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Evaluating the Efficacy and Service User Perceptions of a Preventive CVD Risk Assessment

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Knowledge and Perceptions of CVD Risk

- Nearly half of the general population underestimate their CVD risk. *(Webster R and Heeley E. Risk management and healthcare policy. 2010; 3: 49-60.)*
- CVD knowledge and perception of risk is less accurate among men than among women and among socioeconomically deprived individuals. *(Homko CJ, et al. Journal of Cardiovascular Nursing 2008;23(4):332-37; Kirkland SA, et al. 1986-1992. CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne 1999;161(8 Suppl):S10-6; Potvin L, et al CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne 2000;162(9 Suppl):S5-11.*
- Accurate knowledge of CVD and perception of CVD risk is important for adopting healthy behaviours.
- *"You can do anything you set your mind to." - Benjamin Franklin*

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Programme Delivered In

Different Settings

- GP Practices
- Pharmacies
- Local communities

Using a Variety of Software Systems

- Clinician centred software (i.e. EMIS Web®, TPP-SystmOne)
- Patient centred software (i.e. Health Options®)

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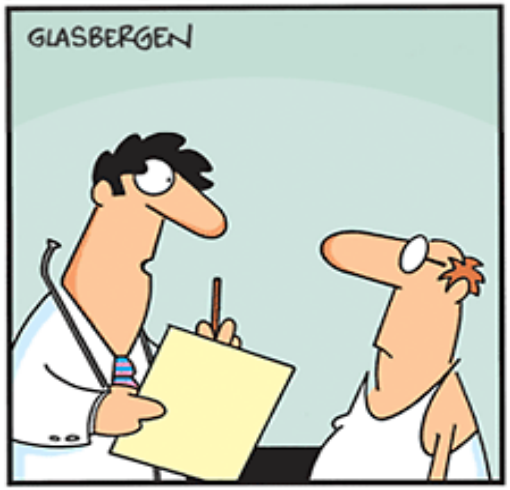
Communication of CVD Risk

Clinician Centred Software

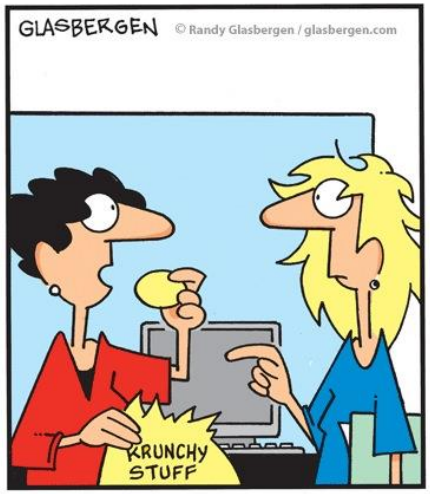


"Your blood sugar is high, but your salt, pepper, ketchup, mustard and grated cheese levels are fine."

Source: www.glasbergen.com/diet-health-fitness-medical/

- Patient is a passive recipient of information from clinician
- No opportunity to discuss risk reduction by changing risk factors

Patient Centred Software



"Each serving contains 17 grams of Who Cares, 22 grams of Mind Your Own Business and 54 grams of Shut Up And Let Me Enjoy My Food!"

Source: www.glasbergen.com/business-computer-cartoons/

- Patient and clinician view the results of the consultation together
- Opportunity to discuss risk reduction by changing risk factors

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Research Objectives

- Assess the impact of the programme on improving patients' understanding of CVD risk and accuracy of perceived CVD risk

- Evaluate which approach of delivering a preventive CVD risk reduction programme is more effective in educating individuals about managing their CVD risk

