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Sub title	A systematic review to evaluate the effect of aid on Millennium Development Goal 5 outcomes
Review group	The University of Edinburgh (Q47)
Section	PROCOTOL
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Advisory group **(with institutions)**	
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1. Background

1.1 Aims and rationale for review

This review addresses the following question:

> *What is the evidence of the impact on MDG 5 outcomes of delivering aid in line with Paris and Accra aid effectiveness principles? How does this compare to the evidence of the impact of aid in general on MDG 5 outcomes?*

In 2000, United Nations member states signed up to the Millennium Development Goals (MDGs), a set of eight international development targets intended to catalyse development and reduce global poverty. To date progress towards these goals has been uneven. Of particular concern is MDG 5, which aims to improve maternal and reproductive health outcomes by: a) reducing the maternal mortality ratio by 75%, and b) by 2015 achieving, universal access to reproductive healthcare. Current estimates suggest that only 23 (out of a surveyed 181) countries are on track to reduce maternal mortality by 75% (Hogan *et al.* 2010). This poor progress exists despite increasing volumes of official development assistance being directed at MDG 5 (Greco *et al.* 2008). There is concern, therefore, that not all the aid targeting MDG 5 is reaching the countries in the greatest need or being delivered in a manner that will prove effective (Greco *et al.* 2008; Powell-Jackson *et al.* 2006). For example, while aid for MDG 5 has increased overall, the funding available for family planning has actually decreased and it has been suggested that current aid levels remain insufficient to meet MDG 5 (WHO and UNICEF 2010).

The adoption of the MDGs came at the end of a decade in which the purpose and usefulness of development aid had come under major scrutiny. The changing geopolitical climate of the 1990s, coupled with the poor results of decades of work and billions of dollars aimed at improving social and economic conditions in poor countries, led to a questioning of the usefulness of aid. Rather than signalling the end of aid, as some predicated, this led rather to a series of major global agreements on rendering aid more effective. In the 2000s, a series of high-level forums was held to debate the provision of aid and its management. These forums resulted in the:

- The Monterrey Consensus of the International Conference on Financing for Development (UN 2002)
- Joint Marrakech Memorandum (Second International Round Table Marrakech 2004)
- The Rome Declaration on Harmonisation (Rome High-Level Forum 2003)
- The Paris Declaration on Aid Effectiveness (Paris High-Level Forum 2005)
- The Accra Agenda for Action (Accra High-Level Forum 2008)

Key within this is the Paris Declaration which set out five principles for more effective aid (hereafter, Paris Principles), including targets to be achieved by 2010 (see Box 1). The theory underpinning these principles is that the provision, management and use of aid in this manner will lead to better results in terms of achieving the development objectives set out in national development plans. Accra represented a mid-way point, and the next High Level Forum takes place in Seoul in 2011 at which the achievements of the Paris Declaration and the road ahead will be discussed.

Box 1: The Paris Principles

Ownership – Developing countries set their own development strategies

Alignment – Donor countries and organisations bring their support in line with these strategies and use local systems to deliver that support

Harmonisation – Donor countries and organisations coordinate their actions, simplify procedures and share information to avoid duplication

Managing for Results – Developing countries and donors focus on producing and measuring results

Mutual Accountability – Donors and developing countries are accountable for development results

In preparation for the Accra and Seoul summits, work was commissioned to evaluate progress towards the Paris Declaration targets. Studies, therefore, exist which evaluate these shifts in the practice and management of aid, and which challenge and question the process of the aid effectiveness agenda. In 2010, and it is clear there is still some way to go before many of the Paris targets will be achieved. Many developing countries have not developed the robust strategies and systems to enable donors to provide their aid in a more harmonised and aligned fashion. Likewise, many donors harbour concerns over governance in developing countries or the constraints of domestic factors.

An example of an aid modality which embodies the full range of Paris principles would be general budget support - the provision of predictable and untied aid directly into a recipient government's budget which it is then free to use in support of national development strategies. However, a wide range of aid modalities continues to be used which may or may not be considered to adhere to the Paris principles (see section 1.2).

There is a growing body of evidence to demonstrate changes in aid practice and management. What is less certain is whether these changes are leading to the hoped-for outcomes in terms of reducing poverty and enhancing social and economic development (see Stein et al. 2008). This particular review aims to contribute to this by assessing available evidence of how aid delivered under the Paris Principles is impacting upon development outcomes, focusing on one of the MDGs.

