



The Safer Prescription of Opioids Tool

Instructions For Use

April 2017

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Chapter 1: Introduction:

SPOT is a new kind of medical device. It is a 'Clinician decision support' tool (CDS).

SPOT is designed to educate and aid you in your prescribing practice.

SPOT does not replace your clinical judgement.

The aim of SPOT is to help prescribers when prescribing opioids in Palliative and End of Life Care situations.

It does this by:

- Linking directly to the Scottish Palliative Care Guidelines
- Sends you a copy of your equianalgesic dose calculation results
- Lists the available preparations in the pharmacy for your selected drug
- Calculates the equianalgesic conversion between two opioids.
- Saving a list of your calculations for revalidation purposes.

SPOT is based on what I needed as a junior prescriber. It has been reviewed by senior consultants in Palliative care across Scotland, including Dr Deans Buchanan.

I hope that you find SPOT a useful resource. Please email me if there is anything that you feel should be improved:

rflint@nhs.net.

Deans Buchanan, Jacob George, Roger Flint. February 2017

Technology:

SPOT is a 'web app'.

A 'web app' or 'Website application' is software that runs on a website. It looks like an 'app' that you download to your smartphone, but allows you to access it using different platforms such as Windows computers, smartphones and Apple macs.

SPOT is CE marked. It is a Class I Medical Device, and is registered with the Medicines and Healthcare Regulatory Authority in the UK.

Background:

SPOT was developed by a small team of doctors, app developers and a regulatory expert, and has been funded by grants from Scottish Enterprise and PATCH, and personal contribution.

Chapter 2: Accessing SPOT - First Time Usage:

IMPORTANT - PLEASE NOTE

Not all NHS computers are compatible with SPOT due to the age of their software.

If SPOT does not work on your NHS computer, please try your smartphone, tablet or a University Computer.

First time usage - Step 1: Email invitation

When granted access to SPOT, you will receive the following email to your NHS address:

Dr Flint

Join NHS Tayside Validation Study on Spot!

To: Roger Flint

Inbox - dundee.ac.uk 11:21

DF

Roger, you have been invited to Spot.

You're receiving this email because you have been invited to join **NHS Tayside Validation Study** on Spot.

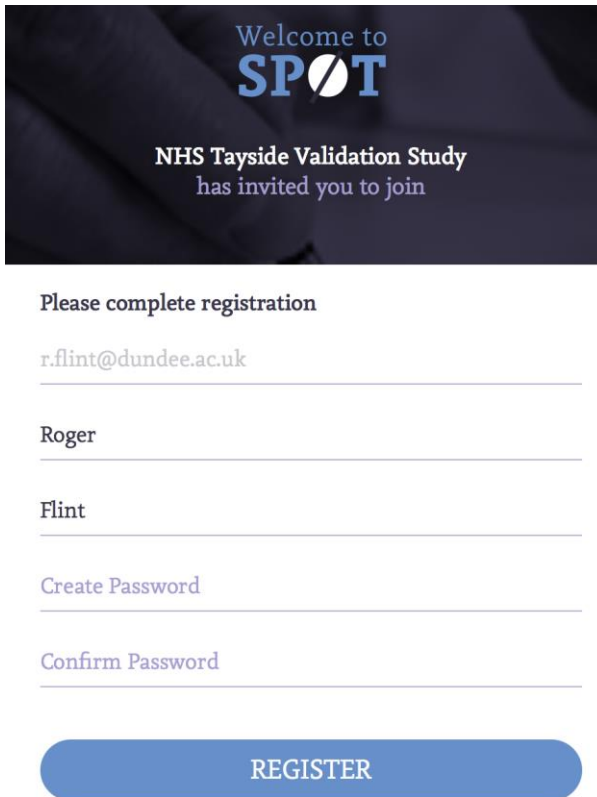
To accept this invitation and register, please follow the link below:

<https://opioidcalculator.co.uk/invite/accept/e862f39c61fd1e45bc1cf907b4d1466e>

Yours sincerely,
The SPOT team

First time usage - Step 2: Choosing a password

On a compatible computer, or on your smartphone, Click the highlighted link in the email to be taken to the registration page. You will be asked to chose a password to access SPOT:



The image shows a registration form for SPOT. At the top, there is a dark blue banner with the text "Welcome to SPOT" in white, where the 'O' in SPOT is a white circle with a diagonal line. Below this, it says "NHS Tayside Validation Study has invited you to join" in white. The form itself is white and contains the following fields and elements:

- A label "Please complete registration" in bold black text.
- An email input field containing "r.flint@dundee.ac.uk".
- A name input field containing "Roger".
- A name input field containing "Flint".
- A password input field labeled "Create Password".
- A password input field labeled "Confirm Password".
- A large blue button with the text "REGISTER" in white capital letters.

