

**Developing evidence based guide
for public health**

Addressing the challenges of complexity and uncertainty

XIV
**HTAi
2017
Rome,
Italy**
JUNE 17-21, 2017
#HTAiRome2017

NICE National Institute for
Health and Care Excellence



Our role

- To improve outcomes for people using the NHS and other public health and social care services
- We do this by:
 - producing evidence-based guidance and advice for health, public health and social care practitioners
 - developing quality standards and performance metrics for those providing and commissioning health, public health and social care services
 - providing a range of information services for commissioners, practitioners and managers across the spectrum of health and social care

NICE National Institute for
Health and Care Excellence

NICE - our guidance

- Number of different 'what works' programmes across the Institute
 - NICE guidelines
 - Technology appraisals guidance
 - Medical technologies and diagnostics guidance
 - Interventional procedures guidance
- All are evidence based

NICE – our process

- Evidence is at the centre of our assessment processes
- Systematic methods used to search for, select, appraise, & synthesise evidence
- Range of methods used, depending on review question and the type of data
- Strength of recommendation reflects any uncertainty in the evidence

NICE – our approach

- In guidelines, the key question is often ‘does this intervention work?’
- We may also wish to know
 - When/in whom does this work/not work
 - How does this work?
 - What might help this intervention to work better?
- This requires us to
 - Recognise and consider complexity of interventions
 - And to assess and explore uncertainties

Complexity – what and where

- Definition of complexity
*“the state or quality of being intricate or complicated”**
- Can find this in
 - population
 - intervention
 - comparator
 - outcome
 - setting or system
 - type of evidence
 - decision making process??

Complexity – populations

- Physical activity: brief advice for adults in primary care
 - Guideline covers all adults attending primary care
 - Evidence base includes
 - younger and older adults
 - adults from different countries and health systems
 - adults with different levels of activity
 - adults from a range of socio-economic backgrounds
 - adults from a range of ethnic groups

Identifying adults who are inactive

- Identify adults who are not currently meeting the UK physical activity guidelines. This could be done, for example:
 - when the opportunity arises during a consultation with a primary care practitioner or while people are waiting
 - as part of a planned session on management of long-term conditions.
- Use professional judgement to determine when this assessment would be most appropriate, for example, when someone is presenting with a condition that could be alleviated by physical activity. When assessing activity levels, remain sensitive to people's overall circumstances. If it is not appropriate during the current consultation, carry out an assessment at the next available opportunity.
- Do not rely on visual cues (for example, body weight). Use validated tools such as GPPAQ to assess physical activity levels.
- For people who are not meeting the UK guidelines, identify the most appropriate time to discuss physical activity with them. This might be during the current consultation or in a later consultation, and might involve referral to another member of the primary care team. If they agree to a future consultation, make sure it occurs at the earliest opportunity. Ensure the person at least leaves the initial consultation aware of the health benefits of physical activity.
- Record the outcomes of the physical activity assessment. Use Read Codes if appropriate.
- Encourage people who are assessed as meeting the UK physical activity guidelines to maintain this level of activity.

Identifying adults who are inactive

- Based on
 - 5 evidence statements on
 - perceived patient characteristics
 - perceived likely uptake of advice
 - time resources and conflicting priorities
 - advice is curative not preventative
 - awareness of physical activity recommendations
 - no direct effectiveness evidence
 - evidence from qualitative studies and questionnaire surveys
 - expert knowledge of the committee

Identifying adults who are inactive



Complexity - interventions

- Physical activity in the workplace
 - Guidance covers workplace based policies and initiatives which aim to increase employees' physical activity levels and are applicable in England
 - Evidence base includes a range of interventions
 - stair walking
 - walking
 - active travel
 - multi-component

Complexity - interventions

- Stair walking
 - One study
 - written information provided to employees about physical activity for health benefits
 - action days encouraging the use of stairs instead of lifts
 - fruit offered on the stairs and a game of chance
 - Another study
 - health signs by the lifts and stairs on every floor of the worksite
 - e-mail to all employees on the benefits of taking the stairs

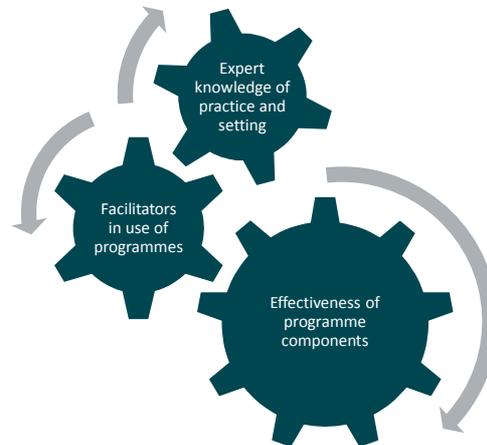
Components of the physical activity programme

- Encourage employees to walk, cycle or use another mode of transport involving physical activity to travel part or all of the way to and from work (for example, by developing a travel plan).
- Help employees to be physically active during the working day by:
 - where possible, encouraging them to move around more at work (for example, by walking to external meetings)
 - putting up signs at strategic points and distributing written information to encourage them to use the stairs rather than lifts if they can
 - providing information about walking and cycling routes and encouraging them to take short walks during work breaks
 - encouraging them to set goals on how far they walk and cycle and to monitor the distances they cover.
- Take account of the nature of the work and any health and safety issues. For example, many people already walk long distances during the working day, while those involved in shift work may be vulnerable if walking home alone at night.