MDG 5, which concerns maternal and reproductive health is an area where progress is lagging in many developing countries as outlined above. It a key sector for many donors and an area where very different types of aid are provided, some with direct and some with a more indirect impact on maternal and reproductive health. For example, some donors provide aid to strengthen the broad institutional, policy and financial framework, known as sector-wide or systems strengthening. This is widely recognised as fundamental to improving maternal health outcomes (Freedman *et al.* 2005; WHO and UNICEF 2010). Many donors, however, continue to prioritise project-style aid which focuses on more narrowly defined and managed activities. The Global Health Initiatives (GHIs) - for instance the Global Fund for AIDS, TB and Malaria (GFATM) and the President's Emergency Fund for AIDS Relief - have tended to target single health issues, e.g. malaria rather than broad primary healthcare. It has been argued, however, that such Initiatives have resulted in positive knock-on effects for MDG 5, by virtue of their targeting some of the 'indirect' causes of maternal mortality, such as communicable disease (Walensky and Kuritzkes 2010; GFATM 2010). Furthermore, some GHIs now support programmes which may contribute directly or indirectly to broader strengthening of health systems.

MDG 5 is a good basis from which to compare the impact of different aid modalities in improving outcomes. Put another way, is there evidence within studies or research conducted to date that demonstrates that changes (be they positive, negative or negligible) in maternal and reproductive health can be attributed to the provision of aid in particular ways. This review aims to synthesize the available evidence on the impact of Paris-style aid on MDG 5 outcomes, and to compare this with the available evidence on the impact of non-Paris-style aid on MDG 5 outcomes. This review will ascertain the evidence on all aspects of this question and the quality of available evidence. From the outset. we need to recognise several important issues in respect of this question;

- Firstly, the Paris Declaration is not specifically linked to the Millennium Development Goals although this is implicit for many international institutions.
- The Paris Principles are focused on how donors and recipients manage aid, not on specific outcomes from aid.

- The concept of 'Ownership' means that developing countries set their own development strategy, which may or may not prioritise the MDGs, although in reality many of them do reflect the MDGs.
- There is a dearth of reliable data from developing countries in general and on maternal mortality, which is often mis- and under-reported (AbouZahr 2003; Graham & Hussein 2004) and there is a reliance on estimated ratios (WHO, UNICEF, and UNFPA 2004).
- Tracking health aid is particularly problematic and there is no uniform system for measuring the impact of aid in general (Centre for Global Development 2007: 1; OECD/DAC Development Evaluation Network 2005).
- Work on development outcomes or impact is often focused specifically on those outcomes or on inputs (e.g. policies or tangible inputs such as drugs or aid as a generic concept) and does not necessarily specify the modality of aid
- There is potential bias in donor self-reporting on the impact of aid. Problems of bias and confounding factors effect reports of the impact of aid (Riddell 2007).

1.2 Definitional and conceptual issues

In this section we set out the review question in more depth, and the review method. We have developed a PICO framework to break the question down. This forms the basis of our conceptual framework for undertaking the search for existing studies. We refine this further in a causal chain which sets out how aid is considered to impact on development outcomes.

PICO Framework

The review question can be broken down into the following constituent parts. We are interested in aid delivered according to the Paris Principles (Interventions) to developing countries (Participants) and the impacts this aid has on maternal and reproductive health (Outcomes). We will also explore aid which is not delivered according to the Paris Principles to compare the impact of different aid types (Comparison).[1]

Participants	**Intervention**	**Comparison**	**Outcomes**
Developing Countries	Aid delivered under the Paris Principles	Aid in general	Changes in targets and indicators for maternal and reproductive health covered by MDG 5

The elements within the PICO are defined as follows:

1) PARTICIPANTS - Developing countries

We have defined developing countries as those countries which are categorised as 'Medium Human Development' and 'Low Human Development' in the Human Development Index. This enables our study to cover countries where there are serious problems in maternal health, and which receive support from DFID and other donors, but which are not considered as Least Developed, e.g. India. Please note that we are using the most up-to-date version of the HDI Index currently available (UNDP 2009: 213).

2) INTERVENTION - Aid Delivered under the Paris Principles

[1] Our definitions of key terms are as follows, drawing on definitions given by the OECD-DAC: 'impact' means the intended or unintended effect due directly or indirectly to an aid intervention; 'outcomes' means the changes in the targets or indicators resulting from the short-term and medium-term effects of an intervention's outputs.

In this Review we are essentially looking to compare the impact of two types of aid: aid delivered in accordance with the Paris Principles; and aid not delivered in accordance with these Principles.