Once you enter a password above and click register, SPOT will save your password. Please keep a note of your password.

Click the 'Back to Login' button to login and start using SPOT.



« BACK TO LOGIN

Move to next chapter.

Chapter 3: Accessing SPOT - Subsequent and ongoing use

IMPORTANT - PLEASE NOTE

Not all NHS computers are compatible with SPOT due to the age of their software.

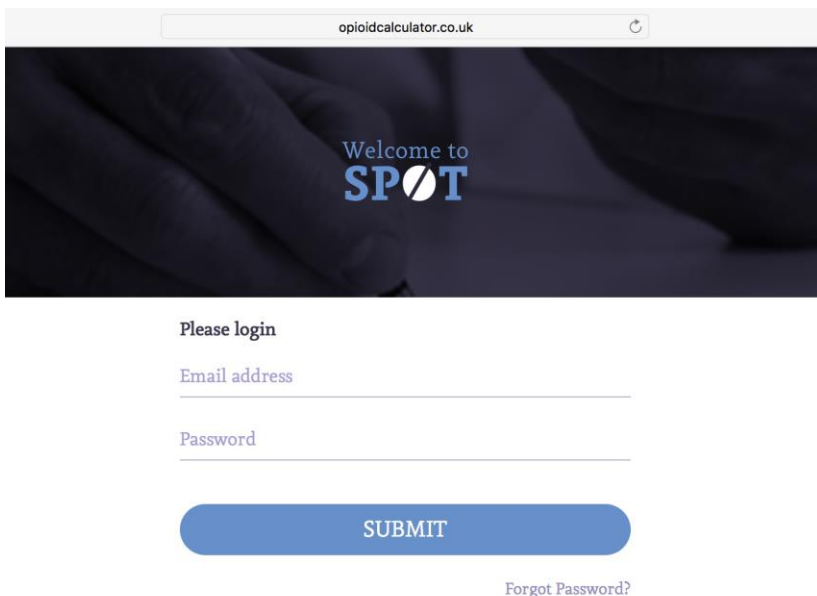
If SPOT does not work on your NHS computer, please try your smartphone or a University Computer.

Please read 'Accessing SPOT - First usage' If you have not already done so

Step 1: Login page

Once your account is set up, go to:

www.opioidcalculator.co.uk



The screenshot shows a web browser window with the address bar displaying 'opioidcalculator.co.uk'. The main content area has a dark background with a close-up image of a hand. In the center, it says 'Welcome to SPOT' where the 'O' in SPOT is a white circle with a diagonal line through it. Below this, the text 'Please login' is followed by two input fields: 'Email address' and 'Password'. A blue 'SUBMIT' button is at the bottom, and a link for 'Forgot Password?' is in the bottom right corner.

Please login

Email address

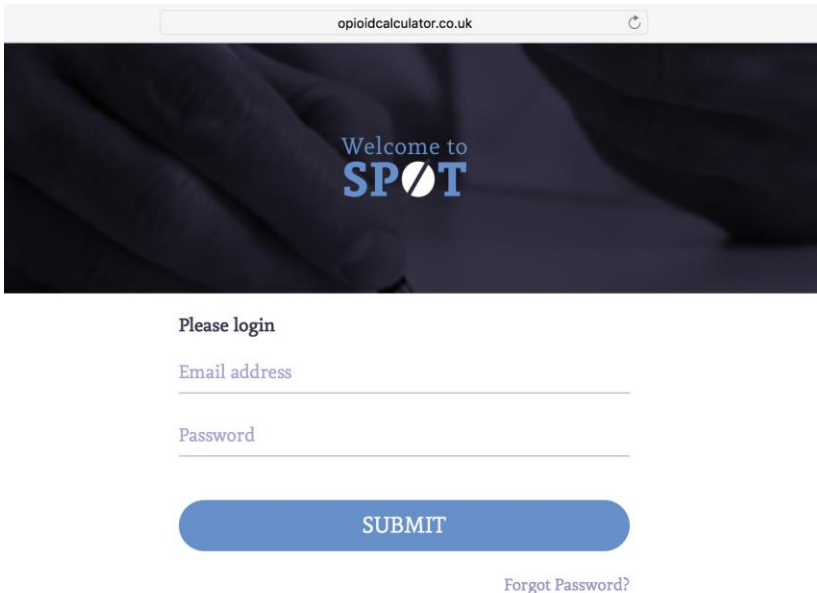
Password

SUBMIT

Forgot Password?