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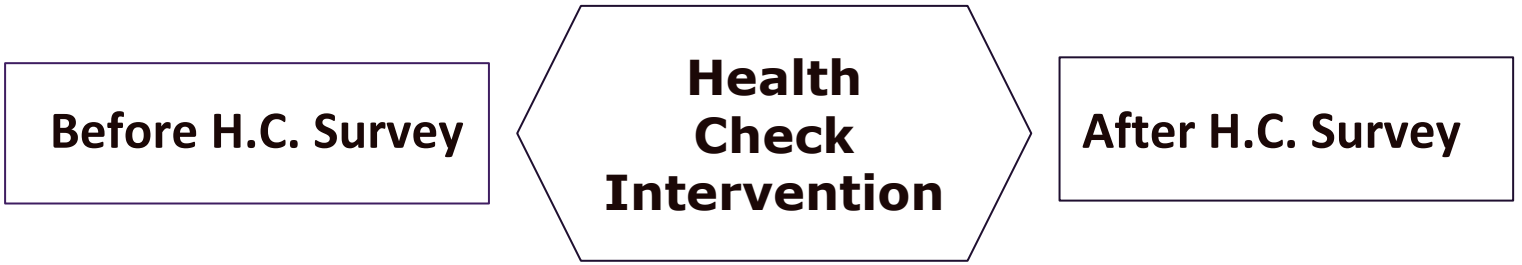
Research Questions

Are patients' perceptions of CVD risk more accurate as a result of attending the NHS Health Check?



Do patients have a better knowledge of CVD as a result of attending the NHS Health Check?

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ABCD Risk Questionnaire

26 Item questionnaire with satisfactory face and content validity and good reliability

Four subscales:

- Knowledge of CVD Risk and Prevention (8 items)
- Perceived Risk of Heart Attack/Stroke (8 items)
- Perceived Benefits and Intention to Change Behaviour (7 items)
- Healthy Eating Intentions (3 items)

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Study Recruitment

ABCD Risk Survey was administered to 918 service users in an uncontrolled ‘before and after’ study b/n October 2014 and April 2015

- Approach 1: general practices using clinician centred software (n=410)
- Approach 2: general practices using patient centred software (n=351)
- Approach 3: community providers using patient centred software (n=157)

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Proposed Methods of Analysis

- Compare CVD risk perception with actual CVD risk recorded in patient records
- Analyse changes in participants' correct assessment of risk category by McNemar's test
- Assess the differences in improvement of CVD risk perception between Health Check strategies using chi-squared tests
- Examine the determinants of improvement in risk categorization with a multivariate regression model

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Significance of Research

- Demonstrate whether a preventive CVD risk reduction programme works in educating patients about managing their risk of CVD

- Demonstrate whether or not there is a more effective way of delivering a preventive CVD risk assessment

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Appendix: Possible Questions

- How would you assess the accuracy in knowledge of CVD?
- How would you assess the patient's accuracy of CVD risk?
- Which approach is best for delivering the programme?
- Which questions form the four different scales of the ABCD Risk Questionnaire?

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Knowledge of CVD Risk and Prevention

Items	Coding
1. One of the main causes of heart attack and stroke is stress. 2. Walking and gardening are considered types of exercise that can lower the risk of having a heart attack or stroke. 3. Moderate intensity activity of 2 ½ hours a week will reduce your chances of developing a heart attack or stroke. 4. People who have diabetes are at higher risk of having a heart attack or stroke. 5. Managing your stress levels will help you to manage your blood pressure. 6. Drinking high levels of alcohol can increase your cholesterol and triglyceride levels. 7. HDL refers to 'good' cholesterol, and LDL refers to 'bad' cholesterol. 8. Family history of heart disease is not a risk factor for high blood pressure.	Higher score = more knowledgeable/more correct answers Correct Answers: Q1-T Q2-T Q3-T Q4-T Q5-T Q6-T Q7-T Q8-F

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Accuracy of CVD Risk

Compare the answers to these questions with medical records containing patient's CVD risk

I feel I will suffer from a heart attack or stroke sometime during my life.	**1 Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0**
It is likely that I will suffer from a heart attack or stroke in the future.	1 Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
It is likely that I will have a heart attack or stroke some time during my life.	1 Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
There is a good chance I will experience a heart attack or stroke in the next 10 years.	1 Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
My chances of suffering from a heart attack or stroke in the next 10 years are great.	1 Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
It is likely I will have a heart attack or stroke because of my past and/or present behaviours.	1 Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
I am concerned about the likelihood of having a heart attack or stroke in the near future.	1 Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
I am not worried that I might have a heart attack or stroke.	**Reverse coded** 4 Strongly disagree; 3 = disagree; 2 = agree; 1 = strongly agree; N/A = 0

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Which Approach is Best for Delivering the Programme?

