NUFFIELD DEPARTMENT OF PRIMARY CARE HEALTH SCIENCES

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Ministry of Health

UNIVERSITY OF OXFORD

Simplifying Cardiovascular Risk Assessment

Mixed Methods Audit of MSF's NCD Mission in Irbid, Jordan – *Interim Results*

Prepared by Dylan Collins
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Background

- Total cardiovascular risk assessment is used to make decisions for primary prevention of CVD
- Its use in humanitarian and low-resource settings is largely unprecedented
- In response to the need for NCD primary health care for Syrian refugees, MSF developed clinical guidance which included total cardiovascular risk assessment
- This guidance was adapted from the World Health Organization's guidance for the prevention of CVD

Background

- Two versions of CVD risk charts exist: one that requires cholesterol and one that doesn't
- The current guidance uses the chart that requires cholesterol measurement

Aim

- We undertook a mixed methods clinical audit with the aim of simplifying guidance for cardiovascular risk assessment in humanitarian settings
- We hope these finings will be used to update guidance for MSF's mission in Irbid, as well as for new projects

Methods

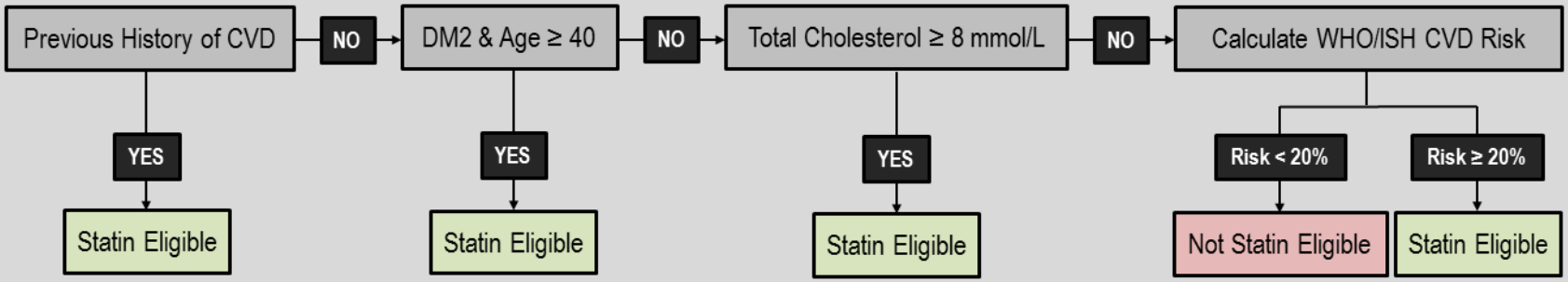
- We conducted both quantitative and qualitative analyses
- We audited the patient files of all eligible patients in MSF's NCD clinics in Irbid to determine if CVD risk assessment and statin prescribing was according to guidance (quantitative)
- We interviewed all clinical staff to help determine reasons for why guidance was not being followed and to develop recommendations for improvement (qualitative)

Quantitative Methods

- We reviewed routine clinical data of all eligible patients
    - Inclusion criteria were (1) patients over 40 years or (2) patients between 18 and 40 who were diabetic, smokers, had a high waist circumference, or a family history of CVD or DM
- We determined the proportion of patients with a documented and correct risk score
- We determined the appropriateness of statin prescribing

Are statins prescribed correctly?

- Statin eligibility is detailed in the flow diagram below



Are statins prescribed correctly?

- Of the 2,907 patients audited
  - 1,757 (60%) were eligible for statin and 848 (48%) were prescribed one
  - 1,150 were not eligible for statin and 188 (16%) were prescribed one

	History of CVD	DM2 & >=40	TC >=8 mmol/L	Risk <20%	Risk >=20%
Total (n)	608	1072	11	1150	66
Number Prescribed Statin (%)	429 (70.6)	401 (37.4)	7 (63.6)	188 (16.3)	11 (16.7)

Are statins prescribed correctly?

- Statin prescribing was best in patients with CVD – 71% were prescribed a statin
- Only 37% of patients over 40 with DM2 were prescribed a statin
- Statin prescribing did not differ between patients who were above or below the risk threshold

Are Risk Scores Documented?

