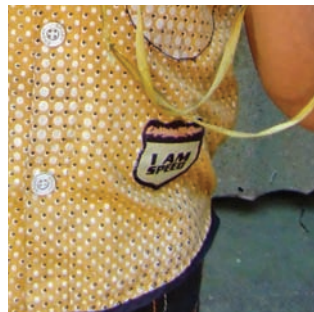
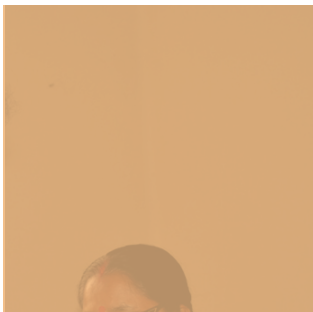


chronic disease news



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Editorial



Dear Readers,

Welcome to the tenth issue of Chronic Disease News. This is the newsletter of the Centre for Control of

Chronic Diseases (CCCD) of icddr,b. CCCD is a Centre of Excellence under the global network of UnitedHealth Group and National Heart, Lung and Blood Institute (NHLBI) of USA for combating non-communicable diseases from the developing countries.

In this issue we reported the findings of some recent studies on Prehypertension, COPD incidence and Childhood Asthma in Bangladesh. We are conducting studies in both rural and urban areas. Our aim is to find out ways for prevention and management of major risk factors for chronic diseases and the diseases themselves. We are working on developing appropriate intervention for the communities and strengthening the evidence base for policy formulation.

In 2013 CCCD had a number of activities involving dissemination of its research findings. In addition to its regular scientific seminars and meetings with the technical advisory group members, we organised two special dissemination seminars to share the findings of two national studies with the policymakers, professionals, researchers, funding agencies in the NCD sector. In September 2013, Dr. Cristina Rabadan-Diehl, Acting Director, Office of Global Health, NHLBI, visited the COE and CCCD researchers and fellows shared important study findings.

CCCD is determined to develop a skilled work force on NCD research in Bangladesh. We have so far trained 30 young researchers through our Certificate in Advanced Research Methods (CARM) programme. We also reinforced their knowledge and skills arranging overseas training for them. In this issue we have reported some of the capacity building efforts of this center.

I hope you will enjoy reading this issue and find this informative.

Dr. Dewan Shamsul Alam

Principal Investigator and Acting Director
Centre for Control of Chronic Diseases,
icddr,b

Dr. Dewan Shamsul Alam as Acting Director and Principal Investigator of CCCD

Dr. Dewan Shamsul Alam has been appointed as Acting Director of the Centre for Control of Chronic Diseases (CCCD), icddr,b and Principal Investigator of the Bangladesh Centre of Excellence under the UnitedHealth/NHLBI Global Chronic Disease Initiative. Prior to this appointment, he had been holding the position of Head, Non-communicable Disease (NCD) Unit at icddr,b since 2009. A medical doctor, Dr. Alam, is trained in epidemiology, public health and nutrition during his graduate, postgraduate and post-doctoral programmes.

Dr. Alam is Coordinator of CCCD's research group on Chronic Disease Epidemiology and Genetics. As Principal Investigator, he is leading a number of chronic disease research in areas of cardiovascular disease, respiratory diseases, diabetes and mental health problems. His areas of investigation include prevalence of specific chronic diseases, risk factors, health seeking behavior, interventions, and local and national health systems. He has also con-

ducted some pioneering research in the non-communicable disease areas in Bangladesh.

A veteran researcher at icddr,b, Dr. Alam has achieved continuous success in securing funding from various national and international agencies. He received a number of academic and research awards. He has a good track record of publication in international peer-reviewed journals. He is member of several international professional organisations and societies.

Dr. Alam is proficiently working to develop human resource to confront the rising trend of chronic diseases in Bangladesh. He serves as a faculty in Training and Education Department of icddr,b. He developed Epidemiology and Biostatistics courses for CCCD's Certificates in Advanced Research Methods (CARM) programme & teaches MPH graduates. In addition, he mentors junior scientists, fellows and PhD students in his research group.

He has strong research collaborations with renowned academic and research institutions at home and abroad. ■



Dr. Dewan Shamsul Alam

Childhood Asthma: Bangladesh Perspective

Asthma is a chronic lung disease that affects people of all ages, but it is the most prevalent chronic disease among children. Asthma causes recurring periods of wheezing (a whistling sound when the individual breathes), chest tightness, shortness of breath, and coughing. The coughing often occurs at night or early in the morning. Childhood Asthma is often confused with respiratory tract infections. If undiagnosed or undertreated, Childhood Asthma can possibly restrict individuals' activity for a life time creating a substantial burden to individuals and families.