Components of the physical activity programme

- Based on
 - 7 evidence statements
 - effectiveness of information to promote use of stairs
 - effectiveness of pedometers
 - effectiveness of a walking and cycling campaign
 - effectiveness of self-directed interventions
 - perceived facilitators to increased physical activity
 - effectiveness of multi-component interventions to increase stair use
 - effectiveness of employee sessions
 - effectiveness evidence from different study types (RCT, CT, ITS, BA)
 - contextual information on facilitators from qualitative studies
 - expert knowledge of the committee

Components of the physical activity programme



NICE National Institute for
Health and Care Excellence

Complexity - comparators

- Physical activity: exercise referral schemes
 - Guidance covers any control, for example usual ('brief') physical activity advice, no intervention, attention control or alternative forms of ERS
 - Evidence base includes a range of comparators
 - no exercise programme
 - 10 week group walking scheme
 - motivational counselling
 - usual exercise referral scheme/programme

NICE National Institute for
Health and Care Excellence

Complexity - outcomes

- Guideline in development
- One systematic review defined the primary outcomes as total physical activity

- | | |
|--|---|
| <ul style="list-style-type: none"> • Weighted physical activity • Vigorous physical activity time • Moderate physical activity time • Average daily moderate physical activity minutes • Average daily vigorous minutes • Average daily light minutes • Moderate physical activity bout • Change in accelerometer rate | <ul style="list-style-type: none"> • Moderate and vigorous physical activity • Weekly non-commute physical activity minutes • Change in total weekly time spent in recreational moderate to vigorous physical activity • Change in total weekly time spent in overall physical activity |
|--|---|

Complexity - outcomes

- Moderate and vigorous physical activity
 - minutes in moderate and hard physical activity
 - minutes per 10 hours of accelerometer wear
 - average moderate to vigorous physical activity in minutes per 10 hours wear

Complexity – setting or system

- Guideline in development on physical activity and the environment
- Guidance will cover
 - built environment including roads, pavements, the external areas of buildings and open 'grey' space, such as urban squares and pedestrianised areas.
 - natural environment, including 'green' and 'blue' spaces. Green spaces include: urban parks, open green areas, woods and forests, coastland and countryside, and paths and routes connecting them. Blue spaces include: the sea, lakes, rivers and canals.
- Context of increased interest and policy development in the UK

Complexity – type of evidence

- Often aiming to answer questions of 'what works' rather than 'what works best'
- Need to consider complexity as described above
- Examples illustrate typical evidence used to support recommendations in public health

Physical activity

- In collaboration with older people and their carers, offer tailored exercise and physical activity programmes in the community, focusing on:
 - a range of mixed exercise programmes of moderate intensity (for example, dancing, walking, swimming)
 - strength and resistance exercise, especially for frail older people
 - toning and stretching exercise.
- Ensure that exercise programmes reflect the preferences of older people.
- Encourage older people to attend sessions at least once or twice a week by explaining the benefits of regular physical activity.
- Advise older people and their carers how to exercise safely for 30 minutes a day (which can be broken down into 10-minute bursts) on 5 days each week or more. Provide useful examples of activities in daily life that would help achieve this (for example, shopping, housework, gardening, cycling).
- Invite regular feedback from participants and use it to inform the content of the service and to gauge levels of motivation.

NICE National Institute for
Health and Care Excellence

Physical activity

- Based on
 - 4 evidence statements
 - effectiveness of mixed exercise programmes and the perceived important features
 - effectiveness of strength and resistance programmes
 - effectiveness of aerobic exercise programmes
 - cost effectiveness of exercise programmes
 - effectiveness evidence from 3 meta-analyses (n=72 trials), and 1 primary study (RCT)
 - cost effectiveness from RCTs
- “The review identified a broad range of interventions and included evidence rarely found in traditional systematic reviews, notably qualitative research.”*

NICE National Institute for
Health and Care Excellence

Complexity – decision making processes?

- Multiple and competing perspectives
 - important outcomes
 - aim of the guideline or recommendations
- Consideration of wider 'knowledge'
 - societal values
 - legislation
 - public priorities
 - different types of evidence to help contextualise and understand effectiveness

GRADE – can it help?

- GRADE as a system supports exploration and description of uncertainty
 - risk of bias
 - inconsistency
 - imprecision
 - indirectness
- More work is needed on the complexity
 - GRADE Complex Interventions
 - GRADE PH
 - GIN AID Knowledge

Complexity and uncertainty – some solutions

- Learn from HTA experience
 - adopt principles
 - adapt methods
- Be transparent
 - good description of evidence to recommendations
 - recognise and acknowledge uncertainty
- Be creative
 - new approaches emergent for synthesis of evidence from complex intervention evaluations
 - increasing use of 'different' evidence or knowledge