If using a compatible internet browser, you will be presented with the login page:

If presented with a light-purple blank page, the internet browser you are using is not compatible. Please try using a different device.

A screenshot of a web browser showing the login page for SPOT. The browser's address bar displays 'opioidcalculator.co.uk'. The page features a dark blue background with a close-up image of a hand. In the center, the text 'Welcome to SPOT' is displayed, with 'SPOT' in a larger, bold font and a white circle with a diagonal line through it. Below this, the text 'Please login' is followed by two input fields labeled 'Email address' and 'Password'. A blue 'SUBMIT' button is positioned below the fields. At the bottom right, there is a link that says 'Forgot Password?'.

opioidcalculator.co.uk

Welcome to
SPOT

Please login

Email address

Password

SUBMIT

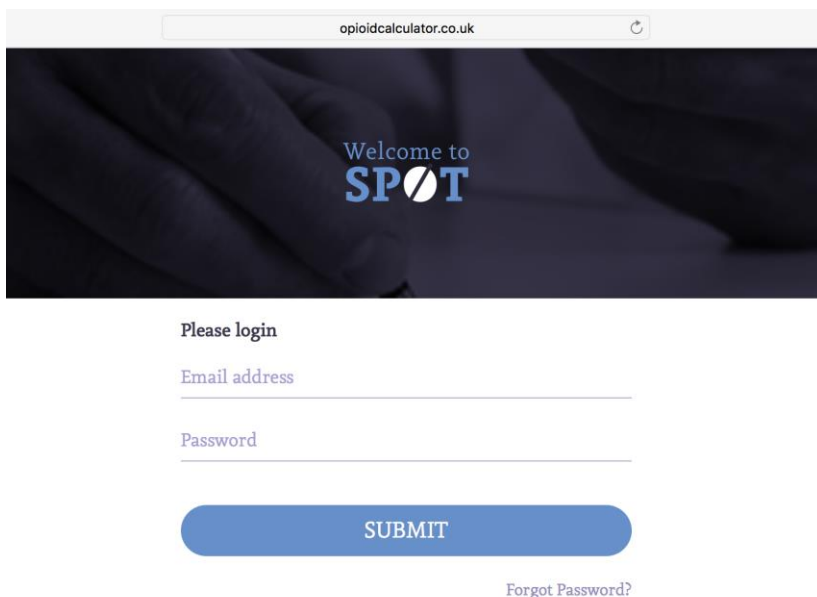
[Forgot Password?](#)

Step 2: Start using SPOT.

In the 'Email Address' section, please enter your NHS email address.

Under 'Password', enter the password you chose on initial setup.

Click 'Submit' to login to SPOT.



The screenshot shows a web browser window with the address bar displaying "opioidcalculator.co.uk". The main content area has a dark background with a close-up image of a hand. In the center, it says "Welcome to SPOT" in white and blue text. Below this, the text "Please login" is displayed. There are two input fields: "Email address" and "Password", both with light blue text and underlined. Below the "Password" field is a blue rounded rectangular button with the word "SUBMIT" in white capital letters. To the right of the button is a link that says "Forgot Password?" in a smaller, lighter blue font.

Chapter 4: Forgotten Password

If you forget your password, click the 'Forgot Password' link on the login page:



Forgotten your password?

Email address

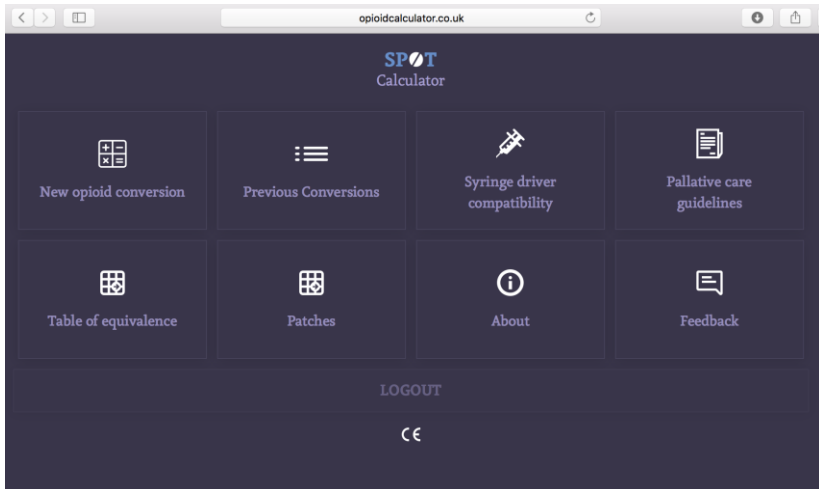
SUBMIT

[« Back to Login](#)

SPOT will ask you to enter your NHS email address.

