume	NNNN.NN ml	0 - 50000	Y
URINE	URN2	24 hr urine	How complete is the 24 hour collection Complete Missed 1 collection Missed 2-4 collection Missed 5 -7 collections 88 refused on't know	Complete Missed 1 collection Missed 2-4 collection Missed 5 - 7	1-4, 88, 99 numeric	Y

				collections 88 refused 99 don't know		
URINE	URN3	Naconc	What is the Na concentration	NNN.NN mEq/L/day		

GACD Annual Research Network Meeting Poster Competition

Number	Poster title	Authors
1	Validation of SMS to promote foot temperature measurement and foot care in subjects with type 2 diabetes mellitus	Maria de los Angeles Lazo Porras
2	Influence of Interdisciplinary Task Force on Stroke Intervention Development	Raelle Saulson
3	Hypertension Knowledge Retention Among Community Health Workers in Rural Western Kenya: Process Evaluation of the LARK Hypertension Study	Saat Abraham Kimaru
4	Salt, Taste and Health: Exploring local perceptions around salt and hypertension	Maria Amalia
5	School-based intervention among Ecuadorian adolescents: effect of a cluster-randomized controlled trial on screen-time.	Greet Cardon
6	Tele-hypertension: development and evaluation of a decision support system for hypertension care	Daniel Vitório Silveira
7	Formative Phase of SMART2D project	Thandi Puoane
8	KnowSalt&Oil APP: One-Week Salt and Oil Estimation Evaluating Salt and Oil Intake and Sources for Family Members in China	Puhong Zhang
9	THAT Study: Telmsartan and Hydrochlorothiazide Antihypertensive Treatment study in high sodium intake population	Lei Sun
10	Association of usual duration of sleep, insomnia and snoring with prehypertension and hypertension in South Asia: Cross-sectional Analysis of the CARRS study	Roopa Shivashankar
11	Systematic medical assessment, referral and treatment for diabetes care in China using lay family health promoters	Jiachen Zhou
12	Enabling self-management of type-2-diabetes: our journey to carve out a community component for vulnerable urban areas in Stockholm	Meena Daivadanam
13	A sequential mixed methods study to explore non-physician health care worker training and pilot hybrid type 2	Rama Krishna

	effectiveness-implementation trial of a novel method of training	Guggilla
14	Findings from a process evaluation of an intervention using lay health workers to support primary care hypertension management in rural South Africa	Felix Limbani
15	Association of usual duration of sleep, insomnia and snoring with prehypertension and hypertension in South Asia: Cross-sectional Analysis of the CARRS study	Roopa Shivashankar

First Joint Publication: Behaviour change strategies for reducing blood pressure-related disease burden: findings from a global implementation research programme

Abstract

Background: The Global Alliance for Chronic Diseases comprises the majority of the world's public research funding agencies. It is focussed on implementation research to tackle the burden of chronic diseases in low- and middle-income countries and amongst vulnerable populations in high-income countries. In its inaugural research call, fifteen projects were funded, focussing on lowering blood pressure-related disease burden. In this study we describe a reflexive mapping exercise to identify the behaviour change strategies undertaken in each of these projects.

Methods: Using the Behaviour Change Wheel framework, each team rated the capability, opportunity, and motivation of the various actors who were integral to each project (e.g. community members, non-physician health workers, and doctors in projects focussed on service delivery). Teams then mapped the interventions they were implementing, and determined the principal policy categories in which those interventions were operating. Guidance was provided on use of the Behaviour Change Wheel to support consistency in responses across teams. Ratings were iteratively discussed and refined at several group meetings.

Results: There was marked variation in the perceived capabilities, opportunities, and motivation of the various actors who were being targeted for behaviour change strategies. Despite this variation, there was a high degree of synergy in interventions functions with most teams utilising complex interventions involving education, training, enablement, environmental restructuring, and persuasion oriented strategies. Similar policy categories were also targeted across teams particularly in the areas of guidelines, communication/marketing, and service provision with few teams focussing on fiscal measures, regulation and legislation.

Conclusion: The large variation in preparedness to change behaviour amongst the principal actors across these projects suggests that the interventions themselves will be variably taken up, despite the similarity in approaches taken. The findings highlight the importance of contextual factors in driving success and failure of research programmes. Forthcoming outcome and process evaluations from each project will build on this exploratory work and provide a greater understanding of factors that might influence scale-up of intervention strategies.

Keywords: implementation science, hypertension, behaviour change theory, collaborative research, low- and middle-income countries

Full paper available at www.gacd.org/projects/bcw_paper