The effects of community pharmacy public health interventions on population health and health inequalities: a systematic review of reviews protocol

Frances Hillier-Brown 1, Clare Bambra 1, Katie Thomson 1, Mirza Balaj 2, Nick Walton 1 and Adam Todd 1,3*

Abstract

Background: Community pharmacies have great potential to deliver services aimed at promoting health and preventing disease, and are embedded within communities. In the light of a rapid increase in community pharmacy-delivered public health services and an accompanying increase in the evidence base, this systematic review of reviews will synthesise systematic reviews of public health community pharmacy interventions and assess their effects on public health and health inequalities.

Methods/design: Systematic review methodology will be used to identify all systematic reviews that describe the health and health equity effects of community pharmacy public health interventions. Twenty databases will be searched using a pre-determined search strategy to evaluate community pharmacy-delivered public health interventions. Findings from the included reviews will be pooled, and a narrative synthesis executed to identify overarching patterns and results.

Discussion: Findings will support future decision-making around how community pharmacy public health services can be used alongside other strategies to promote health, prevent disease and reduce health inequalities.

Systematic review registration: PROSPERO registration number: CRD42017056264.

Keywords: Community pharmacy, Prevention, Health promotion, Public health, Health and health inequalities, Systematic review

Background

In recent years, community pharmacies have emerged as strategically important settings that have great potential to deliver services aimed at promoting health and preventing disease. Indeed, community pharmacies have, globally, been identified as an easily accessible and cost-effective platform for delivering healthcare services [1]. For example, in the UK, 89% of the population can reach a community pharmacy within 20 min and, crucially, in areas of high deprivation, that value increases to approximately 100% of the population—an observation known as the positive pharmacy care law [2]. In view of the wide accessibility to healthcare (a well-established social determinant of health), community pharmacies are ideally placed to offer public health services to all communities, including the most socio-economically deprived ones.

Considering this potential, the role of the community pharmacist has undergone rapid expansion [3]. Indeed, in addition to supplying medication, many community pharmacies now offer an abundance of patient-focused public health services. Smoking cessation services were one of the earliest examples of such a service [4], but others, such as improving general lifestyle behaviours, increasing uptake of screening and giving sexual health advice, have since followed. Accompanying this development, the evidence base surrounding the extended role of the community

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pharmacist in public health has also expanded—with many groups producing systematic reviews examining the effectiveness of such interventions.

Despite this progress, however, and in view of the expanding literature base, the effects of community pharmacy interventions on population health—and perhaps more significantly, health inequalities—is still not clear. While there are many reviews, which focus on particular public health areas (e.g. [5] and [6]), these have not been brought together to assess the overall effects of the variety of community pharmacy interventions underway in the public health arena or how they impact on inequalities in health. It is, therefore, timely that we undertake a systematic review of reviews of community pharmacy services in order to support policy-makers and commissioners in their future decision-making around how community pharmacy public health services can be used alongside other strategies to promote health, prevent disease and reduce health inequalities.

Methods
A systematic review of reviews will be conducted. This methodology is an established and effective way of bringing together and summarising a broad evidence base [7] and have been used for a number of public health topics [8–11]. Our review was designed using the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) Guidelines [7]. A PRISMA-P checklist is available as an Additional file 1 to this protocol. This protocol is registered with PROSPERO (CRD42017056264).

Research question
What are the effects of community pharmacy-delivered public health interventions on health and health inequalities?

Study design
Systematic review methodology will be used to locate, appraise and synthesise published systematic review level evidence on the effects of community pharmacy-delivered interventions on health and inequalities in health [8–11].

Inclusion criteria
Following standard evidence synthesis approaches [12], the inclusion criteria for the review are determined a priori in terms of PICOS (population, intervention, comparison, outcome and setting [13]).

- **Population:** Children and adults (all ages) in any country. The population is kept purposively broad to allow the widest range of literature to be identified.
- **Intervention:** Public health interventions delivered in community pharmacy settings. The inclusion criteria are purposely broad to allow for a range of different public health interventions to be located.

For the purposes of the review, a community pharmacy was defined as a pharmacy set in the community, which is accessible to all and not based in a hospital, clinic or online [5].

- **Comparison:** We will include systematic reviews that include studies with and without controls, including randomised and nonrandomised controlled trials, randomised and nonrandomised cluster trials, prospective and retrospective cohort studies (with and/or without control groups), prospective repeat cross-sectional studies (with and/or without control groups) and interrupted time series (with and/or without control groups). Acceptable controls include randomised or matched designs. Reviews assessing qualitative studies will be excluded.