Do so, and click 'Submit'

An email link with instructions of how to reset your password will be sent to your NHS email address.



Chapter 5: SPOT - The Home Screen:

Once you successfully login to SPOT, you will see the 'Home Screen'

The 'Home Screen' provides links to SPOT's functionality.

These are as follows:

1. New Opioid Conversion
2. Previous Conversions
3. Syringe Driver Compatibility
4. Palliative Care Guidelines
5. Table of Equivalence
6. Patches

- 7. About
- 8. Feedback

Additionally, the 'Home Screen' Contains the 'Logout' button, and the CE designation.

Chapter 6: New Opioid Conversion

Important Note:

SPOT is a clinician decision support application. It is not a prescribing device.

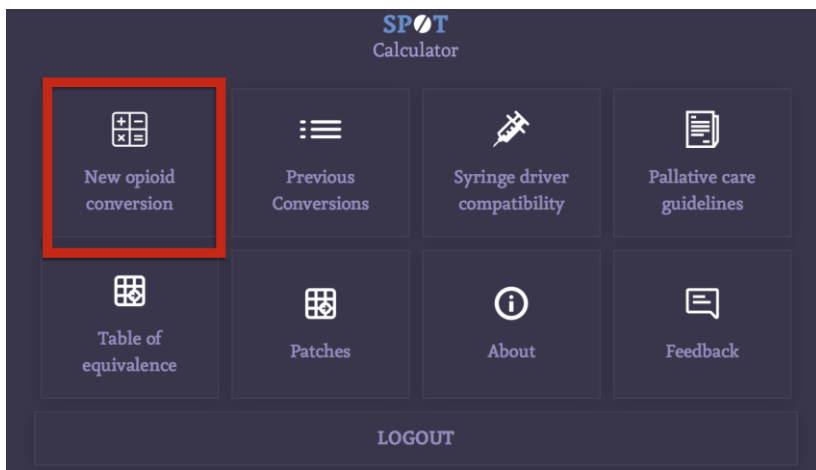
You are encouraged to use SPOT to double check your own calculations, but you CANNOT use SPOT to prescribe.

You **MUST** calculate your own drug conversions before using SPOT.

You are ultimately responsible for your prescriptions.

New Opioid Conversion - Step 1:

To access the equianalgesic converter, click on 'New



Opioid Conversion' on the 'Home Screen':

New Opioid Conversion - Step 2:

Reminder

The intended use of this application is to double-check your work. Please confirm that you have already carried out your calculation manually.

NO

CONFIRM

Sponsored by **PATCH**

The following page appears:

As noted above, you must perform your own calculation first.

Once you have performed your own dose conversion, click 'Confirm' to continue. The following page will load.

SPOT
Calculator

1

Patient info

Type of pain
Cancer, Renal Failure, etc

>

Age
Select

>

Gender
Select

>

eGFR
Select

>

← PREVIOUS

NEXT →

New
Opioid
Con-
ver-
sion -
Step
3: Pa-
tient
infor-


mation.

This page asks for information about your patient. The requested information is **not** patient identifiable. However, it should allow **you** to identify the patients that you have seen that day. These information form the basis of the information of patients that you have seen, and must be accurate.

Once complete, click 'Next'

Click on each heading to input the requested patient information.

SPOT
Calculator



1

Patient info

Cancer pain
Non-cancer pain
Renal failure
Opioid switch

← PREVIOUS

NEXT →

New Opioid Conversion - Step 4: Reason for use:
This page asks you to input the reason that you are using SPOT. Please chose the most accurate heading. If none are applicable, choose 'Opioid Switch'.
Once complete, click "Next"

New Opioid Conversion - Step 5+6: Age and Gender.

Likewise, enter the patient's Age and Gender by clicking on the heading and using the keyboard to input the correct figures. You will be left with something similar to the

SPOT
Calculator

1

Patient info

Type of pain
Opioid switch

>

Age
50

>

Gender
Male

>

eGFR
Select

>

← PREVIOUS

NEXT →

below:

New Opioid Conversion - Step 7: eGFR

The next stage is to enter the patient's eGFR. This is a measure of renal function, and affects clearance of certain opioids. As discussed previously, SPOT is a clinician decision support device, NOT a prescribing device. As such it DOES NOT correct for eGFR. You must do any

SPOT
Calculator

1 Patient info

eGFR

Enter eGFR

Unknown

Submit

← PREVIOUS

NEXT →

such correction manually.

If you know the patient's eGFR, use the keyboard to enter above, and then click 'Submit'. If you do not know, use the 'Unknown' button, and click 'Next'.

