Author's response to reviews

Title: Improving antimicrobial prescribing in Irish primary care through electronic data collection and surveillance: a feasibility study.

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Author's response to reviews: see over
Dear Dr Eloisa Nolasco,

Many thanks for your email. Please find the revised manuscript attached with responses to the reviewers comments and revisions as requested outlined below.

Sincere thanks,
Sandra Galvin

Reviewer 1:

Major compulsory revisions:

Point 1: The methods section needs more detail to allow full evaluation, i.e. what statistical methods were used to compare distribution of antimicrobial persistence?
Response: Line 126 – 128 added: Antimicrobial prescriptions were examined initially as counts and proportions of each ATC per practice. Given the nature of the data extraction, no missing observations were observed.

Minor Essential Revisions:

Point 2: Table 1 data could be better structured, i.e. why not group related values together, i.e. mean and sd, median and IQR? 3. The authors may also wish to look at some recent publications in antibiotics and papr
Response: Table 1 has been restructured as suggestions by the referee.

Discretionary revisions:

Point 3: The authors may wish to comment about the impact of drop-out on study outcome?
Response: Drop-out was not an issue for the current study as all data was electronically extracted from source. Informed consent was not required as only anonymous data was collected. For such automated data extraction the risk of study drop put is low.

Reviewer 2:

Discretionary revisions only – While the referee highlights some important areas, we feel these have already been addressed in the manuscript.
Reviewer 3:

Minor Essential Revisions

Point 4: Background states: .....and evaluate the quality of prescribing by applying the European Surveillance of Antimicrobial Consumption (ESAC) drug specific quality indicators to identify potential areas for improvement in antimicrobial prescribing in primary care. Whilst these are reported in the tables and some Description in the discussion; I am not sure the discussion reflects an evaluation of the quality of prescribing.

Response: The current paper used established quality indicators to evaluate prescribing. The paper identifies the shortcomings of this approach in the discussion whereby further patient based information is required to make a more comprehensive evaluation of, and appropriately contextualise, antimicrobial prescribing quality.

Point 5: Important to include explanation: Excessive use of quinolone is perhaps more important for C. diff rather than resistance alone; especially as majority of prescriptions to age group 60-79. Are there any differences in C. diff cases during the summer months compared to winter?

Response: Line 187 – 191 has been amended as follows; “However, greater prescribing of broad-spectrum compared to narrow-spectrum antimicrobials and seasonal variation of quinolone antimicrobials reported in study practices may be of particular concern, as both are identified as significant risk factors for Clostridium difficile-associated diarrhea (CDAD) and the development of antimicrobial resistance”. While the reviewer makes an excellent question to explore C. diff rates, we currently do not have access to that data.

Point 6: There should be a discussion/comparison with how other countries already collate prescribing data e.g. in England, Scotland, Wales it is centrally collated for all NHS prescriptions – free and paid. But not private prescriptions. How does this method compare?

Response: This study is the first to report on automated extraction of primary care prescribing data from source, including both public and private “fee paying” prescriptions in Ireland. The line 173 – 175 has been added; “The methods described are similar to those routinely used in the UK through the Clinical Practice Research Datalink (CPRD) for which data is collected in the course of routine healthcare by general practitioners using coded classifications {Currie, 2014}.”
Response to Reviewers MS: 1818953583152143

**Point 7:** In the introduction, it will be useful to explain briefly the Irish system for surveillance of prescribing data in general Noted figure 1 – total DDD decreases in summer months but quinolone use increases....this should be included in discussion

**Response:** Line 67 – 69 added “Surveillance of antimicrobial prescribing in Ireland is currently carried out annually by the Health Protection Surveillance Centre (www.hpsc.ie), which is part of the national healthcare provider, the Health Service Executive”. The discussion around fluctuations in quinolone use is already discussed in lines 197 – 206.