In 2011, 235 million people around the world had been suffering from Asthma. Although asthma is a global problem recent studies indicate that the problem is more intense and increasing in low and middle income countries. Over 80% of asthma deaths occur in low and lower-middle income countries. In Bangladesh few studies have been conducted to estimate the burden of childhood asthma. A study from icddr,b reported 16.1% prevalence of wheezing in last 12 months among children of 60 to 71 months. Another study in urban and rural schools of Dhaka district showed 9.1% prevalence of wheezing among children of 6-7 years and 6.1% among children of 13-14 years.

The first national survey on asthma prevalence (NAPS-1999) in Bangladesh reported that more than 5% of the total population and 7.5% of 1-5 year old children were suffering from asthma. The report also indicated that the prevalence was higher in children of low-income, poorly educated rural and sub-urban groups compared to those from urban families. A more recent study revealed 3% greater prevalence of childhood asthma in coastal region compared to that of Dhaka city.

Center for Control of Chronic Diseases (CCCD) completed a community based study on "Childhood Asthma". The study was conducted to estimate the age and sex specific



Spirometry to determine lung function

prevalence of childhood asthma by spirometry. Spirometry is a test for determining lung function and it can play an important role to diagnose and manage asthma in children. However, there is limited use of spirometry by physicians in Asian countries.

To get the estimation from both rural and urban settings of the country, the study was conducted in icddr,b surveillance sites at Matlab, a rural area in Chandpur district and Kamlapur, a semi urban slum area in Dhaka. A total of 1056 children (511 boys and 545 girls) participated in the study.

The preliminary findings showed that the prevalence of self reported wheezing in last 12 months was 7.3% in Dhaka and 5.7% in Matlab. It was observed that children with wheezing had lower weight and height compared to children without wheezing. All three major parameters (FEV1- Forced expiratory volume in 1st second, FVC- Forced vital capacity and FEV1/FVC)

of lung function were less among wheezing children compared to children without wheezing.

Actual cause of asthma is not known, but allergens, indoor air pollutants and outdoor environmental factors are recognised as precipitating factors to develop asthma. Children with history of hereditary asthma are known to the risk of subsequent allergic sensitisation and ultimately bronchial asthma. To find out the inherited linkage, the study looked at the prevalence of asthma and eczema among the parents of study children. History of asthma or eczema was more in parents of wheezing children. Overall 5.1% participants reported that their mother had asthma and 5.3% children reported their father had asthma. For both cases, the rate is higher for the children having wheezing than the children without wheezing. Mothers of 13.2% children with wheezing also suffered from eczema whereas the rate is 8.8% for the fathers.

Acute lower respiratory tract infections (ALRI) is also a risk factor and young children are mostly exposed to particulate matters in smoke of biomass fuel causing lower and upper respiratory tract infections which lead to bronchial asthma. Exposure to environmental tobacco smoke, low socio-economic condition and domestic crowding are also major risk factors for asthma among children.

Due to its chronic nature, childhood asthma results in a huge economic burden on families and health system. It has also been found to be the strongest risk factor for chronic obstructive pulmonary disease which is an irreversible and progressive disease. Further research is needed to identify the associated risk factors and prevalence of childhood asthma in Bangladesh to guide appropriate interventions to fight against the increasing rate of asthma among children. ■

Pre-hypertension in Bangladesh

Pre-hypertension is defined as a systolic blood pressure of 120–139 mmHg and/or a diastolic blood pressure of 80–89mmHg. The objective of defining this classification of blood pressure is to draw the clinical and public health attention on the prevention of people in this range. Prehypertension is a precursor of clinical hypertension and is closely related with increased incidence of cardio-vascular disease. People with Pre-hypertension (120–139/80–89mmHg) have an increased risk of cardiovascular morbidity and mortality compared with people who have normal blood pressure (<120/80mmHg).

According to Bangladesh demographic and health survey 2011 more than 32% women and 19% men age 35 and above have hypertension and an additional 28% of both women and men are prehypertensive. Center for Control of Chronic Diseases (CCCD) at icddr,b conducted a longitudinal study on Hypertension in its surveillance sites at rural Matlab and urban Kamlapur. We found 17% adults age 20 years or above