New Opioid Conversion - Step 8: eGFR warning and next page

If you select an eGFR <30, or an unknown eGFR, SPOT

SPOT
Calculator

1 Patient info

Warning! Please note that renal impairment can affect drug clearance. The calculator does NOT correct for eGFR - you must discuss this with a senior doctor.

Type of pain

Opioid switch

>

Age

50

>

Gender

Male

>

eGFR

unknown

>

← PREVIOUS

NEXT →

will warn you.

Click 'Next' to acknowledge the warning and continue.

New Opioid Conversion - Step 9: Patient Current Opioid

SPOT
Calculator

2

Current Opioid

Opioid

Select

>

Administration Method

Select

>

24hr dose (mg)

Select

>

←

PREVIOUS

NEXT

→

Details:
This page requires you to enter your patient's current opioid regimen.

Please select 'Opioid', and chose the correct opioid from the drop-down list.

Then select 'Administration Method' and you will be given a list of administration methods relevant for your selected drug. Choose one of these routes.

Finally, select 24 hour dose. You are required to input the total 24 hour dosage of the opioid selected above via the selected route of administration.

IMPORTANT NOTE: to avoid confusion, dosages are requested in **mg** ONLY.

SPOT
Calculator

2 Current Opioid

Opioid Morphine	>
Administration Method Subcutaneous	>
24hr dose (mg) 24	>

← PREVIOUS

NEXT →

You should end up with something similar to the below:
Example: Patient's last total 24 hour dosage was 24mg of subcutaneous morphine.

Once the selected Opioid, Administration Method and 24 Hour dose (mg) are correct, click 'Submit' to move to the next page.

New Opioid Conversion - Step 10: Patient New Opioid

SPOT
Calculator

3

New Opioid

Opioid

Select

>

Administration Method

Select

>

Calculate Breakthrough

Yes

← PREVIOUS

NEXT →

Details:

This page requests details of the opioid that you wish to switch your patient to. Please enter the Opioid and Administration Method as per the previous screen.

Should you wish to calculate a 'Breakthrough' dosage, select 'Yes' on the slide button.

IMPORTANT NOTE:

Breakthrough dosage calculations use the Scottish Palliative Care Guidelines convention of 1/6th of the total 24

SPOT
Calculator

3

New Opioid

Opioid

Diamorphine

>

Administration Method

Subcutaneous

>

Calculate Breakthrough

Yes

← PREVIOUS

NEXT →

hour dose as the breakthrough dosage.

Example: New opioid chosen of Subcutaneous Diamorphine and requesting SPOT calculate a breakthrough:

Once you have selected your Opioid and Administration route, and chosen whether to you wish SPOT to calculate a breakthrough or not, click 'Next' to proceed to the next page.

New Opioid Conversion - Step 11: **Research version only**

Step 11 asks you, the user, to record the answer to your own calculations. This is for the validation study, and will

SPOT
Calculator

4 Calculated results

Patient Setting
Select

Calculation Summary

Subcutaneous Morphine, 24 mg

Subcutaneous Diamorphine

What did you calculate?
Select

Breakthrough?
Select

← PREVIOUS

NEXT →

not be present following validation.

This is so that we can validate SPOT using clinical data, comparing the result that you have calculated compared to that which SPOT produces.

This page requests three inputs:

1. The patient setting. I.e. where you saw the patient.

Options are as follows:

- Community Out Patient
- In Patient GP Hospital
- In Patient Acute Hospital
- In Patient SPCU
- Other

2. The result of the conversion that you calculated for the total 24 hour dosage 'Calculation result'.

3. Your breakthrough calculation result.

Once you have inputted the answers to your own calculations and chosen the setting, click 'Next' to continue.

SPOT
Calculator

Subcutaneous Morphine

24mg

↓

Subcutaneous Diamorphine

16
mg

Breakthrough: 2.67 mg of Subcutaneous Diamorphine
Please consider drug interactions

