

Understanding Why Prediction Models Are Used in Clinical Care

Start time: [survey-time-started:Form 1]
End time: [survey-time-completed:Form 1]

Thank you for taking the time to look at our survey.

We want to understand more about how you use prediction models. This will help us to identify what makes clinicians use these tools and what makes them most useful. We also want to understand the barriers to their usage.

We would like to hear the views of clinical staff working in any field. This includes healthcare professionals (e.g. Doctors, Midwives, Nurses, Physiotherapist, Operating Department Practitioners, Pharmacists, physician's assistants), practicing in hospitals or in the community, in either public or private settings.

This survey will take 15 minutes to complete and will identify the most important ingredients of prediction models.

Your participation is voluntary, and you can stop completing the survey at any time. If you leave your email address, you can withdraw your data from the study up to 2 weeks after you complete the survey.

If you would like to receive the results of this study or are willing to be contacted by the research team to take part in later parts of the study or other relevant research projects, we ask that you leave your email address.

For the full information about the study please click the document link below.

If you have any concerns to raise about the conduct of this study, please contact ethics@liv.ac.uk.

If you have any queries about the study, please email options@liverpool.ac.uk

[Attachment: "Participant Information Sheet - Prediction Models in Use V1.0 020524.pdf"]

Consent to take part in the survey If you are willing to take part in the survey, please complete the following questions to consent to take part:

I confirm that I have read and understood the participant information sheet dated 02/05/24 for the study.	☐ Yes ☐ No
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I understand that my participation is voluntary and that I am free to stop taking part any time. I understand that I can withdraw my data up to two weeks after completing the survey.	☐ Yes ☐ No
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I understand that the information I provide will remain anonymous and will be held securely and in line with data protection requirements at the University of Liverpool.	☐ Yes ☐ No
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I understand that my email address will not be linked to my answers.

I understand that once anonymised, the data will be deposited in a University of Liverpool secure server for sharing and use by other authorised researchers to support other research in the future.	☐ Yes ☐ No
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I agree to take part in the survey.

- ☐ Yes
☐ No

Would you be willing to be contacted by the research team to be invited to join or comment on other parts of this study and other relevant research projects?

- ☐ Yes
☐ No

I wish to be contacted by email by the research team about the results of this study.

- ☐ Yes
☐ No

Please provide your email address so that we may contact you:

Please confirm your email address:

Email addresses do not match

Email addresses match

Section 1: First, a few things about you....

To allow us to analyse the results of the study, we need some brief information about you and your expertise. Please select the most appropriate answers.

Are you a?
(Please check all that apply to you)

- ☐ Doctor
☐ Nurse
☐ Midwife
☐ Physiotherapist
☐ Paramedic
☐ Physician's Assistant
☐ Operating Department Practitioner (ODP)
☐ Pharmacist
☐ Other healthcare professional

Please specify role:

Which area do you work in?

- ☐ General Practice (GP)/ Community Medicine
☐ Acute Medicine
☐ Anaesthetics
☐ Intensive Care Unit (ITU)
☐ Medicine/Internal Medicine
☐ Oncology
☐ Surgery
☐ Paediatrics
☐ Obstetrics and Gynaecology
☐ Psychiatry
☐ Public Health
☐ Genetics
☐ Pharmacology
☐ Medical Microbiology
☐ Other

Please specify your specialty:

What country do you work in?