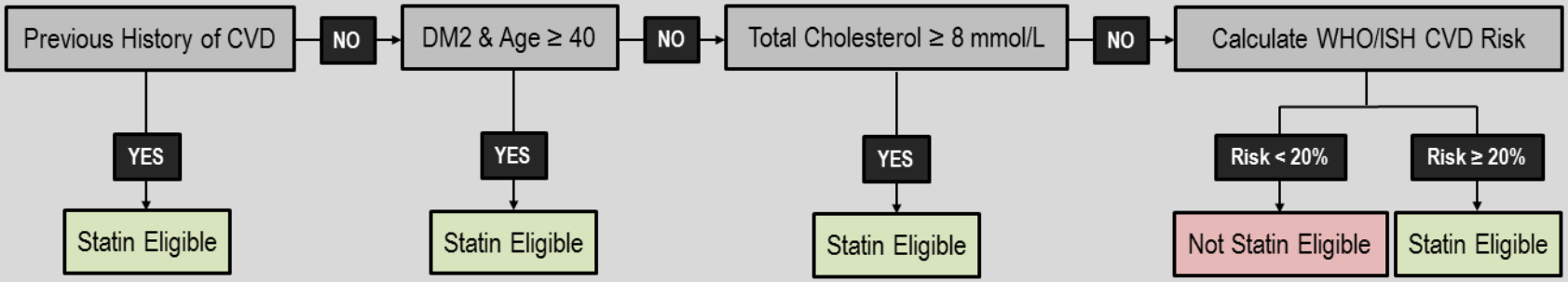
- Only 23% of patients had a documented risk score
  - 39% of documented risk scores were incorrect
- Therefore, 91% did not have a correctly documented CVD risk score

How can the clinical pathway be simplified?

- 58% of patients were eligible for statin prescription without risk assessment because they had a history of CVD or were over 40 and diabetic
- Only 5% of the remaining patients were eligible for statin prescription when risk assessed using cholesterol

How can the clinical pathway be simplified?

Current: clinical pathway with measured cholesterol and risk assessment



How can the clinical pathway be simplified?

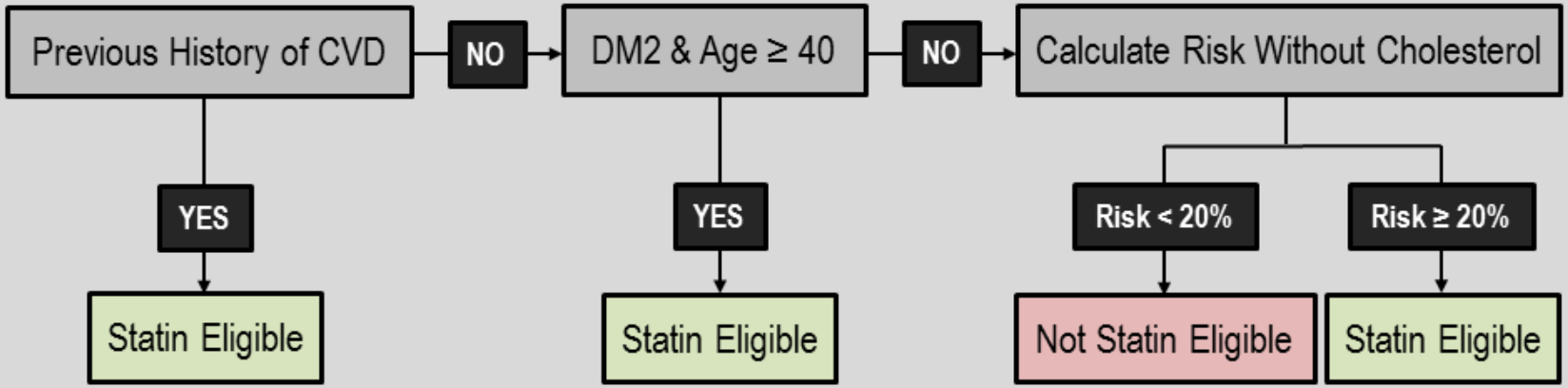
- The <u>overall</u> performance of the current system
  - 48% of patients who were eligible for statins were prescribed one
  - 16% of patients who were not eligible for statins were prescribed one

How can the clinical pathway be simplified?

- Risk assessment is not required in patients with a history of CVD or are diabetic (type 2) and over 40 *with respect to statin prescribing*
- Cholesterol-independent risk assessment could be used instead of cholesterol dependent risk assessment
- In patients who do not have a history of CVD or are diabetic and over 40, the sensitivity and specificity of no-cholesterol risk assessment was 0.67 and 0.99, respectively

How can the clinical pathway be simplified?

- Clinical workflow of cholesterol-independent pathway



How can the clinical pathway be simplified?