We have understood aid delivered in line with the Paris and Accra aid effectiveness principles to mean aid delivered according to the five principles set out in the Paris Declaration on Aid Effectiveness (recognising that these were reiterated in the Accra Agenda for Action):

1. Ownership
2. Harmonisation
3. Alignment
4. Managing for results
5. Mutual accountability

Box 1 (section 1.1) provides a brief definition of each of these Principles.

However, we can anticipate that many studies will not be explicit about whether the aid in question is 'delivered under the Paris Principles' (henceforth Paris-style aid) or not. In order not to lose valuable studies from our pool, we need to establish a mechanism for categorising whether the aid in question is Paris-style or not.

Progress towards the goals of the Paris Declaration is assessed against indicators for each of the Principles. These are detailed in Box 2.

Box 2: Paris Declaration Indicators

Ownership
1. Countries put in place national development strategies with clear strategic priorities.

Alignment
2. Countries develop reliable national fiduciary systems or reform programmes to achieve them.
3. Donors align their aid with national priorities and provide the information needed for it to be included in national budgets.
4. Co-ordinated programmes aligned with national development strategies provide support for capacity development.
5a. As their first option, donors use fiduciary systems that already exist in recipient countries.
5b. As their first option, donors use procurement systems that already exist in recipient countries.
6. Country structures are used to implement aid programmes rather than parallel structures created by donors.
7. Aid is released according to agreed schedules.
8. Bilateral aid is not tied to services supplied by the donor.

Harmonisation
9. Aid is provided through harmonised programmes co-ordinated among donors.
10a. Donors conduct their field missions together with recipient countries.
10b. Donors conduct their country analytical work together with recipient countries

Managing For Results
11. Countries have transparent, measurable assessment frameworks to measure progress and assess results.

Mutual Accountability
12. Regular reviews assess progress in implementing aid commitments.

For the purposes of this review, however, these indicators are not particularly useful as they set out to monitor how aid is managed and delivered, not its impact on development outcomes. We can use these indicators to some extent, for example to assess whether the aid is aligned around the national development priorities of recipient governments, but we need to go a step further in defining Paris-style aid. To

do this we propose to use aid modalities (i.e. the mechanisms through which donors choose to give aid to a developing country) as a way of categorising aid types.

There are a wide range of aid modalities in use which are relevant to our review;

- general budget support (earmarked and non-earmarked): general budget support is a sub-category of direct budget support. In the case of general budget support, the dialogue between donors and partner governments focuses on overall policy and budget priorities. Direct budget support is defined as a method of financing a partner country's budget through a transfer of resources from a donor to the partner government's national treasury. The funds thus transferred are managed in accordance with the recipient's budgetary procedures.[2]
- sector budget support: sector budget support is a sub-category of direct budget support. Sector budget support means that dialogue between donors and partner governments focuses on sector-specific concerns rather than on overall policy and budget priorities.[3]
- basket funds: Basket funding is the joint funding by a number of donors of a set of activities through a common account, which keeps the basket resources separate from all other resources intended for the same purpose. The planning and other procedures and rules governing the basket fund are therefore common to all participating donors, but they may be more or less in conformity with the public expenditure management procedures of the recipient government. A basket may be earmarked to a narrow or a wider set of activities (e.g. a sector or a sub-sector). The term "pool(ed) funding" is sometimes used instead of basket funding.[4]
- project aid: project aid is directed toward an individual development intervention designed to achieve specific objectives within specified resources and implementation schedules (which may or may not be implemented within the framework of a broader programme).[5]

These 4 categories can provide proxies for Paris-style and non-Paris-style aid. We can further conceive this as a hierarchy. Within this, general budget support can be considered to constitute the aid modality which most closely fulfils the Paris Principles. It is given directly to the central government of a recipient, with no indications of how it should be spent. One caveat is that the recipient must have in place a robust national development strategy which is well managed and transparent. Sector budget support and basket funds can also be considered to adhere to the Paris Principles, but in a more constrained way. Some types of project aid can also be considered to adhere to the Paris Principles, so 'project aid' need not always be 'bad aid'. For the purpose of the review we define the "pooled funding of stand alone projects" as project aid that has been *harmonised* with that of other donors, and projects which are "on-budget and on-plan,"[6] as *aligned* with government plans.

Other types of project aid cannot be said to adhere to the Paris Principles, namely when projects are managed and delivered outside country frameworks and financial systems. These we consider to be a proxy for non-Paris-style aid (or aid in general).