Preparation

5mg, 10mg, 30mg, 100mg, 500mg Ampoules

Show Calculation

+

×

NO MATCH

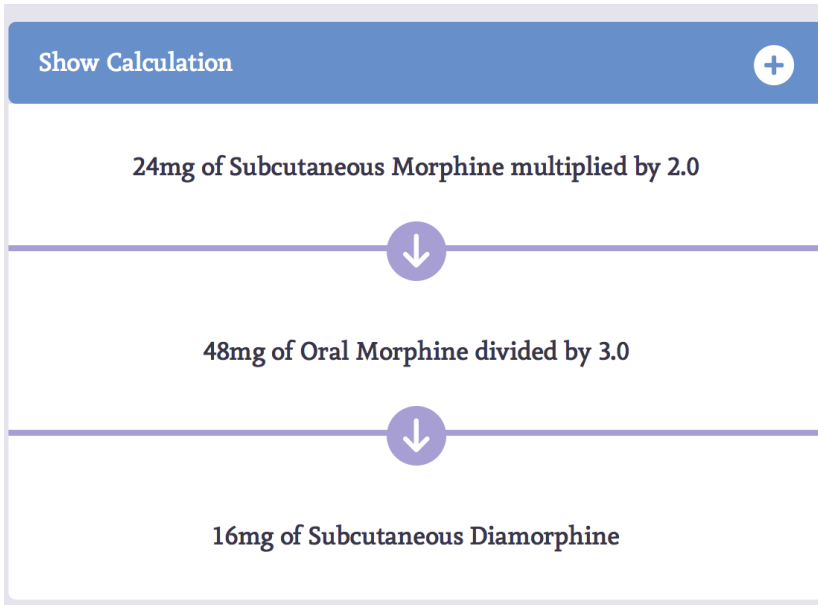
✓

MATCH

New Opioid Conversion - Step 12: Results.

The next page shows SPOT's calculation results, the preparations available for the selected drug in the pharmacy, the breakthrough calculation, and gives the option to view the calculation pathway that SPOT used.

Should you wish to view the calculation pathway, select



‘Show Calculation’

Finally to complete the calculation, SPOT presents you



with ‘Match’ and ‘No Match’ options.

If your manual calculation is the same as SPOT’s calculation, select the ‘Match option’.

If your manual calculation is not the same as SPOT's calculated answer, select the 'No Match' option.

New Opioid Conversion - Step 13: Match / No Match:

SPOT
Calculator

5

Prescription details

Frequency

Select

>

Amount

Select

>

Review Period

Select

>

Skip

SUBMIT →

Option 1 - Match:

If your manual calculation answer is the same as SPOT's calculated answer, choose the 'Match option"

SPOT will ask you for the details of the prescription that you wrote for the patient.

These details will be emailed to you. Once the prescription details have been entered, select 'Submit' to save the calculation and return to the 'Home Screen'.

Should you not wish to record your prescription details, select 'Skip'. This will save the calculation, but not your prescription details, and take you back to the 'Home Screen'.

Option 2 - No Match

Select ‘No Match’ If your manual calculation answer is

SPOT
Calculator

5

Reason for no match

Reason

Select

SUBMIT

→

not the same as SPOT’s answer.

SPOT will ask you to fill out the reason for ‘No Match’

The reasons available are as follows:

- Manual miscalculation
- Low eGFR
- Clinical decision
- Preparation of drug unavailable
- Dosage of drug not physically possible
- Other
- The app is incorrect

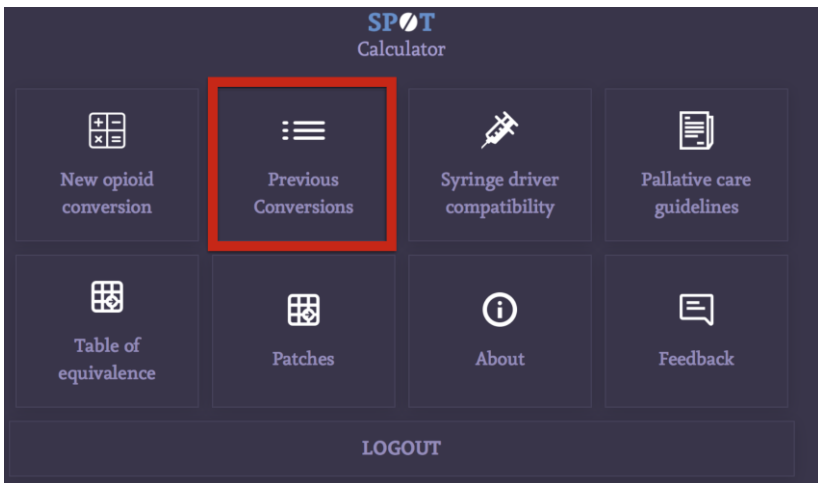
If you do have a 'No Match', and select 'Other' please leave a comment as to why SPOT did not match.

Once you select a reason, SPOT will return you to the 'Home Screen'.

Chapter 7: Previous Opioid Conversions:

SPOT is designed to save a list of your equianalgesic conversions. These data evidence your prescribing for re-validation purposes. Additionally, SPOT stores information for research and audit.

To access your list of previous conversions, select 'Previ-



ous conversions' on the 'Home Screen'.

