Economic Evaluation of Virtual Ward Programmes Model User Guide

User Guide Contents

Health Innovation Network South London
YHEC York Health Economics Consortium
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Model Context and Overview

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Model Overview

- Background
  - This section provides a brief overview of the model and information on the documents that accompany this user guide.

- Abbreviations
  - Information on the abbreviations used in this user guide.

- Key Terms
  - The key terms required to understand the economic model are outlined in this section.

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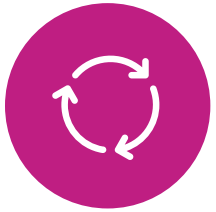
Background



The Health Innovation Network (HIN) South London commissioned York Health Economics Consortium (YHEC) to adapt an economic cost model of virtual wards (VWs) in South West London into a generic economic cost model for VWs that can be used to inform evaluations of VWs for any London ICB.

The model has been designed for local ICB to update with their own data. An example scenario is populated in the model with assumptions.

The aim of this user guide is to give instructions on how to navigate and use the Excel model named “YHEC London VW DRAFT model v2.0”.

Additional information on the model context and interpretation is provided in the accompanying document to this user guide “YHEC HIN VW Model Context and Interpretation V3.0”.

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Abbreviations

DSA	Deterministic sensitivity analysis
HIN	Health Innovation Network
ICB	Integrated Care Board
LOS	Length of stay
PSSRU	Personal Social Services Research Unit
VW	Virtual ward
YHEC	York Health Economics Consortium

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Key Terms

Terms	Definition
VWs	Virtual wards (VWs) support people who would otherwise be in hospital to receive acute care, monitoring, and treatment in their own home. This includes preventing avoidable admissions into hospital (‘step-up’ care) or supporting early discharge out of hospital (‘step-down’ care). VW care is being provided in many different combinations of technology-enabled and face-to-face care.
Standard care	Standard care refers to the care patients would otherwise receive in the absence of VWs and the model assumes that this is hospital inpatient care.
Resource use	Resource use refers to the use of healthcare staff time, facilities, or consumables (especially medicines).
DSA	Deterministic sensitivity analysis (DSA) is a method that can be used to investigate the sensitivity of the results from a model-based analysis to variations in a specific input parameter or set of parameters. One or more parameters are manually changed (usually across a pre-specified range) and the results are analysed to determine to what extent the change has an impact on the output values.
Tornado diagrams	Tornado diagrams are used to present the result of multiple univariate sensitivity analyses on a single graph. Each analysis is summarised using a horizontal bar which represents the variation in the model output around a central value (corresponding to the base case analysis) as the relevant parameter is varied between two plausible but extreme values. Tornado diagrams are used to help the reviewer assess which of the model’s parameters have the greatest influence on its results.

*Key Economic terms are also outlined on the glossary sheet of the model.

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Model Navigation

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Model Navigation Overview

- Launching the model
  - A guide on how to ensure the model operates correctly after opening the Excel file.

- Model key
  - This section outlines how to interpret different cells within the model.

- Navigation pane
  - A brief explanation of how to navigate through the model.

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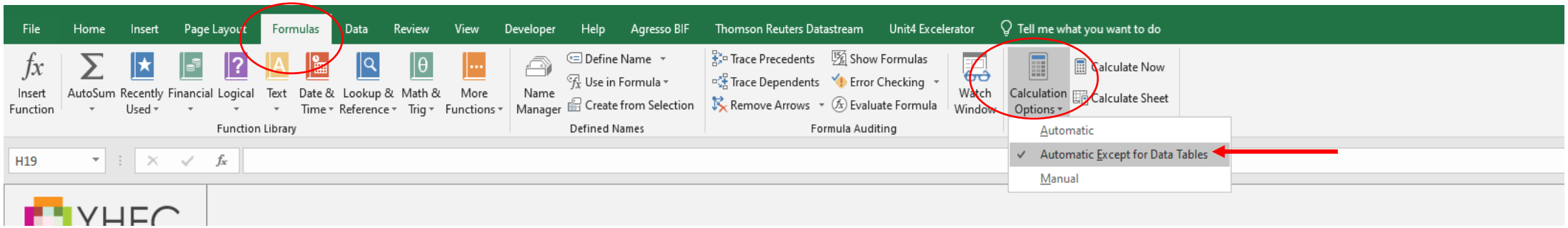
Launching the Model

- The model is run in Microsoft Excel. Please save the file to your hard drive prior to opening the file.

- Once open, please complete these preliminary checks to ensure the model operates correctly:

1) Ensure macros are enabled when prompted.

2) Select 'Formulas' in the Ribbon and select 'Automatic Except for Data Tables' under 'Calculation Options'.



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Model Key

Blue background	Indicates input cells. These can be changed as appropriate to your requirements.
Orange background	Indicates input cells where placeholder data have been used. These should be updated as and when data become available.
Red text	Indicates a formula cell. These are dependent upon other cells and should not be changed. There are no password or protected sheets.
Comments	A red mark in the corner of a cell indicates a comment. To view the comment, hover the pointer over the cell.
	An information button contains written information that can be viewed when clicked on.