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[2] Definition sourced from the OECD DAC Glossary, available at: http://www.oecd.org/document/19/0,3343,en_21571361_39494699_39503763_1_1_1_1,00.html

[3] Definition sourced from the OECD DAC Glossary, available at: http://www.oecd.org/document/19/0,3343,en_21571361_39494699_39503763_1_1_1_1,00.html

[4] Definition sourced from the Aid Management Guidelines Glossary developed by the Danish Ministry of Foreign Affairs. Available at: http://amg.um.dk/en/servicemenu/Glossary/Glossary.htm

[5] Ibid.

[6] A project can be said to be "on plan" when its objectives align with those of the developing country. This is most likely to be the case when a donor has consulted/ planned its project in conjunction with the aid recipient government. A project can be said to be "on budget" provided the donor has informed the government of its intentions. Often a government will factor such information into its own medium-term expenditure framework, enabling it to free up resources for other priorities.

Aid recipient countries themselves often conceptualise an aid hierarchy when stating their preferences to donors. An example of this comes from the Rwandan government in the country's *Aid Policy* (Government of Rwanda 2006: 7-8), in which aid modalities are ranked in the following order of preference:

MOST PREFERRED	Unearmarked/General Budget Support
↓	Sector Budget Support
↓	Pooled Funding of Stand Alone Projects that are on-budget and on-plan
↓	Individual Stand Alone Projects that are on-budget and on-plan
LEAST PREFERRED	Projects that are off-budget and off plan

Our categorisation can be defined thus:

PARIS-STYLE AID	Unearmarked/General Budget Support
↓	Sector Budget Support
↓	Pooled Funding of Stand Alone Projects that are on-budget and on-plan
↓	Individual Stand Alone Projects that are on-budget and on-plan
GENERAL AID	Projects that are off-budget and off plan

To sum up, the question of what constitutes Paris-style aid is complicated, but an initial categorisation we will use in our analysis will be based on two questions:

- Can we determine what aid modality has been used?
- Does the manner in which this modality has been employed point to the application of any of the Paris Principles?

3) COMPARISON - Aid in general

In line with the above definition of aid delivered under the Paris Principles, we consider 'aid in general' to be aid that does not adhere to the Paris Principles, i.e. aid interventions that are managed and delivered outside country frameworks and financial systems and therefore affording no or very limited 'ownership' to the recipient authorities. Our definition of 'aid in general', therefore, focuses on delivery mechanisms rather than discrete aid inputs. The difficulty here is that some interventions may appear or lay claim to being aligned or harmonised. The key element which distinguishes between Paris-style aid and general aid by our definition is whether aid is 'on-budget' or not, i.e. reported within the budget of the recipient government.

By making this comparison, we will provide an analysis of the impact of different approaches to the provision of aid on MDG 5 outcomes.

4) OUTCOMES - Changes in MDG 5 targets and indicators

Outcomes are changes in the MDG 5 targets and indicators which occur as a result of the short-term and medium-term effects of an aid intervention. These targets and indicators are set out at: http://unstats.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm. These are:

- Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio, assessed by:
    i. Maternal mortality ratio
    ii. Proportion of births attended by skilled health personnel
- Achieve, by 2015, universal access to reproductive health, assessed by:
    i. Contraceptive prevalence rate
    ii. Adolescence birth rate
    iii. Antenatal care coverage (at least one visit and at least four visits)
    iv. Unmet need for family planning

CAUSAL CHAIN

The Paris Principles represent a global consensus of what constitutes effective aid, based on reflections and research into why aid in the past has not worked. The Principles are therefore based on a policy-oriented theory of how aid should deliver results. The following causal chain demonstrates how aid delivered under the Paris Principles might be expected to impact upon these development outcomes in general and with reference to maternal health (Table 1). Table 2 illustrates a causal chain that demonstrates the impact of non-Paris-style (general) aid on development outcomes. The causal chain, comprises a range of assumptions and there are caveats. As previously mentioned in 1.1, the aid effectiveness agenda is not directly associated with the MDGs, although for many donors this constitutes an overall rationale for the provision of aid. The aid effectiveness agenda is more aimed at the achievement of country-level development strategies. These *tend* to make reference to the MDGs explicitly or implicitly, but they are not necessarily central to each individual country's development strategy. So there is a tenuous direct link between aid effectiveness principles and MDG outcomes. However, outcomes at the national level are associated with outcomes at the global level as improvements in the national-level outcomes would be expected to lead to improvements in global statistics.