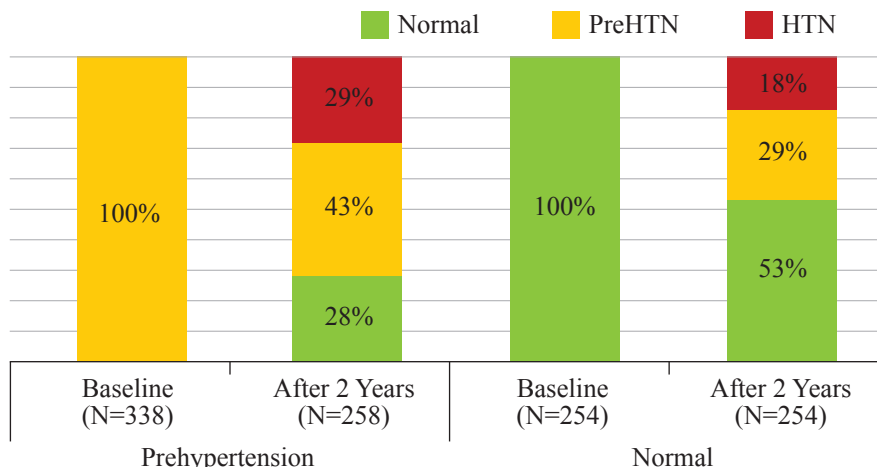


Figure: conversion from prehypertension to hypertension

have hypertension and an additional 20% are prehypertensive (18% in women and 23% in men). Two year rate of conversion from prehypertension to hypertension is 29% whereas from normal to hypertension is 18%.

This high prevalence and conversion rate of prehypertension will increase the hypertension toll and will have a big impact on the total burden

of stroke and ischemic heart diseases, which are already the leading causes of adult mortality and morbidity in Bangladesh.

Appropriate treatment of prehypertension is an important public health challenge that needs to be evaluated with priority. Predictors of progression from prehypertension to hypertension in this population also need further assessment. ■

COPD incidence among smokers in Bangladesh



Spirometry to determine lung function

Chronic Obstructive Pulmonary Diseases (COPD) is the fourth leading cause of mortality and is projected to be the third leading cause by 2030. This preventable and treatable condition

mostly occurs in developing countries. In South-East Asia 7.1% to 17.9% people have COPD. The major risk factor for COPD is tobacco smoking, and about 10-15% of all smokers develop COPD. Smoking is highly prevalent in Bangladesh especially in the male. In 2010, 54.8% adult male were smoker in Bangladesh. Exposure to passive

smoking at home or work, indoor air pollution due to biomass fuel burning and occupational exposure to dusts and gases or chemicals have also been reported to be significant risk factor of

COPD. Knowledge of the incidence and determinants of COPD is important to assess whether targeted screening in smokers could be useful. CCCD young investigator Dr. Ali Tanweer Siddiquee was awarded a seed grant to study incidence of COPD among adult ever smokers in Bangladesh. All these smokers were identified from a population based study conducted by Dr. Dewan S Alam which identified the prevalence of COPD among adults (40 years or above).



We interviewed the respondents and conducted Spirometry to measure lung function. Major lung function parameters included Force Expiratory

Volume in 1st Second (FEV1) and Force Vital Capacity (FVC). Smokers who have FEV1/FVC <70% was defined as COPD.

Two year cumulative incidence of COPD among smokers was 7.1%. Mean age of COPD incident cases were significantly higher than non cases. Mean

FEV1 and FVC among incident COPD cases were 1.8L (SD=0.54) and 2.84L (SD=0.70) respectively. Both FEV1 and FVC were significantly lower among the incident COPD cases compared to non incident smokers. Incident COPD was significantly associated with age, occupation, income, respiratory

symptoms and BMI on bivariate analysis. Incident COPD did not differ in current or former smokers or intensity (by pack years). In the adjusted model, older age and presence of respiratory symptoms in last 12 months are independent predictors for incident COPD among the adult ever smokers. ■

Building capacity for chronic disease research in Bangladesh- CCCD highlights of last 12 months

The center for control of chronic disease (CCCD) is working relentlessly to increase expertise on chronic disease research in Bangladesh. Highlights of last 12 months are mentioned below



Research fellow Tanzila Taskin sharing her poster to Dr. Cristina Rabadan-Diehl

Dr. Cristina Rabadan-Diehl, Acting Director, Office of Global Health, National Heart, Lung, and Blood Institute, National Institutes of Health, USA, visited the CCCD from 31 August to 3 September 2013. Six research fellows under the Certificate in Advanced Research Method (CARM) programme for 2013 shared their work with the centre researchers in presence of Dr Rabadan-Diehl. Research fellows received extensive training on NCD research, in addition they developed independent research projects in this programme.

Shyfuiddin Ahmed (Research investigator) and Dr. Tauhidul Islam (research officer) attended a six day international course on “Health research methods and evidence based medicine” in November 2013 at St.