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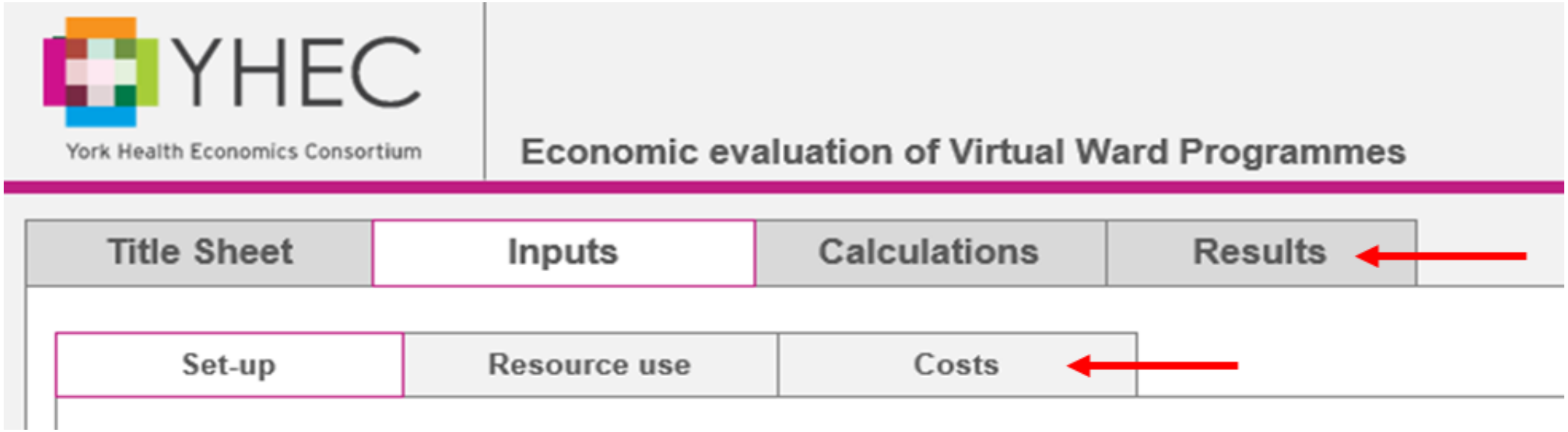
Navigation Pane

- It is recommended you navigate through the model using the buttons provided. Click on each button to go to each area of the model.

- The first layer of buttons shows the main sections in the model. The second layer splits these sections into subsections.



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Model Inputs

Model Inputs Overview

- How to update the inputs
  - A brief guide on how to update the inputs in the model.

- Model Inputs Sheets
  - This section outlines in detail the model input sheets that can be updated by the user. A full guide on how to use these sheets is provided.

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User Defined Cells Example 1

1. User-defined cells are blue. These cells are useful if a model user wishes to enter an alternative value, to be used in the model, without overwriting the initial base case value in the adjacent cell.

Virtual ward population	Base case	User-defined	Live
Proportion of patients tech-enabled	0.0%	5.0%	5.0%
Proportion of patients non-tech-enabled	100.0%		100.0%

2. The model will calculate the results using the values in the live column.

3. Please note, after entering a user-defined value, the value must be deleted for the model to return to using the default value.

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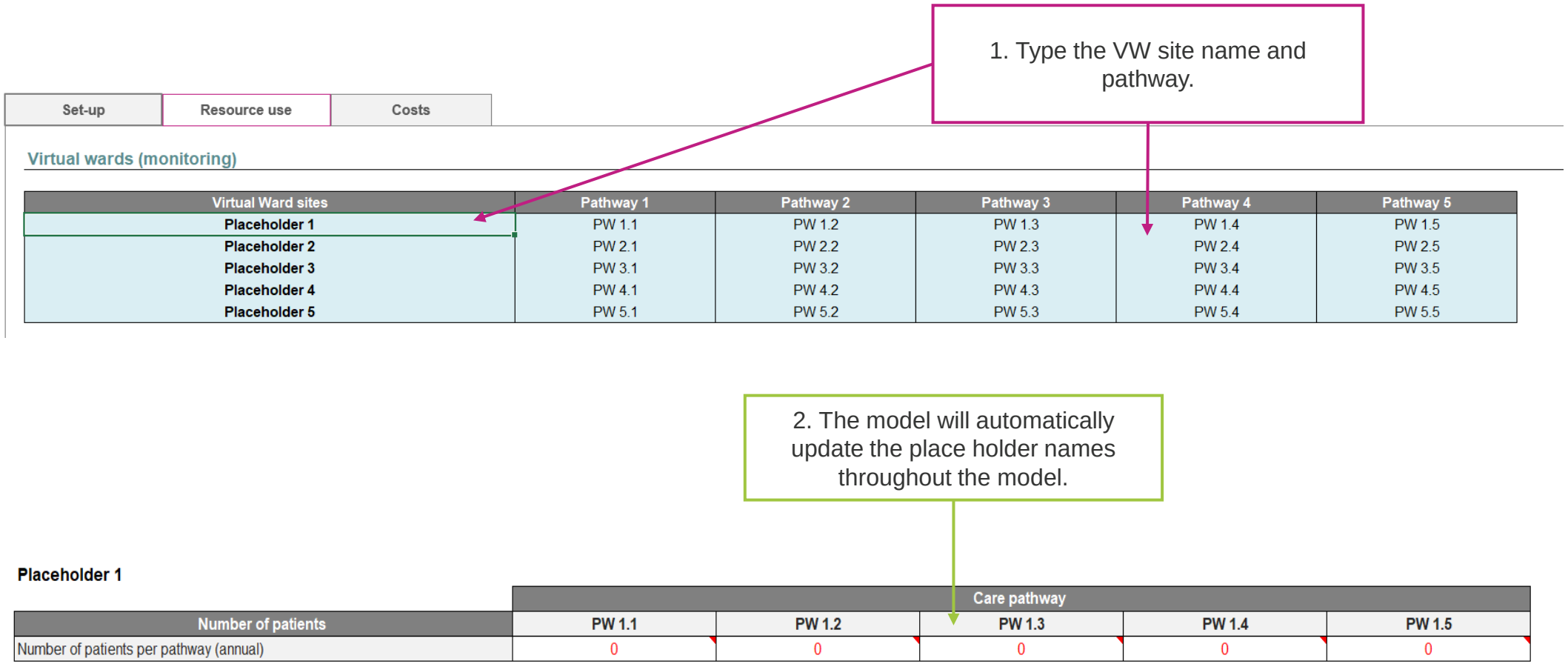
User Defined Cells Example 2