Our causal chain makes several assumptions;

a) that donors/governments are adhering to the Paris Principles;

b) that governments are committed to national development strategies;

c) that the government uses the aid to those particular ends.

Much of the literature on aid effectiveness analyses the extent to which those involved in aid partnerships are adhering to the Principles or how governments use aid (Stern et al. 2008). This review will assess whether there is evidence that goes all the way through this chain. Finally, confounding and external factors beyond aid that affect development outcomes are crucial and we will carefully collect data from the studies about these confounding factors.

Table 1: Theoretical framework of aid delivered according to the Paris Principles

Theory	Causal 1	Causal 2	Causal 3	Outcome 1	Outcome 2
PARIS-STYLE AID = Owned Aligned Harmonised Coordinated Well-managed I.e. aid is 'owned', so a country is responsible for its effectiveness and takes that responsibility Aid is harmonised and aligned, so it is in tune with country needs and systems. Therefore aid is well-managed and coordinated	Aid provided following these principles will tackle defined country needs, objectives and targets (focused around poverty, governance and the MDGs), agreed to by national authorities and donor agencies	Donors provide aid to country authorities, using a range of 'Paris-style' modalities (our hierarchy)	National authorities then use aid (either with no donor involvement or some donor involvement) to tackle defined development activities	Changes in the indicators of a specified development area at the national level OR No changes	Changes in the indicators of a specified development area at global level OR No changes
APPLIED TO MATERNAL HEALTH	Country has defined objectives related to maternal/reproductive health OR To broader health systems which encompasses maternal/reproductive health	Donors provide aid (generally or specifically) to address those defined objectives in tune with government systems OR To strengthen health systems	National government uses the aid provided to address maternal health directly OR To address broader health systems	Changes in the maternal/reproductive health indicators at the national level OR Changes in general health indicators with knock-on effects for maternal health OR No changes	Changes in the maternal/reproductive health indicators at the global level (i.e. contribution to the attainment of the MDG 5) OR No changes

Table 2: Theoretical framework of aid not delivered according to the Paris Principles

Theory	Causal 1	Causal 2	Causal 3	Outcome 1	Outcome 2
NON-PARIS-STYLE (GENERAL) AID = Un-owned Unaligned Un-harmonised Un-coordinated Unaccountable (so not so well managed)	Aid not provided according to country systems/needs	Donors provide aid for specific activities outside country systems	National authorities are not involved so no 'ownership'	No changes in development indicators at the national level OR Changes in development indicators (but attributable to donor rather than national authorities)	No changes in development indicators at the global level OR Changes at the global level
APPLIED TO MATERNAL HEALTH	Donor chooses intervention areas by its own criteria	Donor provides aid for maternal/reproductive health projects outside country systems		Positive impact on maternal health indicators at the national level OR Negative impact OR No impact	Change in maternal health indicators at the global level OR No change at the global level

1.3 Policy and practice background

This review is concerned with two key aspects of international development debates: maternal health and aid effectiveness.

Maternal health has increasingly emerged as a core priority for several of the world's largest donors, with DFID and USAID leading the bilateral effort, and the GFATM and the World Bank dominating in terms of multilateral funding (Greco *et al.* 2008). It is also a field where large philanthropic organisations are playing a growing role. In conjunction, more research is being conducted in this field.

Donors such as DFID have publicly committed themselves to the Paris Declaration and are increasingly attempting to allocate aid via more recipient-friendly modalities, e.g. general and sector budget support. The next High-Level Forum on Aid Effectiveness will take place in 2011, and it will provide an opportunity to assess progress in changing how aid is managed and used, and will consider the future of the international aid agenda. The findings of this review will provide a timely evaluation of the effectiveness of aid on maternal health outcomes by highlighting the existing evidence of aid on maternal health as well as gaps in our knowledge.

1.4 Research background

We conducted a preliminary search of the literature to identify studies that assess the impact of aid on maternal health. We did not identify any existing systematic reviews of this topic. More generalised literature regarding maternal health and aid is available, however, and generally falls into the following cluster types.

DONOR SELF-REPORTING

Impact reporting on project-style aid is well developed both within the donor community and among (aid-funded) civil society organisations; and we expect to find many examples of how aid-funded interventions have influenced maternal health (e.g. USAID 2009; GFATM 2010). As suggested, the Global Health Initiatives are now adding to this tradition of reporting. This literature in particular needs to be carefully assessed for potential bias, which we will undertake during our quality assessment processes.