- ☐ Afghanistan
- ☐ Albania
- ☐ Algeria
- ☐ Andorra
- ☐ Angola
- ☐ Antigua and Barbuda
- ☐ Argentina
- ☐ Armenia
- ☐ Australia
- ☐ Austria
- ☐ Azerbaijan
- ☐ The Bahamas
- ☐ Bahrain
- ☐ Bangladesh
- ☐ Barbados
- ☐ Belarus
- ☐ Belgium
- ☐ Belize
- ☐ Benin
- ☐ Bhutan
- ☐ Bolivia
- ☐ Bosnia and Herzegovina
- ☐ Botswana
- ☐ Brazil
- ☐ Brunei
- ☐ Bulgaria
- ☐ Burkina Faso
- ☐ Burundi
- ☐ Cabo Verde
- ☐ Cambodia
- ☐ Cameroon
- ☐ Canada
- ☐ Central African Republic
- ☐ Chad
- ☐ Chile
- ☐ China
- ☐ Colombia
- ☐ Comoros
- ☐ Congo, Democratic Republic of the
- ☐ Congo, Republic of the
- ☐ Costa Rica
- ☐ Côte d'Ivoire
- ☐ Croatia
- ☐ Cuba
- ☐ Cyprus
- ☐ Czech Republic
- ☐ Denmark
- ☐ Djibouti
- ☐ Dominica
- ☐ Dominican Republic
- ☐ East Timor
- ☐ (Timor-Leste)
- ☐ Ecuador
- ☐ Egypt
- ☐ El Salvador
- ☐ Equatorial Guinea
- ☐ Eritrea
- ☐ Estonia
- ☐ Eswatini
- ☐ Ethiopia
- ☐ Fiji
- ☐ Finland
- ☐ France
- ☐ Gabon
- ☐ The Gambia
- ☐ Georgia
- ☐ Germany
- ☐ Ghana
- ☐ Greece

- ☐ Grenada
- ☐ Guatemala
- ☐ Guinea
- ☐ Guinea-Bissau
- ☐ Guyana
- ☐ Haiti
- ☐ Honduras
- ☐ Hungary
- ☐ Iceland
- ☐ India
- ☐ Indonesia
- ☐ Iran
- ☐ Iraq
- ☐ Ireland
- ☐ Israel
- ☐ Italy
- ☐ Jamaica
- ☐ Japan
- ☐ Jordan
- ☐ Kazakhstan
- ☐ Kenya
- ☐ Kiribati
- ☐ Korea, North
- ☐ Korea, South
- ☐ Kosovo
- ☐ Kuwait
- ☐ Kyrgyzstan
- ☐ Laos
- ☐ Latvia
- ☐ Lebanon
- ☐ Lesotho
- ☐ Liberia
- ☐ Libya
- ☐ Liechtenstein
- ☐ Lithuania
- ☐ Luxembourg
- ☐ Madagascar
- ☐ Malawi
- ☐ Malaysia
- ☐ Maldives
- ☐ Mali
- ☐ Malta
- ☐ Marshall Islands
- ☐ Mauritania
- ☐ Mauritius
- ☐ Mexico
- ☐ Micronesia, Federated States of
- ☐ Moldova
- ☐ Monaco
- ☐ Mongolia
- ☐ Montenegro
- ☐ Morocco
- ☐ Mozambique
- ☐ Myanmar (Burma)
- ☐ Namibia
- ☐ Nauru
- ☐ Nepal
- ☐ Netherlands
- ☐ New Zealand
- ☐ Nicaragua
- ☐ Niger
- ☐ Nigeria
- ☐ North Macedonia
- ☐ Norway
- ☐ Oman
- ☐ Pakistan
- ☐ Palau
- ☐ Panama
- ☐ Papua New Guinea
- ☐ Paraguay
- ☐ Peru

- ☐ Philippines
- ☐ Poland
- ☐ Portugal
- ☐ Qatar
- ☐ Romania
- ☐ Russia
- ☐ Rwanda
- ☐ Saint Kitts and Nevis
- ☐ Saint Lucia
- ☐ Saint Vincent and the Grenadines
- ☐ Samoa
- ☐ San Marino
- ☐ Sao Tome and Principe
- ☐ Saudi Arabia
- ☐ Senegal
- ☐ Serbia
- ☐ Seychelles
- ☐ Sierra Leone
- ☐ Singapore
- ☐ Slovakia
- ☐ Slovenia
- ☐ Solomon Islands
- ☐ Somalia
- ☐ South Africa
- ☐ Spain
- ☐ Sri Lanka
- ☐ Sudan
- ☐ Sudan, South
- ☐ Suriname
- ☐ Sweden
- ☐ Switzerland
- ☐ Syria
- ☐ Taiwan
- ☐ Tajikistan
- ☐ Tanzania
- ☐ Thailand
- ☐ Togo
- ☐ Tonga
- ☐ Trinidad and Tobago
- ☐ Tunisia
- ☐ Turkey
- ☐ Turkmenistan
- ☐ Tuvalu
- ☐ Uganda
- ☐ Ukraine
- ☐ United Arab Emirates
- ☐ United Kingdom
- ☐ United States
- ☐ Uruguay
- ☐ Uzbekistan
- ☐ Vanuatu
- ☐ Vatican City
- ☐ Venezuela
- ☐ Vietnam
- ☐ Yemen
- ☐ Zambia
- ☐ Zimbabwe

If you answered UK, which region do you work in?