Your previous conversions are listed on the page:
You can select whether to see ‘All’ conversions, or “This

SPOT Previous Conversions			
This Month		All	
13/2/17	Morphine Subcutaneous	→ Diamorphine Subcutaneous	>
13/2/17	Morphine Subcutaneous	→ Diamorphine Subcutaneous	>
10/2/17	Oxycodone Oral	→ Diamorphine Subcutaneous	>
23/1/17	Dihydrocodeine Oral	→ Morphine Subcutaneous	>

Month’s’.

Should you wish to see more detail on a particular conversion, click on the record. The date of the calculation is recorded for ease of reference.

Clicking on a record gives you information about the conversion. The patient's demographics are displayed, as well as the result of the calculation and if it did or did not

match. Additionally, there is the option to see the calculation

SPOT

Previous Conversions

13/2/17

×

No Match

Subcutaneous Morphine

24.00mg

↓

Subcutaneous Diamorphine

16.00mg

Breakthrough: 2.67 mg of Subcutaneous Diamorphine

Preparation

5mg, 10mg, 30mg, 100mg, 500mg Ampoules

Show Calculation

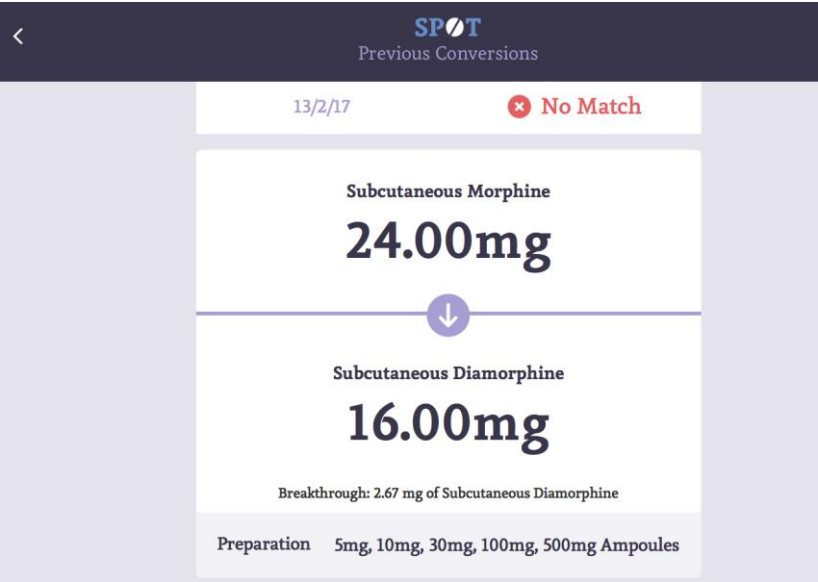
+

Details

Type of pain	Opioid switch
Age	50
Gender	Male
eGFR	N/A

again by clicking ‘Show calculation’

Select the 'Back button' (highlighted in a red box below) in the top left hand side of the page to return to the

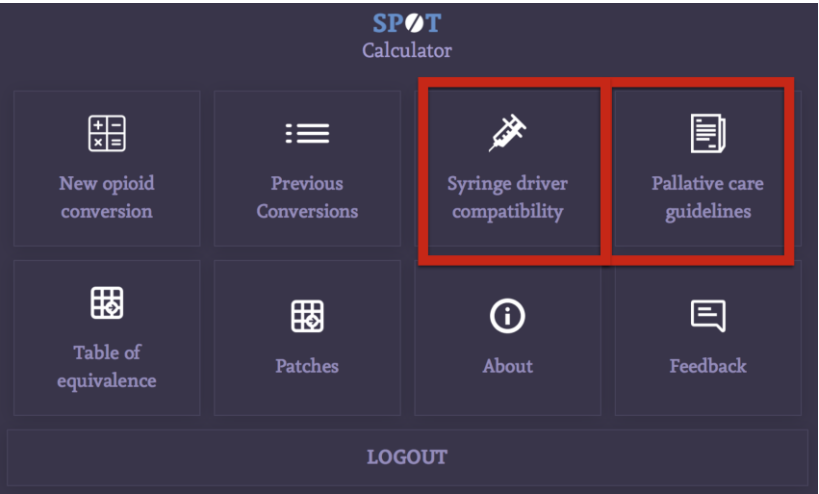


'Home Screen'.