PROGRESS TRACKING STUDIES

Studies tracking progress for MDG 5 are in abundance, with useful resources including the annual *Millennium Development Goals Report* produced by the UN, and the *Countdown 2015* series (e.g. Bryce et al. 2008; WHO and UNICEF 2010). More critical analyses of progress toward MDG 5 are also plentiful and include contributions from all interested stakeholders: UN agencies, multilateral and bilateral donors, the academic community and civil society. Such documents often make suggestions as to how to accelerate progress toward MDG 5 (Freedman *et al.* 2005; Bernstein & Hansen 2006). The quality and focus of such critical analyses vary wildly, as do the methodologies.

Primary statistical data monitoring the indicators for MDG 5 can be accessed via the UN databases: MDG Info and WHO Statistical Information System.

COUNTRY CASE STUDIES

In lieu of systematic evidence on the impact of ODA on MDG 5, country case studies – charting declines in maternal mortality are used to inform policy (e.g. Koblinsky 2003; Campbell *et al.* 2005; Padmanathan *et al.* 2003; Baird *et al.* 2010). It will be part of this review to determine whether any of these case examples points directly or indirectly to the contribution of overseas development aid, and whether that aid could be classed as 'Paris-style' aid.

STUDIES TRACKING AID FLOWS

Another subset of the literature alludes to why progress toward MDG 5 is falling short; here, we refer to the analytical work that has been done on tracking aid flows to maternal health. Such studies suggest there is poor targeting of maternal health aid, the continued

dominance of project aid, and the inadequate supply of aid for maternal health (e.g. Greco *et al.* 2008; Powell-Jackson *et al.* 2006). In addition, we would draw on primary data sets, the OECD DAC and OECD CRS (and the complementary OECD 'Health as a Tracer Sector' resources). Finally, in this category we have the broader literature analysing and tracking aid effectiveness which may make direct or indirect reference to maternal and reproductive health.

All these types of studies will be considered for inclusion in our review when judged against our inclusion criteria, We anticipate that the evidence for a causal relationship between 'Paris-style' aid and MDG 5 outcomes will be small.

1.5 Objectives

Our research objectives are as follows:

- to systematically review of all available evidence about the impact of different types of aid upon MDG 5 indicators;
- to compare the effects of aid delivered under the Paris Principles and aid delivered outside this framework;
- to produce a synthesis of the data identified;
- to assess the quality of this evidence;
- and to identify gaps in the current evidence-base and comment on the scope for future reviews and research in this area.

2. Methods used in the review

2.1 User involvement

There are two core groups of end-users for this research: governments and health services in developing countries; and donor agencies and multilateral institutions. We will engage with potential user groups in various ways, to obtain data in the initial phases, to discuss preliminary findings and get feedback in the middle phase, and to disseminate the results at the end of the project.

There are resources to meet with the OECD-DAC working groups on aid effectiveness and health, as well as consultants providing input to the work of these groups. We will also engage with DFID aid effectiveness and health staff.

Findings of the research will be disseminated in the form of a policy brief, a summary report, and the full report to the full range of interested partners, including agencies, organisations and academics whose studies have been reviewed. Findings will also be posted on R4D, ID21, ELDIS and other development research dissemination sites.

We will disseminate our findings directly to governments of developing countries where we have existing contacts or whose countries feature in the studies explored (aid coordination units, ministries of finance and health). We will publish the findings of the systematic review in a peer-reviewed journal.

2.2 Identifying and describing studies

2.2.1 Defining relevant studies: inclusion and exclusion criteria

Inclusion criteria will be applied incrementally over the course of the various screening rounds (see section 2.2.3 and figure 1 for more details). The main criteria for inclusion stem from our conceptual framework, which is set out in section 1.2.

Round 1

In the first round, electronic databases will be searched using query strings based on the search terms outlined in Appendix 2.1. Concise sub-sets of these terms will be used to search other sources as applicable (see section 2.2.2 for other sources). A record will be made of the search histories.