- ☐ North West England
- ☐ North East England
- ☐ Yorkshire and the Humber
- ☐ East Midlands
- ☐ West Midlands
- ☐ East of England
- ☐ London
- ☐ South East England
- ☐ South West England
- ☐ Scotland
- ☐ Wales
- ☐ Northern Ireland
- ☐ Other

If other, please specify your region:

What healthcare setting do you work in?

- ☐ Hospital
- ☐ GP practice
- ☐ Community
- ☐ Office/Ambulatory
- ☐ Other

If other, please specify your healthcare setting:

Do you work in?

- ☐ Public/Government clinical setting
- ☐ Private healthcare clinical setting
- ☐ Mix of both
- ☐ Charity/not-for-profit
- ☐ Other

If other, please specify your sector:

Your age:

- ☐ Under 25
- ☐ 25-35
- ☐ 36-45
- ☐ 46-55
- ☐ 56-65
- ☐ Above 65

Your sex:

- ☐ Male
- ☐ Female
- ☐ Other
- ☐ Prefer not to say

If other, please specify:

What is your ethnicity? (select all that apply)

- ☐ White/Caucasian
- ☐ Black/African/African American
- ☐ Hispanic/Latino/Spanish
- ☐ Asian
- ☐ Native American/Indigenous
- ☐ Pacific Islander
- ☐ Middle Eastern/North African
- ☐ Mixed/Multi-ethnic
- ☐ Other

If other, please specify your ethnicity:

Years of clinical experience in your role:

- ☐ Less than 2 years
☐ 2-5 years
☐ 6-10 years
☐ More than 10 years
-

Section 2: Clinical prediction model use...

Are you aware of any clinical prediction models that are relevant to your clinical practice?

- ☐ Yes
☐ No
☐ Unsure
-

If you are unsure please elaborate:

Do you use any clinical prediction models?

- ☐ Yes
☐ No
☐ Unsure
-

If you are unsure please elaborate:

Which of the following prediction models have you heard of? (You can select one or multiple if you choose)

- ☐ QRISK (1,2 or 3)
☐ CHA2DS2-VASc Score
☐ ATRIA Bleeding Risk Score
☐ FRAX
☐ CURB-65 Score
☐ APACHE II
☐ SOFA
☐ POSSUM
☐ TIMI Risk Score
☐ Framingham Risk Score
☐ Duke Criteria
☐ HAS-BLED Score
☐ GRACE Score
☐ BODE Index
☐ PREDICT Breast Cancer Model
☐ TNM Staging System
☐ RMI (Risk of Malignancy Index)
☐ QUIPP
☐ Flamm/Grobman VBAC Calculator
☐ Fetal Medicine Foundation risk prediction models:
☐ Pre-eclampsia
☐ SGA
☐ Trisomies
☐ Gestational diabetes
☐ Miscarriage
☐ Stillbirth
☐ Fetal growth restriction
☐ Fetal macrosomia
☐ Preterm birth - history
☐ Preterm birth - cervix
☐ PIERS Model
☐ PRISM
☐ Other
-

If other, please specify

Which of the following prediction models, do you use in your clinical practice?

