

# May Measurement Month 2017: analysis of the blood pressure screening results in Argentina—Americas

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On behalf of Argentinian Society of Hypertension and the MMM Investigators

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Hypertension is a growing concern worldwide, causing over 10 million deaths each year. The prevalence of high blood pressure (BP) in Argentina is 36.3% and 38% of these are unaware of their disease. Half of the hypertensive patients are on pharmacological treatment and only a quarter of them are controlled. The International Society of Hypertension initiated the May Measurement Month (MMM) as a global campaign to raise awareness on high BP that may also serve as a temporary solution to the lack of global screening programs worldwide. A volunteer cross-sectional survey was carried out in May 2017 across 56 health centres. Blood pressure measurement, definition of hypertension and statistical analysis followed the MMM protocol. For this awareness campaign, the Argentine Society of Hypertension coined the slogan: 'Know and control your blood pressure'. A total of 32 346 individuals aged at least 18 years were screened during MMM17. After imputation, 16 263 (50.4%) were hypertensive. Of the 12 156 receiving antihypertensive medication 5400 (44.4%) still had uncontrolled BP. MMM17, called in our country 'Know and control your blood pressure', was the largest BP screening campaign done in Argentina. Almost 6 out of 10 hypertensive patients were either not on treatment or were not controlled to the BP goal. These results suggest that appropriate screening can help to identify a significant number of people with high BP.

## Introduction

High blood pressure (BP) is the biggest single global cause of mortality, despite the availability of effective treatments. The detection and control of hypertension still remain major challenges in most of the countries in the world.<sup>1</sup>

Argentina, with a population of more than 40 million people is no different and 40.2% of mortality in Argentina is due to cardiovascular diseases (<http://www.msal.gov.ar/ent/index.php/vigilancia/areas-de-vigilancia/mortalidad>). The Argentinian Society of Hypertension (SAHA) has, among other objectives, to improve the degree of knowledge and control of arterial hypertension.

Hypertension is a very common disease in our country with a prevalence of between 33% and 36% of the population. This main risk factor for morbidity and mortality has a high level of unawareness and very low degree of control. RENATA 1 and 2 studies, carried out in 2008 and 2016 respectively, had observed almost the same results, both in the degree of hypertension unawareness (37.2% vs. 38.8%) and the control level (26.5% vs. 24.2%).<sup>2,3</sup>

In 2017, the International Hypertension Society (ISH) endorsed by the World Hypertension League (WHL) carried out the May Measurement Month (MMM), the largest ever synchronized and standardized multinational screening campaign of any cardiovascular risk factor. The SAHA participated in this campaign and dubbed it as: 'Know and control your blood pressure'.

## Methods

SAHA invited all its associates to participate. The campaign had two modalities: an 'active' campaign and a 'massive' one.

The ACTIVE campaign was coordinated by SAHA associates who measured the BPs of all individuals who agreed to participate of their own free will. At all participating centres, the campaign was announced with posters and banners. Brochures were also delivered to people.

The MASSIVE campaign was mainly conducted through social media, Twitter and Facebook. It consisted of a post per day throughout the entire month of May, totalling 31 phrases that raised awareness about the main aspects of arterial hypertension. These posts were accompanied by a SAHA brief report and visual material. We used the hashtag *#conoceycontrolatupresiónarterial*. The campaign had also a website: [www.conoceycontrola.org.ar](http://www.conoceycontrola.org.ar), which linked to the community page at SAHA website.

The active campaign was mainly conducted in hospitals and health centres. It was coordinated by 56 SAHA members. The standard method recommendations were: two recordings taken on the left arm (preferably) with 1 min intervals between readings in a seated position. Omron and Microlife validated automatic devices were used.

Volunteers were asked a few questions to gather additional data. This information was entered via Google form or, alternatively, manually on a spreadsheet. Blood pressure was calculated as the mean of the two readings, and hypertension was defined as systolic BP  $\geq 140$  mmHg or diastolic BP  $\geq 90$  mmHg or in those on treatment for BP.

All participants receiving antihypertensive treatment were also assumed to be hypertensive. Among those treated, controlled BP was defined as a BP of less than 140/90 mmHg. Those participants who had BP in the hypertensive range were provided with visual material detailing dietary and lifestyle advice to lower their BP (the Top Ten Tips). Data were analysed according to the global analysis plan.

## Results

A total of 32 346 individuals had their BP measured during the month of May 2017 in the context of the SAHA and MMM campaign 'Know and control your blood pressure'. Sixty percent were females and 40% males with a mean age of 52 (SD 17) and a mean body mass index of 27.6 kg/m<sup>2</sup> (SD 5.24).

Mean BP was 126.5/77.7 mmHg after age and sex standardization. In 20 064 individuals without treatment, mean BP was 124.5/76.6 mmHg and in 12 156 hypertensive patients on treatment, mean BP was 134.8/82.4 mmHg.

Of those with a mean of the second and third readings after imputation<sup>4</sup> or were known to be on antihypertensive treatment, 16 263 (50.4%) were hypertensive. Of those not receiving treatment, 4056 (20.2%) were hypertensive and of those on antihypertensive medication, 5400 (44.4%) had uncontrolled BP.

Based on a linear regression models, the association between age and sex with systolic BP in people who were not receiving antihypertensive treatment showed a linear increase, with the mean BP in women exceeding the mean BP in men at 80 years of age. This finding is similar as that observed in the MMM17 campaign in other participating countries. For diastolic BP, the relationship shows an inverted U shape, with the highest levels at age 50-55 years, and with BP in women lower than in men until aged 80 years. Adjusting for age, sex, and antihypertensive treatment, BP was significantly higher in those who were obese compared with underweight, in both systolic and diastolic BP and was similar to the global results.<sup>4</sup>

## Discussion

MMM17 in Argentina, with the slogan 'Know and control your blood pressure' was the largest BP screening campaign done in our country. Finding a high proportion of hypertensive patients in our campaign was expected since it was conducted in hospitals and health centres. However, we found that 6 out of 10 hypertensive patients were either not on treatment or were not controlled to BP goal. These results suggest that appropriate screening can help to identify significant numbers of people who require improved BP management.

The identification of almost 10 000 adults with increased BP (4056 untreated adults plus 5400 treated adults, but with uncontrolled BP) is very important for our country. This campaign is a useful and inexpensive tool to help raise awareness in the general population about the risks of arterial hypertension. Campaigns such as MMM17 could help increase awareness on this prevalent cardiovascular problem and help reduce the enormous health burden attributed to high BP.

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