

Bright spots, physical activity investments that work: National Steps Challenge, Singapore: a nationwide mHealth physical activity programme

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BACKGROUND AND PROGRAMME DESCRIPTION

In Singapore, non-communicable diseases pose major health burdens and caused 74% of deaths in 2016.¹ Insufficient physical activity (PA) is a leading risk factor, and 39% of Singapore adults were insufficiently active in 2010.² The National Steps Challenge (NSC) uses mHealth approaches to increase PA.

NSC is designed and implemented by the Health Promotion Board, Singapore, a key governmental agency overseeing national health promotion and disease prevention. NSC has been rolled out to the entire adult population in Singapore, including one NSC season every year since 2015. Each season encompasses a 5-month challenge period, primarily focusing on stepping activities.

While fine features of NSC have been evolving over the seasons, tracking and rewarding PA achievements remain the key components. Participants keep track of PA through the Healthy 365 App³—a mobile application by Health Promotion Board, and their preferred fitness devices (figure 1). The devices can either be the fitness wristbands offered free-of-charge by Health Promotion Board, or self-purchased commercial wearables, or smartphones with built-in accelerometers. During the challenge period, participants earn Healthpoints according to step counts achieved each day. The Healthpoints are accumulated for tiers of rewards. For instance, since the third season daily step counts of 5000–7499, 7500–9999 and 10 000+ steps/day earn participants 10, 25 and 40 Healthpoints, respectively. The first 750 accumulated Healthpoints unlock the first reward tier equivalent to

S\$5. Additional 1500 Healthpoints unlock the second reward tier of S\$10. Afterwards, participants reach the next tier, up to the sixth tier, with each additional 750 Healthpoints (rewards per tier equivalent to S\$5).

Throughout each season, Health Promotion Board conducts integrated mass media campaigns to attract, engage and communicate with participants, as well as to raise public awareness about PA and share tips to stay active. Sub-challenge events such as monthly thematic challenges, community challenges and corporate challenges where participants pair up with families, friends and colleagues are carried out in addition to the main individual challenge.

WHY NSC WORKS

By November 2019, four NSC seasons were completed and the fifth is ongoing. The number of participants has been increasing rapidly over the past four seasons, yielding approximately 129 000, 356 000, 696 000 and 810 000 progressively. Accordingly, the first three challenge periods accumulated over 5.5, 12.2 and 35.4 million daily PA records. Multiple factors contribute to the successful scaling-up.

First, the design and implementation of NSC build not only on scientific evidence such as the effectiveness of fitness trackers and incentives to increase PA,⁴ but also on Health Promotion Board's behaviour insights from local health promotion practices over the past decade. Frequent programme evaluations have illustrated opportunities for timely improvements. Meanwhile, Health Promotion Board continuously invests in software and hardware, which have enabled the increasingly more flexible participation processes and more targeted interventions (eg, adding phone-based tracking mode since the second season and rewarding heart rate measured moderate-to-vigorous PA since the fourth season).

Besides attractive enrolment packages including free fitness wristbands and a

Programme card

Country/coverage

- ▶ Singapore, national coverage.

Target population

- ▶ The entire adult population of Singapore (citizens and foreigners). What modes/types/domains of physical activity (PA) does the programme promote?

- ▶ National Steps Challenge (NSC) encourages active lifestyles, and primarily promotes stepping activities, such as walking and running, as well as other moderate-to-vigorous PA.

Which of the seven best investments the programme addresses?

- ▶ Community-wide programmes.
- ▶ Public education on PA.

What sectors does it involve?

- ▶ NSC is a nationwide public health effort led by a governmental organisation, embracing partnerships with diverse organisations and industries in academia, technology, sports and recreation services and retails.

Estimated programme reach:

- ▶ The first four NSC seasons reached 1.3 million different participants—about 26% of the Singapore population aged 17 years and above (5.0 million as of June 2019⁸).

What is special about this programme?