	Perfect Performance with Cholesterol Pathway*	Current Performance with Cholesterol Pathway*	Perfect Performance with No Cholesterol Pathway *
Under-treatment with statins**	0%	83%	33%
Over-treatment with statins***	0%	16%	1%

** assuming 100% treatment of patients who do not need risk assessment*

*** the proportion of patients who are eligible for statins but are not prescribed them*

**** the proportion of patients who are not eligible for statins who are prescribed them*

Qualitative Methods

- We used semi-structured interviews to interview MSF staff from the NCD project (n=16)
- Interviews were recorded, transcribed verbatim, and analyzed in NVivo using thematic analysis

Qualitative Findings

- Doctors cannot conduct risk assessment in first consultation because they need to wait for cholesterol results
- Misunderstanding of how to calculate score when patient blood pressure and age are beyond the boundaries of the risk chart
- Positive perception of risk assessment but sense of redundancy
- Some lack of understanding of the role of statins in primary prevention

Qualitative Findings

- Reliance on lifestyle ‘interventions’ as first line therapy in high risk patients
- Patients unlikely to respond to lifestyle interventiosn given their social and financial deprivation and poor mental health
    - Many of the health promotion sessions couldn’t focus on lifestyle changes because patients had more immediate mental health concerns
- Risk charts helped doctors communicate with patients and might also help with counselling and education

Qualitative Findings

- Home visits were generally regarded to be very valuable at reaching the most vulnerable, and for tailoring lifestyle counselling
- The refugee community has a strong influence on the health decisions of patients, which sometimes meant that patients did not want to take (or stop taking) medication because of rumors they heard
    - This might help explain some of the observed under-treatment

Conclusions

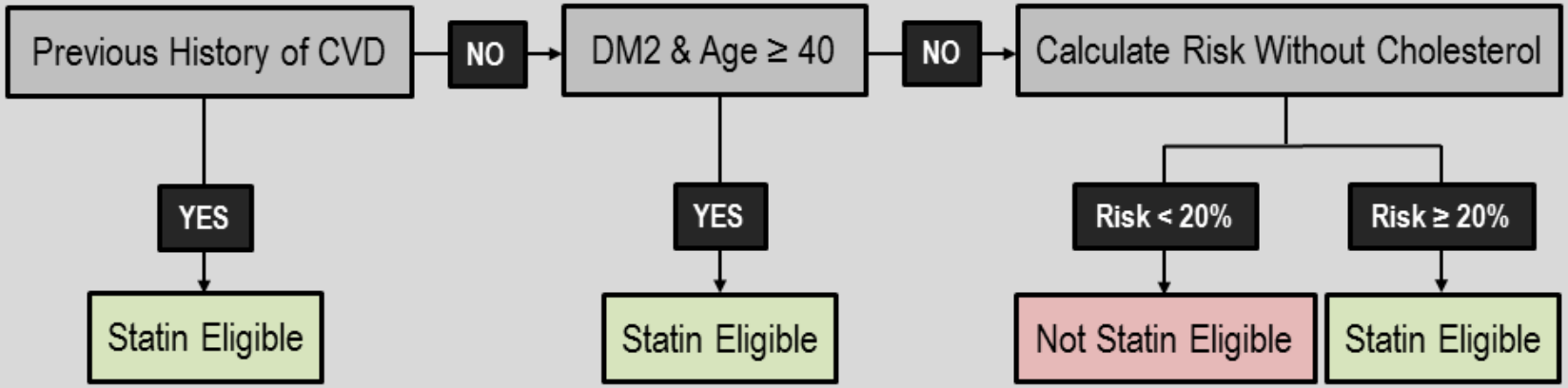
- Under-use of statins may be because doctors favor lifestyle intervention, but also because of poor understanding of risk calculation and the role of statins in primary prevention and patient preferences
- Patients unlikely to respond to life style changes given their social and financial deprivation and poor mental health, and because time with nurses and health promoters often spent discussing trauma
    - Reliance on lifestyle interventions may not be effective in high risk patients

Conclusions

- Half of patients in the clinic did not need risk assessment for a statin prescription, yet only half of these patients were prescribed a statin
  - Focus on these patients (easy win)
- If the simple, cholesterol-independent, model was used, this might lead to overall improvement in statin prescribing
- Once this is adhered to, then perhaps consider adding the additional complexity of cholesterol measurement

Conclusions

- The most significant improvements will be made by identifying and treating patients with a previous history of CVD and diabetics over 40
- So few of the remaining patients were high risk that cholesterol testing not likely to be of much benefit



Future Work

- Gather feedback from co-investigators
- Develop recommendations
- Implement recommendations
- Re-audit to see if performance improves
- Share our work in an academic journal and at a conference

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