

National Health Surveys and Health Policy: Impact of the Jamaica Health and Lifestyle Surveys and the Reproductive Health Surveys

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ABSTRACT

Over the last six decades, comprehensive national health surveys have become important data-gathering mechanisms to inform countries on their health status and provide information for health policy and programme planning. Developing countries have only recently begun such surveys and Jamaica has been at the forefront of this effort. Jamaica's Reproductive Health Surveys and programme response to their findings have resulted in an almost 50% reduction in fertility rates over three decades as well as a 40% reduction in unmet contraceptive needs and a 40% reduction in unplanned pregnancies over the last two decades. The Jamaica Health and Lifestyle Surveys have served to reinforce the major burden that non-communicable diseases place on the society and the extent to which these are driven by unhealthy lifestyles. These surveys have shown that obesity, hypertension, diabetes and dyslipidaemia affect approximately 50%, 25%, 10% and 10% of the adult population, respectively. These surveys have documented low rates of treatment and control for these chronic non-communicable diseases despite two major policy initiatives, the National Programme for the Promotion of Healthy Lifestyles and the creation of the National Health Fund which subsidizes healthcare provision for chronic diseases. In order to maximize the uptake of the findings of future surveys into effective health policy, there will need to be effective collaborations between academia, policy-makers, regional and international health agencies, non-government organizations and civil society. Such collaborations should take into account the social, political and economic issues, thus ensuring a more comprehensive approach to health policy and result in improvement of the nation's health status and by extension national development.

Keywords: Caribbean, developing countries, health examination surveys, health interview surveys, health policy, Jamaica, national health surveys

Estudios y Políticas Nacionales de Salud: Repercusión de los Estudios de Estilo de vida y Salud, así como de los Estudios de Salud Reproductiva en Jamaica

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RESUMEN

Durante las últimas seis décadas, los estudios de salud integrales nacionales han devenido importantes mecanismos de recolección de datos para informar a los países sobre sus respectivos estados de salud, así como brindar información para el planeamiento de los programas y políticas de salud. Sólo recientemente los países en desarrollo han comenzado a realizar esos estudios, y Jamaica ha estado a la vanguardia de este esfuerzo. Los Estudios de Salud Reproductiva en Jamaica y los programas en respuesta a sus hallazgos han traído como resultado una reducción de casi un 50% en las tasas de fertilidad por espacio de más de tres décadas, así como una reducción de 40% de las necesidades anticonceptivas insatisfechas y una reducción de 40% de embarazos no planificados en las últimas dos décadas. Los Estudios sobre Estilo de Vida y Salud en Jamaica han servido para dar mayor peso a

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evaluar la gran carga que las enfermedades no comunicables imponen a la sociedad y determinar hasta que punto las mismas son consecuencia de estilos de vida no saludables. Estos estudios han mostrado que la obesidad, la hipertensión, la diabetes y la dislipidemia afectan a la población adulta en proporciones aproximadas de 50%, 25%, 10% y 10% respectivamente. Estos estudios han suministrado datos que ponen de manifiesto bajas tasas en el tratamiento y control de estas enfermedades no comunicables, a pesar de dos iniciativas principales: el Programa Nacional para la Promoción de Estilos de Vida Saludables y la creación del Fondo de Salud Nacional. En ambos casos, se trata de políticas encaminadas a subvencionar el cuidado de la salud en el caso de enfermedades crónicas. Para aumentar al máximo la respuesta a los resultados de estudios futuros y su introducción efectiva en las políticas de atención a la salud, será necesario establecer colaboraciones efectivas entre la academia, los encargados de trazar políticas, las agencias de salud regionales e internacionales, las organizaciones no gubernamentales, y la sociedad civil. Tales colaboraciones deben tener en cuenta los problemas sociales, políticos y económicos, asegurando de este modo un enfoque más integral de las políticas de salud, así como el mejoramiento del estado de salud de la nación, y por extensión del desarrollo nacional.

Palabras claves: Caribe, países en desarrollo, estudios de examen de la salud, estudios de entrevistas de la salud, políticas de salud. Jamaica, estudios de salud nacional

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INTRODUCTION

In order to plan healthcare and evaluate health policy, health ministries and associated agencies need information on the health status of the population including the burden of disease and disease risk factors and health service utilization (1, 2). This can be obtained from a number of possible sources including: routinely collected administrative data such as mortality registers, screening programmes, hospital and clinic utilization reports or databases, disease registries, health interview surveys and health examination surveys (1).