Virtual Ward sites	Pathway 1	Pathway 2	Pathway 3	Pathway 4	Pathway 5
Placeholder 1	PW 1.1	PW 1.2	PW 1.3	PW 1.4	PW 1.5
Placeholder 2	PW 2.1	PW 2.2	PW 2.3	PW 2.4	PW 2.5
Placeholder 3	PW 3.1	PW 3.2	PW 3.3	PW 3.4	PW 3.5
Placeholder 4	PW 4.1	PW 4.2	PW 4.3	PW 4.4	PW 4.5
Placeholder 5	PW 5.1	PW 5.2	PW 5.3	PW 5.4	PW 5.5

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Drop-down Boxes Example

Set-up | Resource use | Costs

Set-up

Perspective	UK NHS (ICB)
Intervention	Virtual ward (VW) in the form of Hospital at Home or Digitally Enabled care
Comparator select	Standard Care
Time horizon	1 year
Population modifier (virtual wards)	1.00
Select virtual ward site	Example Scenario
Select virtual ward by pathway	ARI

1. Use the drop-down menu to select a subpopulation.

Click to update VW site and pathway names

2. To update the virtual ward site and pathway names please go to the VW Resource use breakdown sheet (shown on the previous slide) using the button provided.

Virtual ward population	Base case	User-defined	Live
Proportion of patients tech-enabled	90.0%		90.0%
Proportion of patients non-tech-enabled	10.0%		10.0%

	Face to face patients			Remote monitored patients		
Virtual ward population	Base case	User-defined	Live	Base case	User-defined	Live
Proportion of step-up patients	30.0%		30.0%	30.0%		30.0%
Proportion of step-down patients	70.0%		70.0%	70.0%		70.0%

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Set-up sheet

1. This sheet allows the user to set-up the population that results will be calculated for in the model. The cells with red text should not be altered by the user.

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Set-up

Perspective	UK NHS (ICB)
Intervention	Virtual ward (VW) in the form of Hospital at Home or Digitally Enabled care
Comparator select	Standard Care
Time horizon	1 year
Population modifier (virtual wards)	1.00
Select virtual ward site	Example Scenario
Select virtual ward by pathway	ARI

2. The user should first select the virtual ward site and pathway from the drop-downs. This will automatically update the base case column. However, it should be noted the user will need to input the data first into the VW resource use breakdown sheet.

Click to update VW site and pathway names

Virtual ward population	Base case	User-defined	Live
Proportion of patients tech-enabled	90.0%		90.0%
Proportion of patients non-tech-enabled	10.0%		10.0%

3. Alternatively, the user can update the base case column by typing the value in the corresponding user-defined column.

	Face to face patients			Remote monitored patients		
Virtual ward population	Base case	User-defined	Live	Base case	User-defined	Live
Proportion of step-up patients	30.0%		30.0%	30.0%		30.0%
Proportion of step-down patients	70.0%		70.0%	70.0%		70.0%

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Resource use sheet

1. First click this button to populate the model with your resource use data (see this sheet).

3. The patient cohort size is calculated as the number of patients who can go through the VW in one year, based on LOS and number of beds inputs. The capacity input is an assumption and can be updated by the user.

Set-up

Resource use

Virtual wards

Click to see resource use inputs by ward and pathway

Select virtual ward	Placeholder 1
Select care pathway	PW 1.1
Average capacity target	80.0%

Annual patient cohort	Base case	User-defined	Live
Patient cohort	0		0

2. Once you have populated the inputs on the VW resource use breakdown, they will appear in the base case on this page based on the drop-downs selected on the set-up sheet.

	Face to face patients			Remote monitored patients		
Virtual ward resource use	Base case	User-defined	Live	Base case	User-defined	Live
Average length of stay on virtual wards (day/s)	0.0		0.0	0.0		0.0
Average bed days saved (step-down) per patient	0.0		0.0	0.0		0.0

	Face to face patients			Remote monitored patients		
Set-up time per patient	Base case	User-defined	Live	Base case	User-defined	Live
Time to identify and refer patient to virtual ward (minutes) (step down)	0.0		0.0	0.0		0.0
Time to identify and refer patient to virtual ward (minutes) (step up)	0.0		0.0	0.0		0.0

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VW Resource Use Breakdown Sheet

2. The number of people in the cohort will update once the length of stay (LOS) and number of beds has been inputted in the tables below. These red text cells should not be updated by the user.

1. This sheet should be populated with the user's data. First update the VW pathway names as outlined here.

Placeholder 1

	Care pathway				
Number of patients	**PW 1.1**	**PW 1.2**	**PW 1.3**	**PW 1.4**	**PW 1.5**
Number of patients per pathway (annual)	0	0	0	0	0

	Face to face patients					Remote monitored patients				
Virtual ward population	**PW 1.1**	**PW 1.2**	**PW 1.3**	**PW 1.4**	**PW 1.5**	**PW 1.1**	**PW 1.2**	**PW 1.3**	**PW 1.4**	**PW 1.5**
Proportion of patients tech-enabled										
Proportion of patients non-tech enabled										
Proportion of step-up patients										
Proportion of step-down patients										
Proportion of patients on each pathway										

	Face to face patients					Remote monitored patients				
Virtual ward resource use	**PW 1.1**	**PW 1.2**	**PW 1.3**	**PW 1.4**	**PW 1.5**	**PW 1.1**	**PW 1.2**	**PW 1.3**	**PW 1.4**	**PW 1.5**
Capacity (beds)										
Length of stay on virtual ward (days)										
Average bed days saved (step-down) per patient										

	Face to face patients					Remote monitored patients				
Set up time per patient	**PW 1.1**	**PW 1.2**	**PW 1.3**	**PW 1.4**	**PW 1.5**	**PW 1.1**	**PW 1.2**	**PW 1.3**	**PW 1.4**	**PW 1.5**
Time to identify and refer patient to virtual ward (minutes) (step down)										
Time to identify and refer patient to virtual ward (minutes) (step up)										
Time to onboard patients to hub (minutes) (step down)										
Time to onboard patients to hub (minutes) (step up)										

3. Type the data into the blue cells. Data for face to face patients should be inputted on the left and remote monitored on the right. Leave the greyed-out cells blank; these are not connected to any calculations.

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Cost Input Sheet

This sheet presents the costs for the VW and pathway selected on the set-up sheet. First the user should click the cost inputs by ward and pathway button to input their data on the VW cost breakdown sheet. The costs in red should not be altered by the user.

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Costs

Annual virtual ward technology costs (per virtual ward site and pathway)	Base case	User-defined	Live
Licence costs for monitoring technologies	£0.00		£0.00
Maintenance costs of monitoring technologies	£0.00		£0.00
Cerner Licenses	£0.00		£0.00
Other non-pay costs	£0.00		£0.00
Overheads	£0.00		£0.00
Costs of POC diagnostic tests - variable	£0.00		£0.00
Unit costs of POC diagnostic tests - variable	£0.00		£0.00
Costs of POC diagnostic tests - fixed	£0.00		£0.00
Annual fixed cost: other	£0.00		£0.00
Annual fixed cost: other	£0.00		£0.00

Click to see cost inputs by ward and pathway

Virtual ward one-off set-up costs (per virtual ward site and pathway)	Base case	User-defined	Live
Capital costs (Laptops and peripherals)	£0.00		£0.00
Project management set-up cost	£0.00		£0.00
Set up cost: other	£0.00		£0.00
Set up cost: other	£0.00		£0.00

Staff cost source	Site and pathway cost breakdown

1. The user can select to use the staff calculator or to input the staff costs per site and pathway.
2. As a guide the user should use the calculator if the activities are carried out by the same staff.
3. Based on the drop-down selected, the user should click the button to the staff calculator or the VW cost breakdown sheet button to input the cost data.
4. Once the user has filled in the data it will pre-populate on this sheet when the drop-down is selected.

Click to see staff cost

	Face to face patients			Remote monitored patients		
Staff costs virtual wards	Base case	User-defined	Live	Base case	User-defined	Live
Cost of staff for home visits (routine) per minute	£0.00		£0.00	£0.00		£0.00
Cost of staff for home visits (as a result of an alarm/alert) per minute				£0.00		£0.00
Cost of staff for other ward related activity per minute	£0.00		£0.00	£0.00		£0.00
Cost of staff for phone call appointments per minute	£0.00		£0.00	£0.00		£0.00
Cost of staff for remotely monitoring patients per minute				£0.00		£0.00
Cost of staff to identify and refer patients to VW per minute	£0.00		£0.00	£0.00		£0.00
Cost of staff to onboard patients to hub per minute	£0.00		£0.00	£0.00		£0.00

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VW Cost breakdown Sheet - part 1

Only one pathway can be modelled at a time. It is therefore important to only select one pathway and to ensure that the selected costs matches the pathway that is being modelled i.e. the pathway selected from the drop-down menu on the set-up page.

Select the pathway that is being modelled. This will prepopulate the costs sheet with the correct costs from these two tables (e.g. hospital admission, excess bed day, and appointment costs).

Hospital and appointment costs

Selection for pathway costs

Pathway	Select
ARI	☑
Frailty	☐
Heart Failure	☑
General	☐
Other	☐

Error! Please ensure only one pathway cost is selected

	Virtual ward costs by pathway			
Hospital admission and excess bed day costs	**ARI**	**Frailty**	**HF**	
Excess bed day cost per patient per day	£338.00	£333.06	£361.29	
Hospital admission cost	£1,741.79	£2,867.32	£2,768.36	£

	Virtual ward costs by pathway			
Appointment costs	**ARI**	**Frailty**	**HF**	
Home visits (standard care)	£117.81	£80.89	£109.19	
Outpatient appointments	£198.08	£398.29	£228.14	

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VW Cost breakdown Sheet - part 2

As highlighted previously the user should update the placeholder names with their Virtual ward site name and pathway in the table at the top of the VW resource use breakdown sheet.

The user should input their cost data into the following tables. If using the cost calculator for staff costs the bottom table can be left blank. Cells in grey should be left blank as these are not connected to the calculations.

Placeholder 1

	Virtual ward pathway				
Set-up and annual costs of virtual ward	**PW 1.1**	**PW 1.2**	**PW 1.3**	**PW 1.4**	**PW 1.5**
Annual Costs					
Licence costs for monitoring technologies					
Maintenance costs of monitoring technologies					
Cerner Licenses					
Other non-pay costs					
Overheads					
Costs of POC diagnostic tests - variable					
Costs of POC diagnostic tests - fixed					
Annual fixed cost: other					
Annual fixed cost: other					
Set up costs					
Capital costs (Laptops and peripherals)					
Project management set-up cost					
Set up cost: other					
Set up cost: other					

	Face to face patients					
Staff costs (per minute)	**PW 1.1**	**PW 1.2**	**PW 1.3**	**PW 1.4**	**PW 1.5**	
Cost of staff for home visits (routine) per minute						
Cost of staff for home visits (as a result of an alarm/alert) per minute						
Cost of staff for other ward related activity per minute						
Cost of staff time for a phone call per minute						
Cost of staff for remotely monitoring patients per minute						
Cost of staff to identify and refer patients to VW (minutes/s)						
Cost of staff to onboard patients to hub (minutes)						

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Staff Cost Calculator Sheet

This calculator allows the user to calculate the average cost per minute for VW activity. This calculator can be used if there is no variation in the staff who carry out VW activity.

If more than one staff member carries out a task the user can use the calculator to calculate the cost. For example, if two band four nurses carry out routine home visits per patient. The user should set the band four nurse proportion to 100%. This calculates a cost per minute for one nurse (i.e. £0.66) this should be multiple by the number of staff carrying out the task £0.66*2=£1.32. The user should then go to the VW cost breakdown and input the cost into blue cell for the routine home.

Staff	Included	Proportion
Nurse, Band 4	☑	50.0%
Nurse, Band 5	☑	60.0%
Nurse, Band 6	☐	
Nurse, Band 7	☐	
Nurse, Band 8a	☐	
Nurse, Band 8b	☐	
Nurse, Band 8c	☐	
Nurse, Band 8d	☐	
Nurse, Band 9	☐	
Registrar	☐	
Associate specialist	☐	
Consultant, medical	☐	
Total		110.0%

The proportion of staff must total 100%. A warning message will appear if the user inputs a proportion totalling under or over 100%.

Error! Please esure the proportion of staff time sums to 100%

Cost per minute for activity	**£0.81**

The cost data used to calculate the cost per minute is presented in the table (shown here).

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Staff Cost Calculator – Data

Staff costs

Working hours per year	Hours
Nurse	1,553
Registrar	2,135
Associate specialist	2,121
Consultant, medical	2,142

The staff cost calculator calculates an average cost per minute using the data in these three tables.

All data in the blue boxes is sourced from the PSSRU and can be updated as required by typing into the blue boxes.

Area of London	Inner London

Percentage increase of basic salary by area	Base case	User-defined	Live
Inner London	20.0%		20.0%
Outer London	15.0%		15.0%
Fringe	5.0%		5.0%

The user can select how much to increase the basic salary to reflect higher London salaries

Staff	Basic salary	Additional costs	London salary	Cost per year	Cost per hour	Cost per minute
Nurse, Band 4	£23,843	£37,667	£28,975.00	£66,642.00	£42.91	£0.72
Nurse, Band 5	£30,241	£44,884	£36,289.20	£81,173.20	£52.27	£0.87
Nurse, Band 6	£37,577	£53,157	£45,092.40	£98,249.40	£63.26	£1.05
Nurse, Band 7	£44,973	£61,500	£52,719.00	£114,219.00	£73.55	£1.23
Nurse, Band 8a	£50,789	£68,060	£58,535.00	£126,595.00	£81.52	£1.36
Nurse, Band 8b	£59,357	£77,725	£67,103.00	£144,828.00	£93.26	£1.55
Nurse, Band 8c	£70,176	£89,929	£77,922.00	£167,851.00	£108.08	£1.80
Nurse, Band 8d	£83,132	£98,478	£90,878.00	£189,356.00	£121.93	£2.03
Nurse, Band 9	£100,121	£123,705	£107,867.00	£231,572.00	£149.11	£2.49
Registrar	£49,009	£95,230	£56,755.00	£151,985.00	£97.87	£1.63
Associate specialist	£94,583	£151,678	£102,329.00	£254,007.00	£163.56	£2.73
Consultant, medical	£106,756	£188,713	£114,502.00	£303,215.00	£195.24	£3.25

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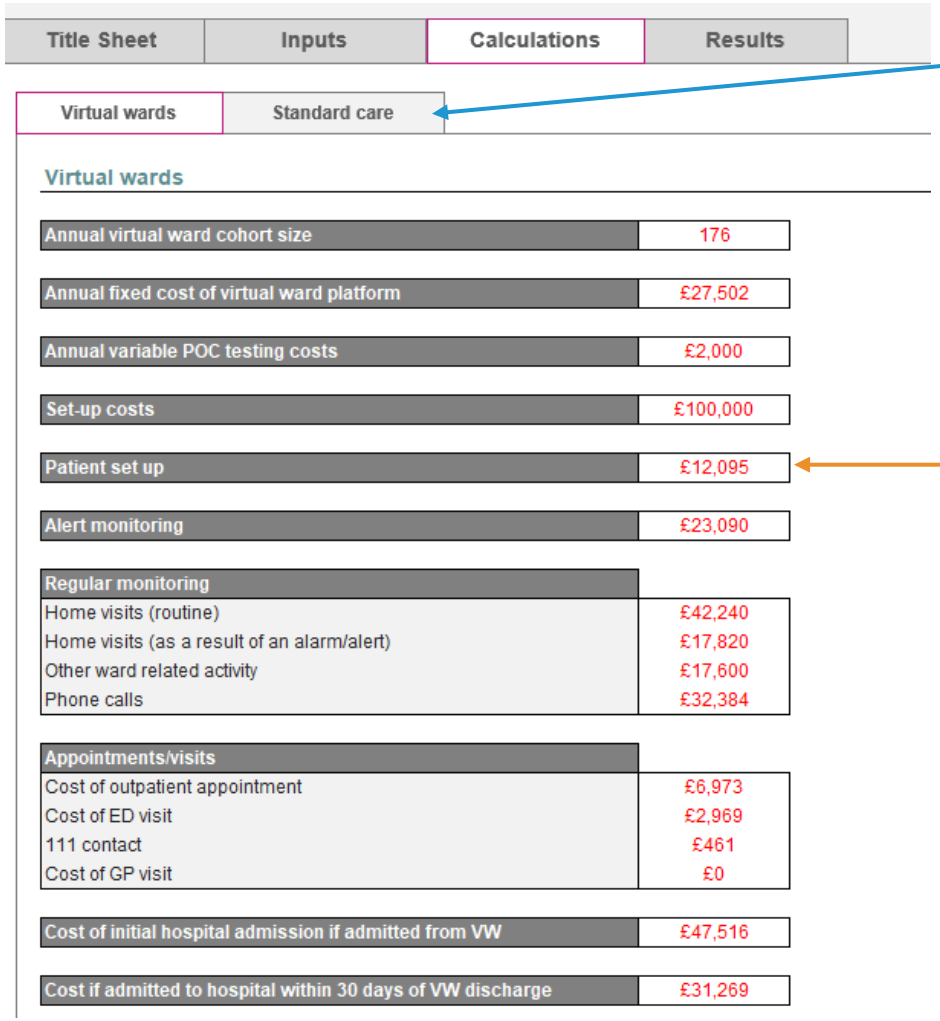
Calculations

Calculations



These sheets present the calculations. The calculations for VWs and standard care are presented on two separate sheets.

It is important that the user does not update these calculations.

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Model Results

Model Results Overview

- Summary Results
  - This section provides information on the results presented and a guide on how to interpret the results presented in each of the summary tables.

- Tornado set up
  - A brief explanation on how to set-up and update the tornado diagram.

- Tornado diagram
  - A guide on how to update and interpret the tornado diagram.

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Summary Results

These two tables present the main results of the analysis.

These costs represent costs to the VW and to the wider NHS. Therefore, these costs will not be reflective of VW budgets.

Summary results (including set up costs)	Virtual wards	Standard care	Incremental
Total annual costs per population	£351,426	£226,581	£124,845
Total annual costs per patient	£1,997	£1,287	£709
Cost per bed day	£133		

The first table shows the cost of a VW in the first year. This total cost includes annual running costs of VWs, VW set-up costs, patient set-up costs, monitoring costs, appointment costs, admission costs, and the cost saving associated with a reduced length of hospital stay.

Summary results (excluding set up costs)	Virtual wards	Standard care	Incremental
Total annual costs per population	£251,426	£226,581	£24,845
Total annual costs per patient	£1,429	£1,287	£141
Cost per bed day	£95		

The second table shows the costs of VWs in subsequent years excluding initial set-up costs.

A negative incremental value indicates the VW is cost-saving. A positive incremental value indicates the VW is cost-incurring. We can see in this example the VW is cost-incurring in the first year and subsequent years.

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Summary Results - Breakdown Tables

These two tables present a breakdown of the total costs that were presented on the previous slide.

Summary results breakdown	Virtual wards	Standard care	Incremental
Total one-off set-up costs	£100,000	£0	£100,000
Total on-going annual fixed costs	£27,502	£0	£27,502
Total annual variable costs	£223,924	£226,581	-£2,657

The first table shows the total model results broken down by set-up, fixed and variable costs for the VW pathway.

Summary results breakdown	Virtual wards	Standard care	Incremental
Total costs per population (tech-enabled)	£324,293	£203,923	£120,369
Total costs per patient (tech-enabled)	£1,843	£1,159	£684
Total costs per population (non tech-enabled)	£27,134	£22,658	£4,475
Total costs per patient (non tech-enabled)	£154	£129	£25

The second table shows the total model results for technology and non-technology enabled VWs. This includes the costs of remote monitoring, home visits, appointments, hospital admissions from VWs, and hospital readmissions

The VW patients who are technology or non-technology enabled are compared to the same number of standard care patients (or proportional if the population modifier is used), but it is important to note that none of the standard care patients themselves are tech-enabled.

A negative incremental value indicates the VW is cost-saving. A positive incremental value indicates the VW is cost-incurring.

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Summary Results - Breakdown Tables

Costs	Virtual wards	Standard care	Incremental
Direct Costs			
Virtual ward platform	£156	£0	£156
Set-up costs	£568	£0	£568
Home monitoring	£131	£227	-£96
Home visits	£441	£0	£441
Home set up	£69	£20	£49
Phone or virtual call	£184	£0	£184
Total direct costs	**£1,550**	**£247**	**£1,302**
Indirect Costs			
Cost of outpatient appointment	£40	£29	£10
Cost of ED visit	£17	£29	-£12
Cost of initial hospital admission	£270	£523	-£253
Cost of hospital readmission	£178	£222	-£44
Excess bed day costs	-£71	£0	-£71
111 contact	£3	£4	-£2
Cost of transport	£3	£12	-£9
Cost of GP visit	£0	£0	£0
Total indirect costs	**£439**	**£819**	**-£380**
Total costs	**£1,989**	**£1,067**	**£922**

This table displays a breakdown of VW-associated costs per patient. This could be used by local decision makers to identify areas where VW resource use and costs could potentially be reduced.

The indirect costs are wider costs to the NHS system as a result of changing resource use due to VWs.

A negative incremental value indicates the VW is cost-saving. A positive incremental value indicates the VW is cost-incurring.

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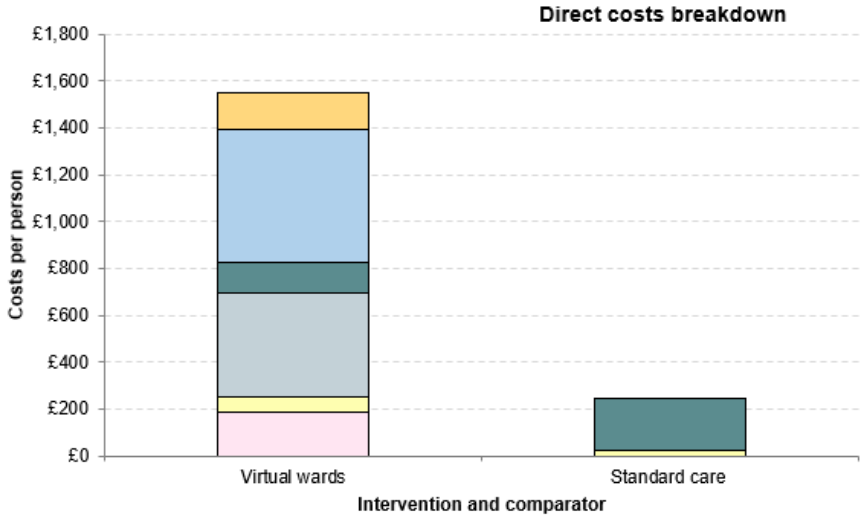
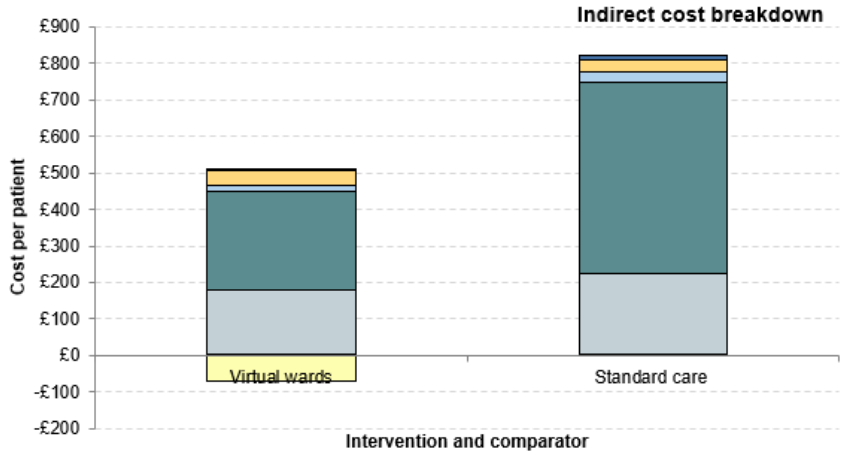
Summary Results – Graphs





The two graphs on the Summary sheet show a breakdown of the costs per person for direct and indirect costs presented in the table on the previous slide.

If a negative cost is showing on the indirect cost breakdown this represents a cost saving due to the excess bed days costs saved.

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Tornado Set Up

This sheet is the set-up sheet for the DSA.

Orange cells indicate where a range for the input could not be found. The input is varied by an assumed +/- 15%. This value can be updated by the user by typing into the orange cells. If an input value is less certain, we would recommend increasing the range the input varies.

Summary | Tornado set up | Tornado

Setup	Total inputs in table	100	Required inputs in chart	10
	Base case result	£137	Selected output	Δ Cost
	Name of results sheet	Summary		

Update Tornado Chart

Input type	Parameter label	Sheet	Cell reference	Format	Base case value	Can parameter exceed 1?	Variation type	Value		Final values	
								Upper	Lower	Low value	High value
Resource use - Virtual ward	Average length of stay on virtual wards (day/s) (F2F)	Resource use	'Resource use'!G27	#, 1dp	15.0	Yes	% of base case	85%	115%	12.8	17.3
	Average bed days saved (step-down) per patient (F2F)	Resource use	'Resource use'!G28	#, 1dp	0.3	Yes	% of base case	85%	115%	0.3	0.3
	Average length of stay on virtual wards (day/s) (RM)	Resource use	'Resource use'!J27	#, 1dp	17.0	Yes	% of base case	85%	115%	14.5	19.6
	Average bed days saved (step-down) per patient (RM)	Resource use	'Resource use'!J28	#, 1dp	0.3	Yes	% of base case	85%	115%	0.3	0.3

These are the parameters that will be included in the DSA. The user should not need to update these cells as all parameters of interest are included.

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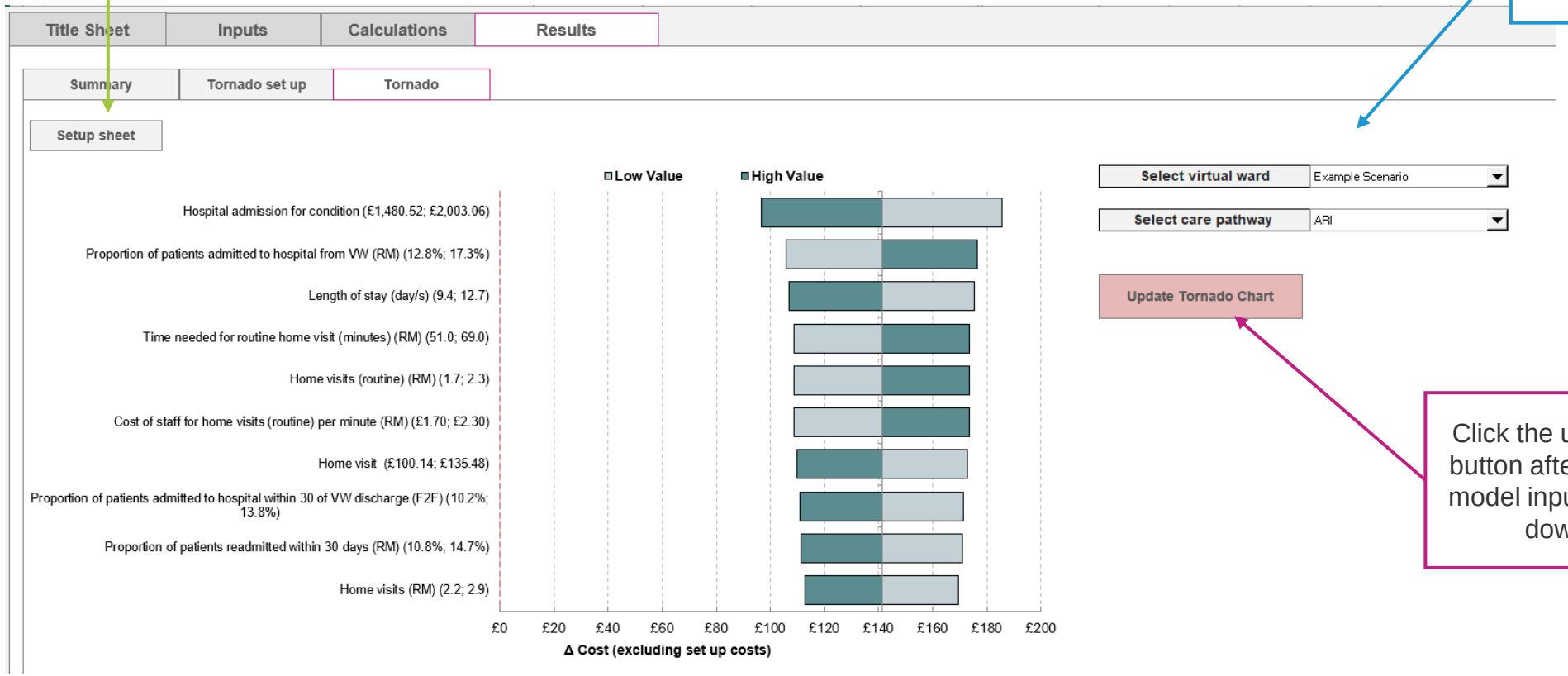
Tornado Diagram

Click the setup sheet button to return to the tornado set up sheet

Use the drop-down menu to select a VW and pathway



Click the update tornado button after changing the model inputs or the drop-down boxes

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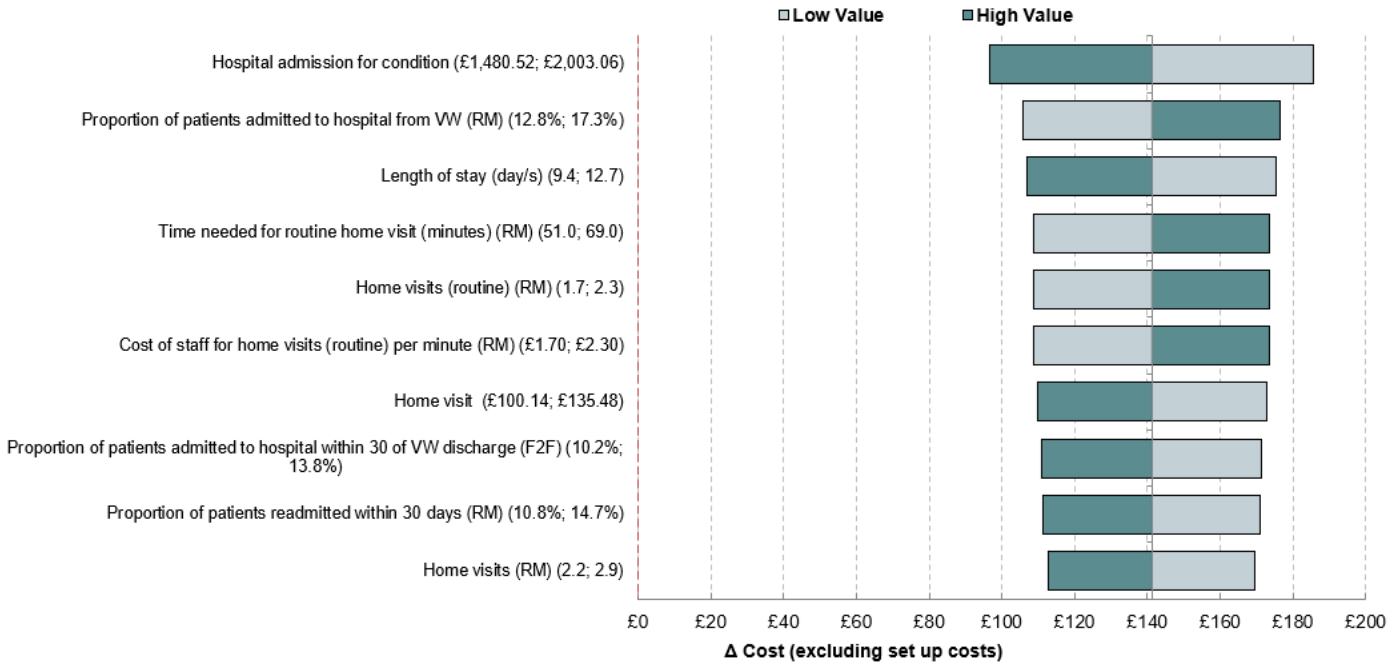
Tornado Diagram Interpretation

- The horizontal bars are ordered so that those with the greatest spread are at the top of the diagram, and those with the lowest spread at the bottom.

- The red vertical line represents the ‘breakeven’ point. Should any of the horizontal bars cross this breakeven line it indicates that variation in this input will change the direction of the results. This would indicate less certainty in the results.



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Results for Presentations

Results

Cohort size	176
Time horizon	1 year
Select virtual ward	Example Scenario
Select care pathway	ARI

Cohort Summary

Summary results (including set up costs)	Virtual wards	Standard care	Incremental
Total annual costs per population	£351,426	£185,578	£165,849
Total annual costs per patient	£1,997	£1,054	£942
Cost per bed day	£133		

Summary results (excluding set up costs)	Virtual wards	Standard care	Incremental
Total annual costs per population	£251,426	£185,578	£65,849
Total annual costs per patient	£1,429	£1,054	£374
Cost per bed day	£95		

Summary results breakdown	Virtual wards	Standard care	Incremental
Total one-off set-up costs	£100,000	£0	£100,000
Total on-going annual fixed costs	£27,502	£0	£27,502
Total annual variable costs	£223,924	£185,578	£38,347

An identical results page is included which has figures in black, rather than red

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Model User Tips

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Model User Tips

- Click enable macro's after opening the document.
- Learn the model key – be careful not to change any red cells!
- Remember to click the Tornado update button after changing the inputs or VW selection.
- Become familiar with the location of the parameters.
- Input the data on the VW resource use breakdown and VW cost breakdown sheet first before running your analysis through the model.

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