Prevalence, awareness and control of hypertension in the slums of Kolkata (PHISK)

- **What is PHISK?**

  PHISK stands for ‘Prevalence, awareness and control of hypertension in the slums of Kolkata’. It is a collaborative study between the Kolkata Municipal Corporation (KMC) and the Apollo Gleneagles Hospital, Kolkata. Dr Suvro Banerjee, Senior Interventional Cardiologist, Apollo Gleneagles Hospital, Dr Tapan Kumar Mukherjee, Advisor, Dept of Health, Kolkata Municipal Corporation and Dr Srabashi Basu, Program Chair, Predictive Business Analytics, Bridge School of Management, NCR were the investigators for the study.

- **What was the aim of the study?**

  The aim of the study was to provide estimates of the prevalence, awareness, and control of hypertension in the adult population of the slums of Kolkata.

- **Why was the study necessary?**

  Hypertension accounts for 57% of all deaths from stroke and 24% of all deaths from coronary heart disease in India. Over the last 50 years there has been about 30 times increase in prevalence of hypertension in the urban population of India, a considerable proportion of which lives in the slums. Slum-dwellers have poor socio-environmental conditions and less access to medical care, which make them susceptible to illnesses. Studies on urban slums have primarily focused on communicable diseases and less on lifestyle diseases such as hypertension. Consequently, there is a paucity of prevalence studies of hypertension in slums in different parts of the country. The study was necessary to estimate the nature and the magnitude of the problem. This will help in planning effective strategies for preventing and controlling hypertension among the slum dwellers.

- **Where was it done?**

  The study was conducted in the slums of Kolkata. Kolkata has an approximate resident population of 4.5 million (Census 2011), of which about 1.49 million reside in slums (about one-third of the total population). One of the boroughs (Number III) was selected which has a population of 4, 01,332, of which about 44.3% are slum dwellers.
• **How was it conducted?**

Ten health care workers who work in the slums of borough III were given adequate training in blood pressure measurement by a team of doctors. Door to door survey was conducted by these health care workers in their respective wards, under the supervision of the team of doctors. All slum residents aged 20 years or more, who were present on the days of the survey and were willing to participate, were included in the study. A standard structured questionnaire was prepared which comprised of demographics such as age, sex, religion, housing condition (house/hut), average monthly household income and education status. History of hypertension and whether on anti-hypertensive medications, were also noted. Blood pressure was recorded as per standard guidelines. A total of 10,175 adults aged ≥ 20 years were enrolled in the study.

• **What are the main findings of the study?**

  o Overall prevalence of hypertension (known and newly detected) was 42%. Hypertension was newly detected in 19% of the population surveyed. The remaining 23% were aware that they have high blood pressure.
  o The prevalence was higher in men than in women.
  o 42% percent Hindus and 48% from minority communities had hypertension.
  o No significant difference in prevalence of hypertension was seen between those residing in house or those in huts.
  o Prevalence of hypertension was not found to be related to the education status of the slum dweller.
  o The prevalence of hypertension increased with monthly household income.
  o Tobacco-users had higher prevalence of hypertension than non-users.
  o Of the total hypertensive subjects, 54% were aware of their condition. In the remaining 46%, hypertension was detected during the survey.
  o Of the total hypertensive subjects, 38% were on anti-hypertensive treatment.
  o Of the total hypertensive subjects, only 12% had their blood pressure controlled.
  o Of the hypertensive subjects who were aware of their condition, 71% were on treatment.
  o Among those who were on treatment for hypertension, only 26% had their blood pressure controlled.
  o Although the prevalence of hypertension was higher in men than women, the awareness, treatment and control of hypertension were higher in women.
  o An appreciable 22% of subjects in the age group 20 years to 40 years of age had hypertension. They were found to be less aware of their condition and also were
less likely to be on treatment, compared to the overall population. Therefore, screening for hypertension should not exclude individuals in this age group.

- **How does the PHISK findings compare with other studies done in our country?**

  In our country, very few studies are available on hypertension in slum dwellers. The prevalence of hypertension seen in the PHISK study is higher than that reported in other studies. This may be due to problems inherent and specific to the slums of Kolkata or may be a reflection of the rising trend of hypertension seen in our country because of rapid urbanization, lifestyle changes, dietary changes and the increased life expectancy, or a combination of these factors. The study also showed a high level of awareness of their condition among the people with hypertension. Moreover, more than two-thirds of those who were aware, were on treatment for hypertension. The reasons for the high awareness level observed in the study are not clear. The clinics and the camps conducted by the KMC and the various non-government organizations might have helped in the detection of hypertension among the slum dwellers and increased awareness of the condition. Despite higher awareness and treatment, the control of blood pressure is poorer in the PHISK study. Probably once medications were initiated, no further follow-ups were done, resulting in inadequate control of blood pressure.

- **Why is PHISK an important study?**

  PHISK is the first study involving more than 10,000 subjects, to look into the prevalence, awareness and control of hypertension in the urban slums of Kolkata. The findings from the study will be useful in estimating the magnitude of the problem and devise effective population-based strategies to prevent and control high blood pressure in the slum-dwellers.