All of these sources of health data have limitations (1). Administrative data provide information on diagnosed and/or treated disease with limited data on the disease risk factors. Screening may be targeted, random or haphazard, thus reducing the generalizability of the results, while registries focus on specific diseases and collect limited data on disease risk factors. Some of these problems can be overcome by health interview surveys (HIS) and health examination surveys (HES) which have the potential to provide government officials, policy-makers and aid organizations with answers to specific questions that are critical to policy formulation.

Health interview surveys obtain data by questionnaires only and are typically done on nationally or regionally representative samples (1). Data obtained may include information on health, health attitudes, health behaviours and diagnosed diseases (1, 3). Some health surveys focus on particular health problems like reproductive health and drug abuse among other health issues. Health interview surveys are, however, limited by respondents' recall and may under-report or over-report disease. In addition, the validity of the diagnosis may be limited by a variety of factors including health literacy of respondents which in turn will depend on a variety of socio-economic factors (1, 3). Health interview surveys will also miss previously undiagnosed disease conditions and risk factors.

Health examination surveys, also typically done on nationally or regionally representative samples, use direct measurement of disease and/or risk status using questionnaires (similar to HIS), as well as clinical examination (such as anthropometry and blood pressure), laboratory tests (*eg* glucose, cholesterol, haemoglobin) and other special tests [such as electrocardiogram] (1, 3). Health examination surveys, because of the inclusion of direct measurements, can provide a more accurate assessment of disease burden and control by identifying undiagnosed disease and risk factors not detectable by questionnaire alone. Health examination surveys are more costly, time consuming and associated with higher non-response rates. The higher costs and lower response rates result from the need for special/sophisticated equipment, use of specially trained personnel and greater participant burden (1, 3). Despite these challenges, the net gain in health data is considered well worth the additional investments (2).

IMPACT OF HEALTH EXAMINATION SURVEYS IN DEVELOPED COUNTRIES

The United States of America (USA) has the longest period of experience with national health surveys in the western hemisphere (1–3), but the Japanese have conducted a national health and nutrition survey since 1948 (4–5). In the USA, the National Health and Nutrition Examination Survey (NHANES) has been conducted periodically since 1959 and as continuous annual surveys since 1999 (1, 6). Several countries in Europe have also conducted HES (1, 7).

The impact of these national health surveys on health policy in developed countries is best exemplified by NHANES in the USA. The Centers for Disease Control and Prevention (CDC) has described over fifty significant contributions that NHANES has made to public health in the United States (8–10). Some of these include the following: removal of lead from paints and gasoline, iron fortification of

grains and cereals, folate fortification of grains and cereals, CDC child growth charts, initiatives to reduce obesity (eg reduction in sugar sweetened beverages, Michelle Obama's Let's Move Initiative) and initiatives/laws to reduce second hand smoke.

The World Health Organization (WHO) and the Pan American Health Organization (PAHO) have sanctioned national surveys and actively encourage the use of survey instruments such as the WHO STEPS and Pan American STEPS in developing countries to improve data collection and facilitate the comparison of data between countries and other population groups (11, 12).

NATIONAL HEALTH SURVEYS IN JAMAICA

A number of national health surveys have been conducted in Jamaica over the last three decades (Table 1). These surveys include comprehensive health surveys covering all major areas of health such as the Jamaica Health and Lifestyle Surveys (13–15), disease or risk factor specific surveys such

as the asthma prevalence surveys and global tobacco surveys (16, 17), youth surveys (17–19) and economic surveys with health components such as the Jamaica Survey of Living Conditions (17). Most of these are health interview surveys; however, the Jamaica Health and Lifestyle Surveys and the Youth Risk and Resiliency Behaviour Survey 2006 were health examination surveys. Focus will be on the findings of the general health surveys which are summarized in Tables 2–4 and in Figure 1.