- **Outcomes:** Health and health inequality outcomes. Reviews that do not assess effectiveness of community pharmacy-delivered public health interventions will be excluded. Primary outcome measures will be conceptualised using the framework proposed by Hardeman and colleagues [14] and include determinants of behaviour (e.g. self-efficacy, perceived control), behavioural outcomes (e.g. smoking cessation, improved physical activity), physiology and biochemical outcomes (e.g. blood pressure, plasma cholesterol) and health outcomes (e.g. incidence rates of cardiovascular disease). Secondary outcomes relate to health inequalities in terms of PROGRESS-Plus factors: place of residence, race/ethnicity, occupation, gender, religion, education, socio-economic status (defined as individual income, wealth, education, employment or occupational status, benefit receipt; as well as area-level socio-economic indicators), social capital, age, disability and sexual orientation [15]. When available, cost-effectiveness data will also be collected.

- **Setting:** Only systematic reviews will be included in the analysis. Included publications will need to meet the two mandatory criteria of Database of Abstracts of Reviews of Effects (DARE): (i) that there is a defined review question (with definition of at least two of, the participants, interventions, outcomes or study designs) and (ii) that the search strategy included at least one named database, in conjunction with either reference checking, hand-searching, citation searching or contact with authors in the field. When two reviews are identified with the same research aims (e.g. to assess the effectiveness of community pharmacy smoking cessation services), only the most recent review will be synthesised as part of this study.

Search strategy
Twenty databases will be searched from inception until January 2017 (host sites given in parentheses): Medline
data will be extracted: the intervention type reviewed; the project lead (AT) if necessary. The follow-
reviews and Dissemination, University of York), Campbell Collaboration Library of Systematic Reviews (The Campbell Library),
data will be resolved through discussion between the two re-
will be double screened by a second reviewer (NW) and
The initial screening of titles and abstracts will be con-
language/country/population restrictions in the review; the number of relevant studies in review (total); number of
discussed. Findings in terms of population level health effects
prospective cohort, repeat cross sections); any time/lan-
gender, economic inequalities in health.
The methodology quality of each review will be deter-
ing the Assessment of Multiple Systematic Reviews (AMSTAR) [19], which will be included as part of
visits to pharmacies. We estimate that change in the number of visits to pharmacies will increase by 0.19
pharmacy public health interventions affect population

Screening, data extraction and quality appraisal
The initial screening of titles and abstracts will be con-
duplicate by one reviewer (FHB) using EndNote
inter-rater reliability will be assessed using the kappa sta-
as described previously [23]. Review
will be described, as well as health inequality implications
will be conducted, and exploring patterns in narrative syn-
these. Findings in terms of population level health effects
will be described, as well as health inequality implications
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Synthesis
A narrative synthesis will be conducted following the Eco-
social inequalities in health.

Discussion
This umbrella review will provide evidence how commu-

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health and health inequalities. In addition, we will also establish and highlight any gaps in the systematic review evidence base around community pharmacy public health interventions. We anticipate the findings of this review will be used to by policy-makers and commissioners to inform future public health services; the review will also be used by academics to direct future research toward any evidence gaps that we may highlight.

**Additional files**

- **Additional file 1:** PRISMA-P 2015 Checklist. (DOCX 82 kb)
- **Additional file 2:** (MEDLINE, Ovid) Search strategy. (DOCX 21 kb)

**Abbreviations**

AMSTAR: Assessment of multiple systematic reviews; DARE: Database of abstracts of reviews of effects; PICOS: Criteria for inclusion and exclusion of studies; PRISMA-P: Preferred reporting items of systematic reviews and meta-analyses protocol; PROGRESS-Plus: Acronym to identify population and individual characteristics across which health inequities may exist; PROSPERO: International prospective register of systematic reviews; R-AMSTAR: Revised version of AMSTAR; RCT: Randomised controlled trial

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**Availability of data and materials**

Not applicable as no data sets have been compiled as of yet.

**Authors’ contributions**

FHB led the drafting and revising of the manuscript with input from AT, CB, KT, MB and NW contributed to the writing and revision of the manuscript. All authors read and approved the final manuscript.

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**Ethics approval and consent to participate**

Not applicable.

**Consent for publication**

Not applicable.

**Competing interests**

The authors declare they have no competing interests.

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