- ▶ With one challenge season every year, NSC is a scaled-up PA promotion programme that uses wearables and smartphone applications. It leverages behaviour insights from both scientific evidence and local health promotion practices, and focuses on one behaviour at a time. NSC also shares key resources with other health promotion programmes, which encourages participants to monitor PA and remain active even during breaks between NSC challenge periods. Various subchallenges are offered regularly to provide participants more fun ways to stay active individually and in groups, such as monthly thematic challenges, community and corporate challenges.

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Programme website and Facebook handle:

- ▶ <https://www.healthhub.sg/programmes/37/nsc>
- ▶ <https://www.facebook.com/hpbsg/>

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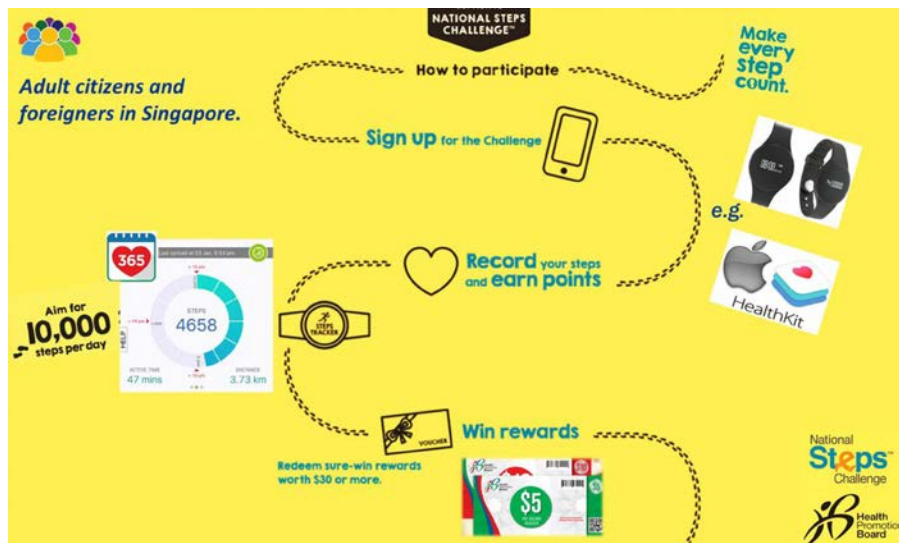


Figure 1 National Steps Challenge infographic.

mobile application, NSC delivers multi-media public education of PA which empowers participants and stimulates intrinsic motivation towards NSC beyond the financial incentives.

Embedded within Health Promotion Board's multi-behavioural health promotion system, NSC benefits from sharing resources such as information channels and infrastructures with other health programmes. For example, Healthy 365 App is a main touchpoint for several other PA and food programmes, including 'Eat, Drink, Shop Healthy Challenge' which is ongoing all year round. Since both NSC and 'Eat, Drink, Shop Healthy Challenge' are co-located within Healthy 365 App, NSC participants are nudged to join other PA or food programmes (and vice versa), and to remain active even outside NSC challenge periods.

NSC is a product of multi-sector partnerships, led by a governmental organisation leveraging partners across different industries. Health Promotion Board collaborates with establishments in sports and recreation, health and wellness, and food and beverages to bring participants attractive events and rewards. Health Promotion Board works with corporates and regional communities on multiple sub-scale events to reach out and engage participants. It also builds collaborations

with academic institutes conducting scientific research to strengthen the evidence base.⁵

Strong political and financial supports from the Ministry of Health, Singapore, are also essential contributions, without which the sustained long-term investments and improvements would not have been possible.

LESSONS LEARNT

NSC illustrates that mHealth-based PA interventions including financial rewards, which have primarily been introduced in small and controlled settings, can be successfully scaled up at the large population level.^{6,7} The reach of the programme can continuously be increased, at least in a country with supportive political and economic environment like Singapore, attracting large proportions of the population including participants who may not usually be affine to mHealth (eg, the elderly). This success is facilitated by embracing evidence-based practice, practice-based evidence, multi-behavioural framework, and partnerships with public and private entities in academia, technology, services and retails.

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