Health Examination Surveys and Health Policy

The health examination surveys resulted from the initial decision by a number of primary care physicians to determine the burden of disease in the region in order to address the issues of the health of the patients under their care. The effort was primarily voluntary and data collection was done by the practitioners in the clinics. This resulted in the Jamaica Behaviour Risk Factor Survey of 1993 (20). This study showed that there was a high prevalence of risk be-

Table 1: National health surveys conducted in Jamaica

Name of Survey	Year(s) Conducted	Sample Characteristics/Description
General Health Surveys		
Jamaica Behaviour Risk Factor Survey* (20)	1993	958 persons, 15–49 years old
Jamaica Health and Lifestyle Survey (14, 15)	2000–2001, 2007–2008	2012 persons, 15–74 years old; 2848 persons, 15–74 years old
Youth Surveys		
Jamaica Adolescent Health Survey (17)	1997	2635 adolescents 10–18 years old
Global Youth Tobacco Survey (16, 17)	2000, 2006, 2010	Children 13–15 years old
Jamaica Youth Risk and Resiliency Behaviour Survey 2005 (18)	2005	3003 children, 10–15 years old
Jamaica Youth Risk and Resiliency Behaviour Survey 2006 (19)	2006	1318 youth, 15–19 years old
Disease/System Focussed Surveys		
Reproductive Health Surveys (17)	1975, 1983, 1989, 1993, 1997, 2002, 2008	Women 15–44 years, men 15–24 years, sample sizes between 6000 to 10 000 persons
Knowledge, behaviour, attitudes and practices of Jamaicans regarding sexual activity and sexually transmitted infections (17)	1992, 1996, 2000, 2004, 2008	Persons 15–49 years, sample sizes 1184–1800
Jamaica Asthma and Allergies National Prevalence Study (31, 32)	2008	2017 children 2–17 years old 2163 adults 18 years and older
Economic Survey with Health Component		
Jamaica Survey of Living Conditions (17)	Annual surveys since 1988	Household and individual data from a subset of the population; Information is collected on consumption, health, education, nutrition, housing, demographic characteristics and social welfare

*Numbers in brackets indicate reference to study or data sources

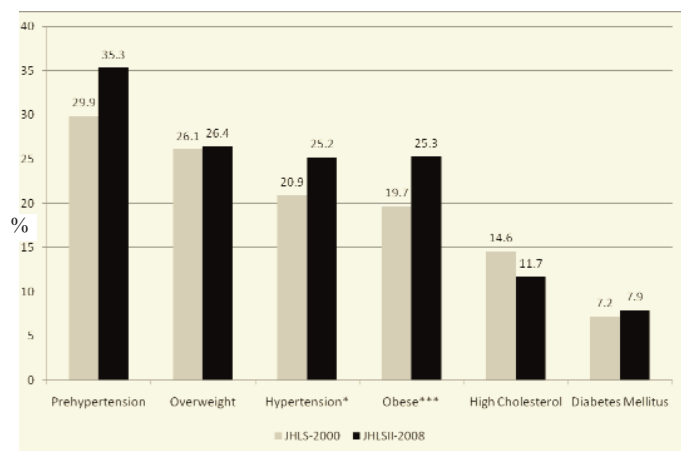


Fig. 1: Comparison of prevalence estimates (%) for selected conditions from Jamaica Health and Lifestyle Surveys 2000–2001 and 2007–2008.

Overweight = BMI 25.0–29.9 kg/m²; obesity = ≥ 30 kg/m²

* $p < 0.05$; *** $p < 0.001$

haviours including heavy alcohol consumption, cigarette smoking, marijuana use, having multiple sexual partners and a history of sexually transmitted infection. Additionally, the self-reported prevalence of hypertension was high, particularly among women while the self-reported prevalence of diabetes mellitus appeared to be relatively low (Table 2).

Table 2: Selected findings from the Jamaica Behaviour Risk Factor Survey 1993

Characteristic	Men (%)	Women (%)
History of hypertension	8	18
History of diabetes mellitus	3	5
Ever smoked 100 cigarettes	36	11
Ever smoked marijuana	37	10
Heavy use of alcohol	30	9
Ever had STD	29	9
Multiple sexual partners (2 or more)	55	17

Data source: Figueroa *et al* 1999 (20); Data based on self-reports.

This survey formed the basis for the first health examination survey conducted by the Epidemiology Research Unit in 2000–2001: the Jamaica Health and Lifestyle Survey [JHLS-I] (14).