H_0: The proportion of people who can correctly identify their risk category will be the same before and after the Health Check

- Approach 1 analysed separately
- Approach 2 analysed separately
- Approach 3 analysed separately

H0: The proportion of people who see an improvement in risk accuracy out of those who initially get their CVD risk score wrong is the same across three approaches of programme implementation

- Approach 1 = Approach 2
- Approach 2 = Approach 3
- Approach 1 = Approach 3

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Knowledge

Scale	Items	Coding
Knowledge Higher sum score = more knowledgeable / more correct about having a heart attack or stroke	1. One of the main causes of heart attack and stroke is stress. 2. Walking and gardening are considered types of exercise that can lower the risk of having a heart attack or stroke. 3. Moderately intense activity of 2 ½ hours a week will reduce your chances of having a heart attack or stroke. 4. People who have diabetes are at higher risk of having a heart attack or stroke. 5. Managing your stress levels will help you to manage your blood pressure. 6. Drinking high levels of alcohol can increase your cholesterol and triglyceride levels. 7. HDL refers to 'good' cholesterol, and LDL refers to 'bad' cholesterol. 8. A family history of heart disease is not a risk factor for high blood pressure.	Correct Answers: Q1-T Q2-T Q3-T Q4-T Q5-T Q6-T Q7-T Q8-F T= True F= False Correct: Score = 1, Incorrect or Don't Know: Score = 0.

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Perceived Risk of Heart Attack / Stroke

Perceived Risk of Heart Attack/Stroke Higher sum score = higher perception of risk of having a heart attack or stroke	I feel I will suffer from a heart attack or stroke sometime during my life.	1=Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
	It is likely that I will suffer from a heart attack or stroke in the future.	1=Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
	It is likely that I will have a heart attack or stroke some time during my life.	1=Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
	There is a good chance I will experience a heart attack or stroke in the next 10 years.	1=Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
	My chances of suffering from a heart attack or stroke in the next 10 years are great.	1=Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
	It is likely I will have a heart attack or stroke because of my past and/or present behaviours.	1=Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
	I am not worried that I might have a heart attack or stroke.	**Reverse coded** 4=Strongly disagree; 3 = disagree; 2 = agree; 1 = strongly agree; N/A = 0
	I am concerned about the likelihood of having a heart attack or stroke in the near future.	1=Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0

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Perceived Benefits and Intentions to Change

Perceived Benefits and Intentions to Change Higher average score = Higher perceived benefits of diet and exercise and higher perceived readiness for change in regards to exercise behaviour	I am thinking about exercising at least 2½ hours a week.	1=Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
	I intend or want to exercise at least 2½ hours a week.	1=Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
	When I exercise for at least 2½ hours a week I am doing something good for the health of my heart.	1=Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
	I am confident that I can maintain a healthy weight by exercising at least 2½ hours a week within the next two months.	1=Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
	I am not thinking about exercising for 2 ½ hours a week.	**Reverse coded** 4=Strongly disagree; 3 = disagree; 2 = agree; 1 = strongly agree; N/A = 0
	When I eat at least five portions of fruit and vegetables a day I am doing something good for the health of my heart.	1=Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
	Increasing my exercise to at least 2½ hours a week will decrease my chances of having a heart attack or stroke.	1=Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0

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Healthy Eating Intentions

Healthy Eating **Intentions** Higher average score = Higher perceived readiness for change with regard to health dietary behaviour	Q65. I am confident that I can eat at least five portions of fruit and vegetables per day within the next two months.	1=Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
	Q43. I am thinking about eating at least five portions of fruit and vegetables a day.	1=Strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree; N/A = 0
	Q21. I am not thinking about eating at least five portions of fruit and vegetables a day.	**Reverse coded** 4=Strongly disagree; 3 = disagree; 2 = agree; 1 = strongly agree; N/A = 0