Round 2

This round will screen the studies identified from the database searches and the studies picked up from other sources. In Round 2, the title and abstract of studies must satisfy the following inclusion criteria:

- External financing must be reported whether it be:
    - Aid delivered under the Paris principles (e.g. programme aid, general budget support, sectoral budget support, or projects that are on-budget), or:
    - Aid in general (e.g. off-budget project support)
    - Studies making a direct comparison between types of aid will be given priority

  Studies making only passing reference to aid or donors, e.g. which conclude with recommendations for external actors but which do not contain data on an external intervention will be excluded
- Studies must concern MDG 5, the MDG 5 indicators (i.e. maternal mortality rates, birth attendance by skilled professionals, contraception usage and family planning, adolescent births, antenatal care) or MDG 5 outcomes (trends in maternal and reproductive health). The mention of MDG indicators will be considered sufficient; it will not be necessary for studies to refer directly to 'MDG 5'.

- Data in studies should not predate 1990. This cut-off date reflects the beginning of a concerted agenda to reform aid both in terms of outcomes (poverty focus leading to the adoption of the MDGs in 2000) and in terms of effectiveness. The period 1990 to the present-day therefore gives a broad time-span to capture aid interventions that tie in with the evolution of the aid effectiveness and poverty reduction agenda since 1990.
- Studies must refer to developing countries in general, specific developing countries or developing regions of the world.
- Studies must present empirical research (qualitative or quantitative), i.e. contain primary data.

Round 3

In Round 3, the search criteria outlined in Round 2 will be applied to the full text. Studies will then be screened for 'impact'. Studies included at this stage must satisfy the following criteria:

- Studies must present evidence of the impact of aid on MDG 5 outcomes, i.e. studies should seek to identify changes in the MDG 5 targets and indicators which can be attributed to an aid intervention. All studies which report causal, correlational or process relationships will be included.

Studies that fail to meet the inclusion criteria during rounds two and three will be excluded from the review. All inclusions and exclusions will be recorded in the EPPI-Reviewer reference management database. The reasons for exclusion will be recorded in EPPI-Reviewer and exclusion criteria will be placed in a hierarchy.

Studies eligible for inclusion at Round 3 will be retained for data extraction.

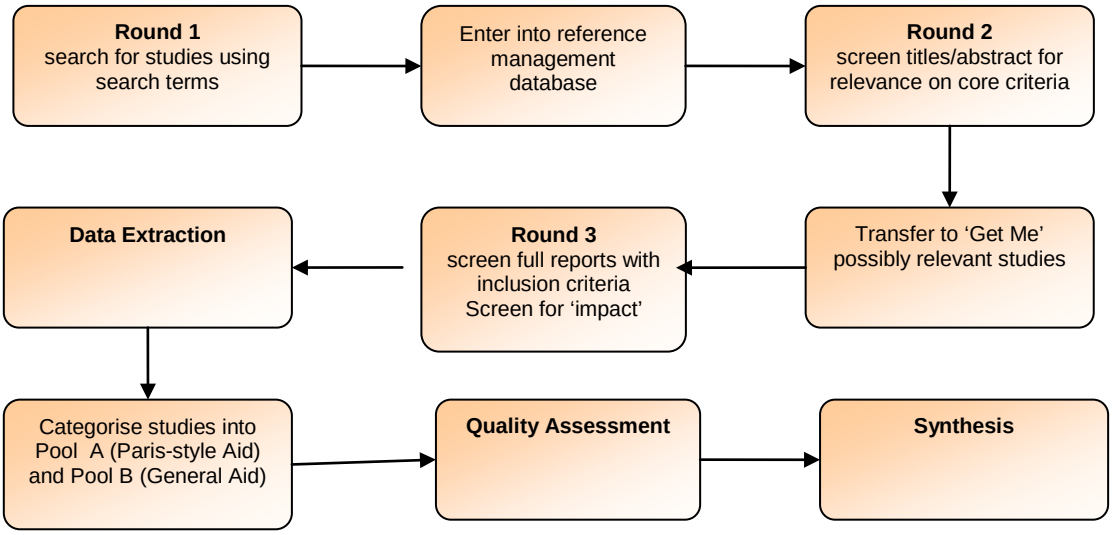

Figure 1: Overview of the Review

2.2.2 Identification of potential studies: Search strategy

Reports will be identified from the following sources:

- Electronic searches on bibliographic databases that index academic journals and the reference lists of primary studies. A specialist university librarian has been drawn into the project to help run the database searches:
  Web of Science; Dissertations and Theses; Index to Theses; MEDLINE; EMBASE; Cinahl; Popline; Global Health Library (incorporating (LILACS, AFRO, EMRO, PAHO, WHOLIS, WPRO); Econlit; IBSS; JOLIS; and IDEAS

- Keyword searches of key organisational websites (using Google advanced search): World Health Organisation, United Nations, UNIFEM, PATH, White Ribbon Alliance, OECD, World Bank, GFATM, USAID, DFID

- Keyword searches using Internet search engines, e.g. Google and Google Scholar

- Keyword searches using topic gateways, e.g. ELDIS, BLDS, Aid Effectiveness Portal, R4D

- Bibliographic snowballing, e.g. identifying eligible studies from reference lists

- Direct contacts with experts working in the fields of maternal health and aid. This method will also be used where a claim is made on behalf of the impact of aid on MDG 5 but data to support this claim is not included in the study. We will contact the authors of the relevant study directly, requesting the primary data.