The JHLS-I was commissioned by the Health Promotion and Protection Division of the Ministry of Health and funded by the Inter-American Development Bank (21) in recognition of the need for up-to-date, nationally representative data on the burden of the non-communicable diseases (NCDs) in Jamaica. At that time, the NCD burden had been estimated most recently in the urban setting of Spanish Town, St Catherine (22, 23) but no estimates on the rural burden were available since studies in Lawrence Tavern, St Andrew in the 1970s (24, 25). This was the first time that efforts were being made to obtain data on overall adult health in a national

survey using an equal probability sampling methodology as proposed by Kish (26).

A second Jamaica Health and Lifestyle Survey was conducted between 2007 and 2008. This time funding was obtained primarily from the National Health Fund (NHF), a special fund created in 2003. Money for this fund is obtained from a special consumption tax on cigarette products and a percentage of the National Insurance Scheme (NIS) – a compulsory contributory funded social security scheme for all employed persons below pensionable age.

Both HES have collected data in the following domains: demography, family health history, personal medical history, health seeking behaviour and sources of health information, social history and lifestyle practices, emotions and mental health, sexual practices and dietary habits. The second health survey also evaluated these factors but in addition included an assessment of the NHF programme and evaluation of additional risk factors for chronic diseases such as sleep and the built environment. The 2001 study showed that 60% of Jamaican women and 30% of Jamaican men were overweight or obese. Twenty per cent of men and 22% of women had hypertension with another 35% of men and 25% of women having prehypertension (27). The survey also showed that 50% of women and 20% of men had low physical activity levels and again demonstrated high prevalence of risky behaviours (Table 3). Patterns of disease and risk behaviour in the 2007–2008 survey were similar (Table 4) but there was increased prevalence of a number of

Table 3: Selected findings from the Jamaica Health and Lifestyle Survey 2000–2001

Disease/Condition	Men (%)	Women (%)
Overweight or obesity	30	60
Hypertension	20	22
Prehypertension	35	25
Diabetes mellitus	6	8
Hypercholesterolaemia	12	17
Low physical activity	21	51
Current cigarette smoking	28	7
Alcohol consumption (in the past month)	68	51
Ever had STD*	28	12
Multiple sexual partners*	49	11
Weapon use (carries weapon for self-defence)	22	8

*Data for ages 15–49 years.

Data sources: Jamaica Healthy Lifestyle Survey 2000 Project Report (14), Ferguson *et al* 2008 (27), Figueroa *et al* 2005 (13)

conditions, in particular hypertension and obesity, and as shown in Figure 1. The prevalence of hypercholesterolemia appeared to be trending down but the differences were not statistically significant.

How Have These Data Influenced Policy?

So far, data from the surveys have been used by the Ministry of Health particularly with relation to the National Policy for the Promotion of Healthy Lifestyles. Data have also been

Table 4: Selected findings from the Jamaica Health and Lifestyle Survey 2007–2008

Disease/Condition	Men (%)	Women (%)
Overweight or obesity	38	65
Hypertension	25	25
Prehypertension	42	29
Diabetes mellitus	6	9
Hypercholesterolaemia	8	16
Low physical activity	16	43
Cigarette smoking (current)	22	7
Alcohol consumption (current)	80	49
Ever had STD	18	11
Multiple sexual partners	41	9

Data sources: Jamaica Health and Lifestyle 2007–2008 Project Report (15), Ferguson *et al* (33).

used in the drafting of the Ministry of Health Strategic Plans, by the NHF in select disease conditions for inclusion in its medication subsidies and most recently by the World Bank in their case study using Jamaica as a model for CNCD response in developing countries. In addition, findings from the Jamaica Health and Lifestyle Survey II have been used in preparing the Jamaica draft strategic plan for non-communicable diseases (NCDs) 2012–2017. The data from the first HES in 2000–2001 were also used to justify the creation, policies and programme for the NHF which has provided subsidies for medications used in the treatment of the most common NCDs in Jamaica. The impact of this programme is yet to be fully evaluated. It is expected that these data will continue to inform health policy in the coming years including the implementation of multi-faceted effective interventions to tackle the NCD epidemic beyond the mere health provider based approach. It is recognized that a stronger relationship between the HES and health policy is still needed. This can be illustrated by the Jamaica Reproductive Health Survey.