Chapter 8: Syringe Driver Compatibility and Scottish Palliative Care Guidelines

SPOT is designed to educate and inform. It provides links to the Scottish Palliative Care Guidelines Home Page and a direct link to the Syringe Driver Compatibility

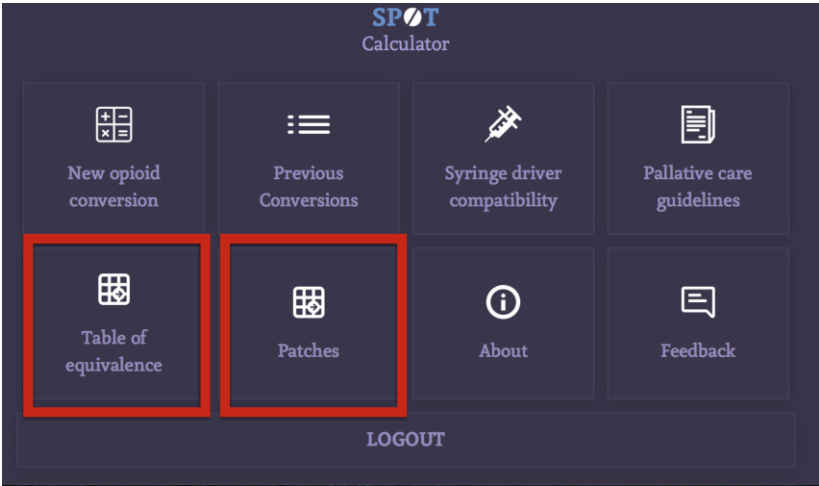


pages.

To access these resources from the ‘Home Screen’, ensure you have an active internet connection and click on the appropriate link. These will open in a new window. Close the window when you have finished to return to the SPOT ‘Home Screen’.

Chapter 9:Table of Equivalence and Patches

To review the equianalgesic tables and patch tables, se-



lect these from the ‘Home Screen’.

These tables form the basis of SPOT’s conversion algorithm and are based on the Scottish Palliative Care Guidelines.

The table of equivalence gives the equianalgesic ratio between the selected drug and route of administration, com-

SPOT Table of Equivalence	
Codeine	
Admin route	Oral Morphine ratio
Oral	0.1
Dihydrocodeine	
Admin route	Oral Morphine ratio
Oral	0.1
Morphine	
Admin route	Oral Morphine ratio
Subcutaneous	2.0
Intravenous	2.0
Oral	1.0
Diamorphine	
Admin route	Oral Morphine ratio
Subcutaneous	3.0
Intravenous	3.0

pared with 1mg of oral morphine. For example, 1mg of oral morphine is equivalent to 10mg oral codeine, or 0.5 mg subcutaneous morphine.

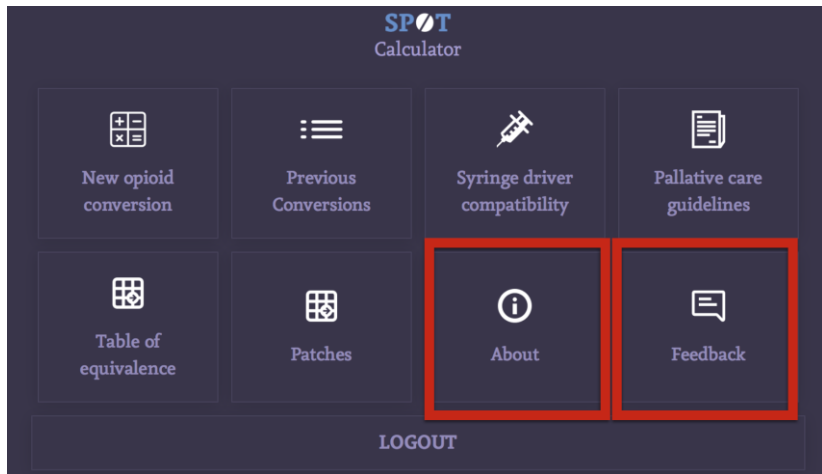
The patch table gives an approximate equianalgesic equivalence for transdermal fentanyl and Buprenorphine

Transdermal Fentanyl conversions	
Oral morphine 24 hour intake (mg)	Fentanyl Patch equivalent (microgram per hour)
30	12
60	25
90	37
120	50
180	75
240	100

Transdermal Buprenorphine conversions	
Oral morphine 24 hour intake (mg)	Buprenorphine Patch equivalent (microgram per hour)
12	5
24	10
48	20
84	35
126	52
168	70

conversions

To return to the home screen, select the ‘Back’ button in the top left hand corner.



Chapter 10: About and Feedback

The 'About' page on the home screen links to www.doctorflint.co.uk

Which tells you more about SPOT, its design and creation, and the team behind SPOT.

'Feedback' Sends a email directly to the SPOT team.

Chapter 11: Logout

Once you have finished using SPOT, remember to Logout.

Thank you for reading the instructions for use.

ENDS