Shyfuiddin Ahmed (Research investigator) and Dr. Tauhidul Islam (research officer) with Professor Denis Xavier of St. John's Medical College & Research Institute in Bangalore, India

John's Medical College & Research Institute in Bangalore, India. The course covered principals and challenges of evidence-based medicine, randomised control trial, systematic review and meta-analysis. They received immense training through interactive and scientific lectures, group activities, journal club, projects, and presentation. Shyfuiddin Ahmed expressed that the course enhanced his knowledge to identify areas where evidence is lacking for changing policy and practice.

Nazratun Nayeem Monalisa, Dissemination Manager of CCCD, attended three-week long International Leadership Visitor Programme held in the United States. The programme was organised by the US Department of State through its Bureau of Educational and Cultural Affairs from 24 February–14 March 2014. The



Nazratun Nayeem Monalisa, Dissemination Manager of the CCCD

programme was arranged in four different cities in the United States to give the participants the idea on the federal government systems, national programmes at the state level, and local programmes at city level. The programme was attended by participants representing 16 countries from Asian, European and African regions.



Professor Zuo-Feng Zhang and Dr. Dewan S. Alam presenting certificate to a participant of “Introduction to cancer epidemiology” course.

Dr. Zuo-Fang Zhang, Professor and Associate dean of UCLA Fielding School of Public Health, USA visited the Centre for Control of Chronic Diseases of icddr,b from 9 to 12 March and facilitated a 3 day course on “Introduction to cancer epidemiology”. He discussed basic concepts in cancer epidemiology including concepts of carcinogenesis, multistage models, pre-malignant lesion, international patterns of cancer and major etiological issues for a variety of cancers including smoking, infection, and nutrition. Thirty researchers from icddr,b and University Research Bangladesh attended the course.

We provided financial support to a course on scientific programme management in May 2014. The course was conducted by Barbara Driver, Vice-president and Associate Director and Karen Martier, Associate Director of WESTAT, USA. A 256



Participants attending scientific project management training

participants including researchers and project managers from all 10 centers of icddr,b attended the course. The aim of the course was to develop a foundation of concepts and practical solutions necessary to complete a scientific project efficiently. The course was arranged by the Chief Operating Officer's office and coordinated by the Talent Development office of icddr,b.

Dr. Ismail Ibrahim Fakir research investigator of CCCD attended 46th International Ten Day Teaching Seminar on Cardiovascular Epidemiology and Prevention from May 25 to June 05, 2014 in Coorg, Karnataka, India. The seminar was sponsored by The International Society

for Cardiovascular Diseases Epidemiology and Prevention (ISCEP) in association with Centre for Disease Control, India and Public Health Foundation



Dr. Ismail Ibrahim Fakir

of India. Forty eight fellows and faculty from twenty two countries gathered at the seminar. The seminar high-lighted the importance of capacity building as well as epidemiologic research to tackle the increasing burden of cardiovascular disease worldwide Dr. Fakir said that learning from the seminar enhanced his knowledge for doing research on cardiovascular epidemiology in Bangladesh. ■

GeoHealth Network members met

The Centre for Control of Chronic Diseases (CCCD) of icddr,b held a meeting with the GEOHealth Network members in January 2014. The meeting was inaugurated by Dr. Abbas Bhuiya, Deputy Executive Director of icddr,b.

Louis Block Professor of Departments of Health Studies, Medicine and Human Genetics, University of Chicago, USA, and Grant Principal Investigator for the consortium Dr. Habibul Ahsan, and Acting Director of CCCD Dr. Dewan Shamsul Alam updated the members of the Network with the current status of the Hub and future plan. The participants discussed on the pilot studies to be conducted in the respective areas and defined some immediate action points. Three focal areas have been selected by the consortium to work in the areas of air pollution, water pollution and climate change.

The meeting was attended by the researchers and academics from icddr,b, University Research Bangladesh, Brac, Dhaka University, Brac

University, NIPSOM, WaterAid, Imperial College London and Nature Conservation Management. ■

Photo story



CCCD researchers shared their activities at the 9th semi-annual global health centers of excellence steering committee meeting at Bethesda in the USA in April 2014

For further information or queries about CCCD and for feedback on this newsletter, please contact:

Centre for Control of Chronic Diseases, icddr,b
GPO Box 128, Dhaka, Bangladesh
Tel: +88 02 9840523-32, ext. 2539
E-mail: cccd@icddr.org
Website: www.icddr.org/chronicdisease

Dr Dewan Shamsul Alam
Principal Investigator and Acting Director
Centre for Control of Chronic Diseases
dsalam@icddr.org

Muhammad Ashique Haider Chowdhury
Senior Research Investigator
Center for Control of Chronic Diseases (CCCD)
asheq.haider@icddr.org