Integrating Health Surveys and Health Policy – The Jamaica Reproductive Health Survey

The Jamaica Reproductive Health Surveys are health interview surveys that have provided the basis for planning and policy in the Ministry of Health. The timelines for these surveys are outlined in the Textbox. Unlike many surveys that have been conducted in Jamaica, the National Family Planning Act of 1967 mandates the national Family Planning Board to “... undertake and promote research and disseminate information in relation to family and population planning...”. This mandate has been fulfilled through a series of reproductive health surveys since 1975. These surveys are conducted every five years and have provided data which have been used to guide the development of policies and plans for family and population planning.

The reproductive health surveys recruit a nationally representative sample of women 15–49 years old and collect data for monitoring, evaluation, planning and policy develop-

ment with regards to population control and reproductive health programmes. Data obtained from these surveys include: fertility rate, prevalence of contraceptive use, popular contraception methods, profile of users, prevalence of planned and unplanned pregnancies, unmet need for contraception, rural/urban differences in reproductive health, where people went for services (private/public sector), which professional was the first point of contact and sources of family planning information. The first survey in 1975 was called the Jamaica Fertility Survey, reflecting the focus on fertility and population control at that time. The surveys of 1983–1993 were called the Contraceptive Prevalence Survey demonstrating a focus on contraceptive access and availability. The surveys of 1997–2008 reflected a broader focus of reproductive health and included young men aged 15–24 years. The survey has changed over time to include new and emerging issues as additional modules to the core survey. These modules include: young adult behaviour and practices, HIV/AIDs, maternal and child health and physical and sexual abuse.

Impact of the Reproductive Health Surveys

The reproductive health surveys have been used to guide reproductive health policy in a number of areas as outlined below.

National Population Policy: Data from the Reproductive Health Surveys were used in the development of the National Population Policy of 1983 and 1992 (28). The policy makes specific reference to the fertility rates and contraceptive prevalence rates of 1989 and the role of the National Family Planning Board in undertaking and promoting research.

Social Marketing Programmes: The data from the Reproductive Health Survey informed several social marketing programmes. For example, in 1997 when external funding was significantly reduced, the survey found that the unmet need for contraception increased from 13.7% in 1993 to 15.4% in 1997. The Jamaica National Family Planning Board was therefore able to address this issue through the intensification of several social marketing activities designed to increase the access to contraceptives by using the network of private providers (mainly pharmacies). These activities involved: extensive training of pharmacists, classification of contraceptives as non-prescription items/drugs which could be dispensed by a pharmacist, distribution of condoms to local shops, bars and other small establishments and promoting the use of injectable contraceptives.

The conduct of these five-yearly nationally representative surveys has provided evidence for the development of a dynamic programme which has been sensitive to the changes in time and focus. The monitoring of the indicators measured by the survey and the ability to utilize the evidence garnered to modify existing programmes and create new ones has allowed the Jamaica National Family Planning Board to

achieve success in many of its programmes. Primary among these successes is the reduction in the fertility rate of Jamaica over time, from 5.8 in 1960 to 2.4 in the 2008 Reproductive Health Survey (29). The reduction of unmet need for family planning from 15.4% in 1997 to 7.9% in 2008 and a reduction in mistimed births from 51.9% in 1989 to 31.1% in 2008 (Table 5) are notable successes.

Table 5: Trends in unmet need for contraceptives and mistimed pregnancies 1989–2008

Year of Survey	Unmet Need for contraceptives	Mistimed pregnancy
1989	—	51.9%
1993	13.7%	47.8%
1997	15.4%	43.0%
2002	8.5%	41.6%
2008	7.9%	31.1%

Source: National Family Planning Board – Reproductive Health Surveys 1989–2008.

THE FUTURE HEALTH OF SURVEYS IN JAMAICA: BUILDING ON WHAT HAS BEEN DONE BEFORE

We propose conducting periodic comprehensive health examination surveys at 5–7 year intervals and establish the regularity associated with the Reproductive Health Surveys. This will enable us to provide updated prevalence estimates

and evaluate secular trends in disease burden. It will also allow us to indirectly evaluate the impact of policy initiatives on disease burden. We also hope to include additional measurements in particular lipid fractions (high density lipoprotein cholesterol [HDL] and low density lipoprotein cholesterol [LDL], triglycerides), screening for anaemia and additional cardiac evaluation such as the electrocardiogram (ECG).