- ☐ QRISK (1,2 or 3)
- ☐ CHA2DS2-VASc Score
- ☐ ATRIA Bleeding Risk Score
- ☐ FRAX
- ☐ CURB-65 Score
- ☐ APACHE II
- ☐ SOFA
- ☐ POSSUM
- ☐ TIMI Risk Score
- ☐ Framingham Risk Score
- ☐ Duke Criteria
- ☐ HAS-BLED Score
- ☐ GRACE Score
- ☐ BODE Index
- ☐ PREDICT Breast Cancer Model
- ☐ TNM Staging System
- ☐ RMI (Risk of Malignancy Index)
- ☐ QUIPP
- ☐ Flamm/Grobman VBAC Calculator
- ☐ Fetal Medicine Foundation risk prediction models:
- ☐ Pre-eclampsia
- ☐ SGA
- ☐ Trisomies
- ☐ Gestational diabetes
- ☐ Miscarriage
- ☐ Stillbirth
- ☐ Fetal growth restriction
- ☐ Fetal macrosomia
- ☐ Preterm birth - history
- ☐ Preterm birth - cervix
- ☐ PIERS Model
- ☐ PRISM
- ☐ Other

If other, please specify

Are there any other prediction models that you have heard of, that are relevant to your clinical practice? Please list in the text box provided.

In what format is/are the prediction model(s) that you use? Can select multiple answers.

- ☐ Paper form
- ☐ Website
- ☐ Smartphone/Mobile App
- ☐ Both website and mobile app
- ☐ Other

If other, please specify:

How often do you use the clinical prediction model(s)?

- ☐ Multiple times a day
- ☐ Almost daily
- ☐ About once a week
- ☐ About once a month
- ☐ Several times a year
- ☐ About once a year or less

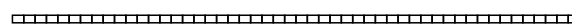
Why is it that you use the prediction model(s) that you have selected or described?

Section 3: Factors influencing usage and success...

Using the scale, how important is it for the prediction model to present the evidence underpinning it within the app/website/hard copy? 1 being not important at all, 10 being extremely important.

Not important at
all

Extremely
important



(Place a mark on the scale above)

In your opinion, which format would you prefer prediction models to present their results to you? Select one or more options

% percentage risk

Heat Map

Bar Chart

Pie Chart

Icon Array

Sliding Scale

- ☐ Percentage Risk
- ☐ Heat map
- ☐ Bar chart
- ☐ Pie chart
- ☐ Icon array
- ☐ Sliding scale
- ☐ A mixture of icons to illustrate the same result
- ☐ Other

If other, please specify:

What would/does encourage you to use prediction models in your clinical practice? Select one or more options

- ☐ Easy to access
- ☐ Easy to use
- ☐ Guidelines
- ☐ My supervisor/line manager
- ☐ The evidence advises it
- ☐ To aid communication
- ☐ To personalise medical care
- ☐ To use as a decision aid
- ☐ Good graphics to represent what I want to communicate
- ☐ Other

If other, please elaborate:

What hinders/ would hinder the effective use of clinical prediction models in your practice? Can select one or more options

- ☐ Accessibility
- ☐ Internet access
- ☐ Personal/mobile device
- ☐ Hospital computer
- ☐ Lack of available paper copies
- ☐ Whether they are in line with current practice
- ☐ Amount of data to input
- ☐ Lack of consistent use throughout my specialty
- ☐ Other

If Other, please elaborate:

In which format would you prefer to access a clinical prediction model? Select one or more options

- ☐ Paper
- ☐ Website
- ☐ Mobile App
- ☐ Other

If other, please specify:

Prediction models are most useful if they are made to be used by...

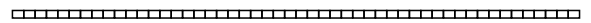
- ☐ Clinical staff
☐ Patients
☐ Both
-

What would persuade you to use a clinical prediction model in your routine practice?

Section 4: Evaluation of clinical prediction models

Using the scale below, how useful do/would you find prediction models in your clinical practice? 1 being not useful at all to 10 being extremely useful

Not useful at all Extremely useful



(Place a mark on the scale above)

Is there anything that would make them more useful?

How satisfied are you with the usability and accessibility of the clinical prediction models you have used? 1 being very unsatisfied and 10 being very satisfied

Very Unsatisfied Neutral Very Satisfied



(Place a mark on the scale above)

Do/would you check if the prediction tool is CE/UKCA marked/adheres to medical device standards?

- ☐ Yes
☐ No
☐ Unsure about this
☐ Other
-

If other, please elaborate:

Section 5: Additional Comments

Please share any additional comments or thoughts regarding clinical prediction models that you think would be valuable in informing us as to how to best display and disseminate clinical prediction models for ease of use:
