Legend

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| What did you like about ECG ONLINE? |
| What did you NOT like about ECG ONLINE? |
| Any suggestions how we can improve ECG ONLINE? |

Feedback

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| 2017-001 | It demands a systematic approach | Systematic approach |
| The bugs/glitches | Web app functionality |
| More modules (QT interval calculations) | More content |
| 2017-002 | I liked that it covered all the different parts of analysing an ECG…  and that it also showed incorrect answers | Detailed analysis  Feedback |
| it took a long time to complete 1 ECG | Too long |
| maybe more  but shorter sessions | More content  Shorter sections |
| 2017-003 | The fact that it's accessible from home  the take-home messages are great. | Accessible off campus  Take home messages |
| Very overwhelming to work out  and takes long | Too much detail  Too long |
| With ECG online, with the modules, make that the only thing we have to interpret. E.g. P waves- only have P wave questions to answer. Makes it less overwhelming. Then at end do full ECGs and can go back and fill out whole ecg | Improve / simplify design |
| 2017-004 | I liked the take home messages. they were explained in a way that encouraged thinking into the pathology behind the pattern and not just pattern recognition | Take home messages  Understanding pathology |
| the correct answers shown afterwards should not be using red as a highlight colour. | Inadequate feedback |
| there should be feedback after each section is filled in.  also, section 2 should be broken down into separate sections so that there are mores sections in total, rather than 3 long sections | More feedback  Shorter sections |
| 2017-005 | I liked the fact that it is in the same format of ECG interpretation we are taught.  The options are given in case of uncertainty, the correct answers are shown  and you are able to re-do the different modules. | Same format as lectures  Feedback  Revision |
| Nothing :) | Nothing |
| None, it’s amazing | Nothing |
| 2017-006 | You could do it in your own free times and pick up where you left off. | Asynchronous learning – whenever convenient |
| The layout was sometimes bothersome. | Web app design |
| Improve layout  and fix the log in/log out problems | Improve / simplify design  Improve app functionality |
| 2017-007 | I loved the take home messages  and the fact that you get immediate feedback on answers | Take home messages  Immediate feedback |
| the quality of some ECG  otherwise everything else was fine | Quality of ECGs |
| … | Nothing |
| 2017-008 | I liked the immediate feedback  and take home messages. | Feedback  Take home messages |
| I did not like the fact that, the feedback only showed the correct answers and there was no explanation on how to get the answers. | Inadequate feedback |
| There must be explanations on how the correct answers are reached. | Explain why answers are correct / incorrect |
| 2017-009 | Methodical  Examples of very common conditions  Great succinct take home messages | Systematic approach  Exposure to variety of ECGs  Take home messages  Succinct explanations |
|  | Nothing |
| More on ST and T wave abnormalities | More content |
| 2017-010 | User-friendly  Gives answers straight away,  and take home messages simple and clear. | Web app functionality  Immediate feedback  Take home messages  Succinct explanations |
| Lacked inclusion of some other abnormalities we would need to know e.g. some bradycardias, hyper/hypokalaemia, hypothermia, etc. | Not enough conditions included in modules |
| I don’t really have any ideas, I think the site is great as it is. Maybe just a home page that has basic info on ECGs-  I found every time I used it, I had to open up a google tab with the ECG axis, one reminding me of what exactly the PR, QT, RR intervals all were, etc. Which is fine, but could also be accessible as a "basic information" page on the site too? | Orientation and introduction  Include a reference |
| 2017-011 | The structured approach.  That it is possible to practice lots of ECG interpretations. | Systematic approach  Practice |
| Nothing really. | Nothing |
| More ECG examples of each specific pathology to look at. | More ECGs of the same diagnosis |
| 2017-012 | That the app shows what the correct answers are and you can see where you went wrong in the interpretations.  Additionally the repeated layout gives you an approach to the ECG.  The take home messages are really useful. | Test enhanced learning with feedback  Diagnostic approach  Take home messages |
| I wish there were more examples  and that I had this earlier in my MBChB studies. | More examples  Earlier in curriculum |
| Maybe have a module for the normal ECG  and test that you just provide an answer for to test how much knowledge you actually have. | Include normal ECG  Include an additional test |

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| 2017-013 | The take home messages  The fact that it forces you to systematically approach the ECG and not just do 'spot' diagnoses | Take home message  Systematic approach |
| the layout was a little bland  and sometimes was tedious to do measurements | Web app design  Too long |
| improve the design/graphics | Improve / simplify design |
| 2017-014 | It helped me develop a method of approaching ECGs more systematically.  It exposed me to a wide variety of abnormalities. | Systematic approach  Exposure to variety of ECGs |
| The glitches - such as not allowing me to progress to the next ECG in a module after having closed the tab (has been sorted out) | Web app functionality |
| Fix the glitches  and add more modules.  You could possibly include videos for explanations? | Improve app functionality  More content  More audio-visual |
| 2017-015 | Able to first analyse ECG and then see correct answers | Practice  Feedback |
| I was sometimes unable to see the ruler, the ruler at the bottom of the screen was not always effective | Web app design |
| Layout: I had to first enlarge ECG to calculate and then add answers | Improve app functionality |
| 2017-016 | The approach to diagnosis. | Diagnostic approach |
| The layout was messy.  Correct answers should be highlighted in green and incorrect answers in red. | Web app design  Feedback: correct should be green, incorrect should be red |
| Consider breaking step 2 into smaller steps, rather than overwhelming the user with a plethora of options. | Improve / simplify design |

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| 2017-017 | Being able to access the tool off-campus.  Being given immediate feedback after analysis | Asynchronous learning – accessible off campus  Immediate feedback |
| The length of time it takes to analyse a single ECG (and the difficulty of measuring QTc values on a computer screen) | Too long |
| Check that take-home messages sync up with the specific ECGs, sometimes the take home message was completely different | Improve app functionality |
| 2017-018 | The home message  feedback was very helpful | Take home messages  Test enhanced learning with feedback |
| So far so good |  |
| MCQs or quizzes can be added to test  Knowledge around ECGs other than interpretation itself... | Improve app functionality  More teaching |
| 2017-019 | Easy to use  useful take home message which included extra notes. | Web app functionality  Take home messages |
| I am impressed with it so far |  |
| Home messages should be made available for free or for purchase | Take home messages for purchase |
| 2017-020 | User friendly  with great feedback after doing self-interpretation  take home messages | Web app functionality  Feedback / Practice  Take home messages |
| [on PC]: Some of the modules were long, and sometimes I was not able to continue my progress when I returned to a module  [on Tablet]: The ECG in landscape orientation takes up most of the screen, making it difficult to scroll down (as a touch/swipe on the ECG picture enlarges it and moves it around) | Too long  Web app functionality  Web app design |
| State online beforehand how many tasks are in a certain module e.g. P-wave analysis (6 tasks) With regards to the problem I had on the tablet, try creating an option which can enable/disable ECG enlargement on touching/swiping (equivalent to clicking/dragging on PC) | Improve app functionality |
| 2017-021 | Systematic approach | Systematic approach |
| Too many options to choose from. Overwhelming | Too much detail |
| Create a MOCK test once all the module have been completed  Upload a video by UCT stuff of interpreting the ECG. | More tests  More audio-visual |
| 2017-022 | Simple, easy to follow,  systematic way to approach ECGs. | Web app functionality  Systematic approach |
| Too many options. didn't have an understanding of all of the options available which lead me to never tick them, but i assume that they are still relevant findings on an ECG (U waves) | Too much detail |
| Streamline the amount of options available to click. | Improve / simplify design |
| 2017-023 | Very informative, succinct | Succinct explanations |
| Too many boxes | Too much detail |
| I would have liked to know what each of the boxes mean. I had to instead use life in the fast lane and other online resources to actually be able to know what the tick box meant | Include a reference tool |
| 2017-024 | It covered all the necessary topics  I could learn on my own at my own pace. | Exposure to variety of ECGs  At own pace |
| There were some glitches when it wouldn't work  and I didn't know what some of the options were (EG What is a Brugada pattern??) | Web app functionality  Too much detail |
| The ruler/meter thing at the bottom of the screen seems to have very arbitrary graduations and markings and confuses me more than it helps me | Improve app functionality |
| 2017-025 |  |  |
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| 2017-026 | Very helpful.  Well-structured and easy to follow.  The immediate feedback was great.  Take home messages were also great. | General positivity  User friendly / easy to use  Immediate feedback  Take home messages |
| You cannot zoom in on ECG images and maintain that zoomed in view without letting go of the mouse. It would be nice to zoom in and then be able to leave it like that while answering some of the questions. | Web app functionality |
| It would be nice to be able to see how many ECGs were in each module before beginning the module. | Improve app functionality |
| 2017-027 | Immediate feedback on ECG  The take home messages | Immediate feedback  Take home messages |
| Layout of the ECG on the screen | Web app design |
| It would be great if the take home message could be in a PDF format | Irrelevant – take home messages are in PDF |
| 2017-028 | It is user friendly  It has taught me a lot of things about different ECGs | User friendly / easy to use  Exposure to variety of ECGs |
| Sometimes the visuals posed difficulty when having to calculate/measure intervals.  Sometimes the feedback was not correct I think. | Web app functionality  No explanation why answer is correct / incorrect |
| Improve visuals and feedback | Improve / simplify design |
| 2017-029 | Everything | General positivity |
| Nothing |  |
| None |  |
| 2017-030 | - |  |
| - |  |
| More information of what each part of the ECG is  what is normal (when first learning ECGs and using the online tool). | Include a reference tool  Include a normal ECG |

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| 2017-031 | - |  |
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| 2017-032 | - |  |
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| 2017-033 | I like the approach that ECG online teaches | Systematic approach |
| I didn't like not understanding all the options under each section (I'm guessing that is taught in later years).  I also didn't like that I did not know how many modules were in each session - it made it difficult to know how much time to set aside for it. It would have been good if each question said "1 out of 10", "2 out of 10" or something similar to know how far we are as we're going. | Too much detail  Web app functionality |
| Perhaps a question section at the end of each module to allow students to immediately clear up any issues from that particular ECG. Those questions could be used to clear up any mistakes or to add to the Take Home Messages as FAQs. | Forum where questions could be asked |
| 2017-034 | The take home messages | Take home messages |
| n/a |  |
| n/a |  |
| 2017-035 | Being provided with an approach to ECG  as well as take home messages which explained everything without being long | Diagnostic approach  Take home messages  Succinct explanations |
| So many options to select so it is easy to overlook something | Too much detail |
| Nothing |  |
| 2017-036 | It was beginner friendly in that it provided a step-by-step method of analysing an ECG  and also gave feedback at the end.  I also liked the take home messages. | Systematic approach  Test enhanced learning with feedback  Take home messages |
| It is not available for handheld devices. | Web app not compatible with handheld devices |
| - |  |
| 2017-037 | The fact that it takes you through an ECG in a step wise process - it teaches you a method. | Systematic approach |
| The fact that an answer was not explained because the take home problem only gave information about the overall diagnosis and its ECG features. Therefore if a there was a particular finding but was not part of the key diagnosis features it was not explained. | Inadequate feedback |
| if one has the time to please include reasons for some of the findings for example why the QT interval is irrelevant in that particular diagnosis even though it is not a key feature. | Explain why answer is correct / incorrect |
| 2017-038 | The take home messages were easy to understand | Take home messages |
| Not much |  |
| None |  |
| 2017-039 | I liked how each ECG had exactly the same format for analysis. Even if I hadn't done the module on a specific segment yet, I could give it a try and learn to recognise patterns by the time I reached that module.  I also liked the take home messages. They were immensely useful. | Systematic approach  Take home messages |
| I had no complaints. The only glitch I found was that take home messages did not all display on a tablet. | Web app functionality |
| Add the function of being able to mark each section before you continue to the next one, so you can correct your mistakes before they affect your diagnosis of the ECG. | Feedback after each section |
| 2017-040 | Great website.  Very useful examples | General positivity  Agreed with choice of ECGs |
| Limit the selection criteria: too many options become confusing | Too much detail |
| - |  |
| 2017-041 | That it is systematic and it forces you to go through the steps. This allows you to not miss out on important information | Systematic approach |
| I did not like that the feedback had no explanations | No explanation why an answer is correct or incorrect |
| Explanations about feedback- e.g. when you get the axis wrong- there should be an information button in order to point you to the most equiphasic lead and how to come up with the correct answer. | Explain why answer is correct / incorrect |
| 2017-042 | The wide variety of ECGs.  The take home messages.  All the options available (great reminder to not forget to analyse any segment/interval/complex) | Exposure to variety of ECGs  Take home messages  Systematic approach |
| I think the layout can be improved a bit more | Web app design |
| Improve layout - have fewer options on the screen at one time e.g. have one set of options on the screen at a time, i.e. P wave, as you select options for the P wave it gets added to a box on the screen that is there at all time and then you can move onto the next part of the analysis. | Improve / simplify design |
| 2017-043 | I enjoyed the layout of the ECG online website  and the fact that the work was self-directed as opposed to long lectures. | Web app design  Self-directed learning |
| Nothing |  |
| Just improving the image quality of some of the online ECGs | Better quality ECGs |
| 2017-044 | - |  |
|  | - |  |
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| 2017-045 | Extremely user friendly.  The best part was having such immediate feedback  and thorough take home messages - I learnt from my mistakes straight away without wondering where I went wrong or forgetting to follow up with a lecturer.  The take home message diagrams and pictures were so useful in understanding and not just rote learning information. | User friendly / easy to use  Immediate feedback  Take home messages  Visual content  Understanding pathology |
| Nothing - I can't being to tell you how much it has helped me. I wish I had received this in third year instead of being given a confusing introduction which made me really nervous to tackle ECGs. | Should be introduced earlier in curriculum |
| Nothing - it's amazing! |  |

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| 2017-046 | It is user friendly.  I can skip between modules and access my old examples.  I like the structure (look at the p wave - tick the abnormalities/ normalities boxes) - it reminds me to let my eye search for those abnormalities immediately. | User friendly / easy to use  Able to review previously done modules  Systematic approach |
| Where you have to say if ST is elevated, or T wave inversion etc, the boxes you need to tick next to the leads don't look like they belong to the lead it is assigned to. Eg the box for lead 1 actually looks like it belongs to aVR. | Web app design |
| More examples please. And then also perhaps and explanation of the different diseases in which abnormal ECGs occur. Eg p pulmonale - RA enlargement - pulmonary emboli, | More content |
| R2017-047 | Accessible off campus  and immediate feedback | Asynchronous learning – accessible off campus  Immediate feedback |
| could not access all the ECGs, many glitches | Web app functionality |
| if made available to medical students, ensure everyone has access as not to disadvantage students | Ensure that all students have access |
| 2017-048 | It is something that you can access at anytime and one can do it at your own pace.  The take home messages were simple and is something that you can always refer back to.  The method of answering the ECG online allowed me to develop an approach so that I do not jump to conclusions and miss any abnormalities. | Asynchronous learning – whenever convenient  Take home messages  Succinct explanations  Systematic approach |
| The zooming in function on the Images often makes it hard to be able to count the number of blocks accurately when determining width.  There was not place on the website that you could go back and look if you did not know what the morphology looked like. | Web app functionality  No reference tool |
| It was possibly a bug in the system but when you completed an ECG and you log out, you often had to redo the same one again before doing the next one. | Improve app functionality |

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| 2017-049 | It gives a systematic approach to ECG. | Systematic approach |
| Nothing really |  |
| Give more examples for interpretation of ECGs - more ECG abnormalities | More content |
| 2017-050 | Thank you for taking the effort to create ECG Online. It has been incredibly useful. | General positivity |
| - |  |
| - |  |
| 2017-051 | I liked the feedback lessons | Feedback |
| the layout was a bit confusing | Web app design |
| more ECGs should please be made available under each topic | More content |
| 2017-052 | The prompts and hints when you left something out.  The ability to zoom easily on ECGs.  The take home messages.  Being able to review ECGs you have previously analysed | Systematic approach  Web app functionality  Take home messages  Revision |
| I needed more hints for some of the basic things. For example I struggle with calculating QRS width. When I hovered over the information icon for that topic it would have been helpful if it gave simple instructions (eg: count the number of small blocks from x to y each small block = 40ms) | No reference tool |
| See above and do similar things for all the other headings. This will be very beneficial if the website is implemented for students in younger years | Include a reference tool |
| 2017-053 | I like the whole program | General positivity |
| No dislikes |  |
| Add more ECGs and more pathologies | More content |
| 2017-054 | The step by step analysis used for every interpretation | Systematic approach |
| The take home messages wouldn't always load | Web app functionality |
| Have a test yourself option with randomised ECGs from different modules.  Use green instead of red for showing corrections. | Include an additional test  Correct answers should be shown in green |

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| 2017-055 | Great examples  and getting into the mindset of interpreting the ECGs in a logical manner | Exposure to variety of ECGs  Systematic approach |
| Not ergonomic or user friendly. | Web app design |
| Update website design (would be much better as an app - which I know is coming!) |  |
| 2017-056 | The formal approach | Systematic approach |
| Sometimes too tedious | Too much detail |
| Can't think of any |  |
| 2017-057 | great to go through examples where you can take your time  and interpret the entire thing with correct answers provided at the end. | At own pace  Test enhanced learning with feedback |
| the page was too messy and the ECG itself was too small. I had to open it up separately to analyse it. | Web app design |
| break up the different sections, e.g. P wave, QRS, ST segment etc, into tabs that you work on? | Break analysis up in sections |
| 2017-058 | It was systematic and thorough | Systematic approach |
| It would take a long time to complete | Too long |
| Perhaps break it up into sections | Break analysis up in sections |
| 2017-059 | Teaching us a systematic approach  and the summaries were succinct and relevant. | Systematic approach  Take home messages  Succinct explanations |
| Layout can be improved... but apparently this is being worked on already. | Web app design |
| I would like more ECGs to practise on ECGonline where the ECGs are randomized, i.e. have all the modules joined so that I am not predisposed into thinking that this is a certain type of ECG.  Maybe an advanced module with interesting ECGs? | More content  There should be modules with random ECGs (not grouped by pathology) |
| 2017-060 | The layout of the quiz | Web app design |
| The fact that you get the answer sheet after interpretation | Teaching only after the student’s attempt to analyse the ECG |
| Make the answer sheets available beforehand |  |
| 2017-061 | Gave a good approach to interpreting ECGs.  Succinct and easy to follow and understand. Kept things simple. | Diagnostic approach  Succinct explanations |
| I did not like that the online course had selection options which I had not been taught on and so found it tricky to answer during the online course. | Too much detail  Web app included things that were not taught in class |
| Provide information about each part of the ECG being analysed so that I can check if my thinking is correct. | Include a reference tool |
| 2017-062 | I liked the repetitive nature of the programme. That way you really get the routine of reading ECGs systematically drilled in. | Repetition  Systematic approach |
| Not much to be honest. I really enjoyed using the programme. |  |
| I don't really have any suggestions |  |
| 2017-063 | It gave me a good outline of all the aspects of an ECG that I should be looking at every single time. | Diagnostic approach  Detailed approach |
| Some of the answers were a bit inconsistent. | No explanation why answer is correct / incorrect |
| Give the tutorials before we have to use ECG online. I struggled before the tutorials but found it much easier afterwards. | Tutorial before the modules |
| 2017-064 | Working through all the steps of interpretation with each ECG, having the steps listed there for each ECG.  Having a take home message for each ECG is very helpful and they are very well made, concise and easy to understand. | Systematic approach  Take home message  Succinct explanations |
| Nothing |  |
| - Include the normal values for PR interval, QRS width etc. with each section AND how to calculate each.  - Have ECG examples to learn for each section (as it is now) and then a big quiz at the end with mixed ECGs  - More MCQ questions at the end  - Maybe have teaching about a concept (eg. LBBB) above the ECG, then the interpretation as it is now, so that you can learn and then think about about you are seeing in the ECG. And then a big quiz at the end to practise the ECGs (there aren't many good ECG quiz banks online, as far as I have found).   - More clinical information such as treatment/presentation/who is likely to get the condition, just to contextualise the ECG | Include a reference tool  Include an extra test with random ECGs  More MCQ questions  More clinical information |