A major objective of this programme of research is to link the HES datasets with other national databases. This will allow us to perform additional analyses particularly for

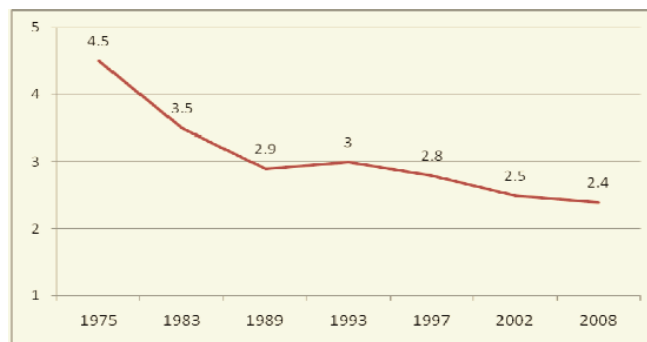


Fig. 2: Trends in total fertility rates in Jamaica 1975–2008.

Source: National Family Planning Board – Reproductive Health Surveys 1975–2008.

Textbox: Timelines for the establishment of the Reproductive Health Survey

Pre-independence Era (1930–1950)

- Contraceptive services offered by non-governmental organizations
- The Jamaica Family Planning Association established in 1950
- Population control rose to prominence on the international agenda
 - Countries are poor because of high fertility rates
 - Popular slogan “Contraceptive is the best form of development”

Post-independence Era (1963–2008)

- 1963 – Government of Jamaica establishes special unit within the Ministry of Health to direct family planning activity
- 1967 – National Family Planning Board established
- 1970 – National Family Planning Act passed by parliament establishing the National Family Planning Board as the sole agency with responsibility for family planning
- 1975 – The first contraceptive prevalence survey
- 1983 – National Population Policy established setting population size goal of 2.7 million and a replacement fertility level of 2 children per woman by the year 2000 (Policy revised 1992)
- 1983 – Reproductive Health Survey established and conducted every five years

relatively rare conditions and some types of cancers and also the creation of a national cohort for prospective evaluation of disease risk. It will also allow for the examination of associations with economic and sociological data not collected by HES but which may influence health behaviours and outcomes as well as national development. Other sources of data that are worth linkages include the Registrar General Department (RGD) which provides summary mortality data, Ministry of Health hospital and clinic database and the Jamaica Survey of Living Conditions and the Economic and Social Survey of Jamaica (ESSJ) databases produced by the Planning Institute of Jamaica (PIOJ). This will allow us to perform cross-sectional and longitudinal analyses for all-cause and cause specific mortality, group/individual level analyses for incident disease and group level evaluation of social and economic contributions to chronic disease. These linked datasets and the assessment of relationships between a wider spectrum of variables operating in the population will allow for better research within the health sector and the wider society and improve our developmental prospects.

CONCLUSIONS

Jamaica has had a long and productive history of health surveys in the area of reproductive health. The importance of the utilization of survey data from the reproductive health survey series serves as a prototype for the inextricable research-policy nexus and demonstrates the importance of conducting and utilization of health surveys for the achievement of national goals. The data emanating from such surveys must be used to guide our thoughts into innovative cost-effective solutions for the health and well-being of our people.

However, for CNCs, we have only very recently embarked on data collection to guide policy in the area of health which constitutes the largest burden on our society (30). In this short period we have shown that national health surveys serve as an important source of health information to drive health policy. We believe that Jamaica has the potential to be a leader among developing countries in using national health surveys to inform policy.

The vision of the Epidemiology Research Unit within the Tropical Medicine Research Institute includes using experience gained from conducting national surveys over the last 10 years as a launching pad for future surveys. These data can be used for other analyses through linkage with other national databases, providing extensive data to inform health policy in Jamaica and other developing countries. We also plan to become more integrally involved in policy creation at all levels. This will be achieved by strengthening collaborations with all relevant agencies within and outside The University of the West Indies and by establishing new ones where these meet the strategic objectives of improving the nation's health and well-being.

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