- Due to limitations on resources, it will not be possible to undertake hand-searching.

- We will restrict studies to those published in English

Examples of keywords are listed in Appendix 2.1.

The database function for EPPI reviewer will be used to keep track of studies identified in this review. For all studies picked up in screening rounds 1 and 2, titles and abstracts will either be automatically imported or entered manually into the database.

Searches of the above sources will be limited to studies conducted in a specific time period. The cut-off point is the year 1990.

2.2.3 Screening studies: applying inclusion and exclusion criteria

Round 1
In the preliminary round of searching, searches will be run in the electronic databases listed in 2.2.2. Equally, concise/adapted versions of our search terms will be applied to smaller databases. If these searches fail to capture particular sources which we anticipate to exist, such as government reports, selective hand-searching will be conducted. All identified studies will be entered in the EPPI-Reviewer's reference management system (title plus abstract). We will take care to identify any existing reviews on related topics.

Round 2
In the second round, titles and abstracts will be screened to identify potentially eligible studies. Only studies that meet all our core search criteria (MDG, aid, developing country, date and empirical study design) will be included.

Round 3
In the third round of screening, full reports will be obtained and imported into the database. These will then be subject to screening for 'impact'. Data will be extracted from studies which are included at this stage.

2.2.4 Characterising included studies

We will code the studies to facilitate the screening process in Rounds 2 and 3, and to aid data extraction following Round 3.

Round 2

During screening Round 2 a simple coding tool will be employed to apply our inclusion/exclusion criteria (primarily for the purpose of excluding irrelevant studies). This initial tool will be called: "Inclusion/exclusion criteria" and will consist of 6 child nodes,[7] to be applied in the following hierarchy:

1. Exclude studies which do not focus on aid/external financing, be it general or Paris-style aid).
2. Exclude studies which do not refer to MDG 5 or one of its related indicators, i.e. maternal mortality rate, births attended by skilled professionals, contraception usage/family planning, adolescent births, antenatal care).
3. Exclude studies with data which pre-date the 1990 cut-off point established for the rapid review).
4. Exclude studies which do not refer to a developing country/region as defined by the country/region's placement in the Human Development Index).
5. Exclude studies which do not use causal, correlation, or process designs
6. Include based on title and abstract (all studies that meet this criterion will be put through to screening Round 3).

In Round 2, only <u>one child node will be checked per study</u>.

<u>Round 3</u>

During screening Round 3, when studies are screened on the basis of the full text, a 7th and 8th child node will be added to the bottom of the existing hierarchy:

- Exclude on impact
- Include at full text

It will now become necessary to <u>check two child nodes per study</u>. Either, to reflect that a study which originally made it through Round 2 is now being excluded *based on its full text* and/or for a failure to establish a relationship between aid and MDG 5 indicators or, to reflect that a study is still deemed eligible for inclusion having reviewed its full text during Round 3 because it attempts to assess the impact of aid on the MDG 5 indicators (here it will be necessary to check child nodes: "include based on title and abstract" and "include at full text").

Studies that are included after this Round of screening will be subject to data extraction and included in the synthesis (see 2.3.2).

<u>Data Extraction</u>

All studies that make it through screening Round 3 will proceed to data extraction. During data extraction, multiple coding tool questions will be posed under the following broad subject headings:

1. Study aims and rationale (e.g. to track progress toward MDG 5, to assess donor project etc.)
2. Study type (e.g. peer reviewed, grey literature, impact evaluation, RCT, etc.)
3. Study design/methods (e.g. quantitative, qualitative or mixed)
4. Study focus (e.g. country, region, global, etc.)
5. Study sample (e.g. target population)
6. MDG 5 focus (e.g. explicit reference to MDG 5 or to some MDG 5 indicators)
7. Aid-funded Intervention/s described (e.g. discrete medical input or support to a sector-wide approach)
8. Evaluation of the aid intervention (e.g. focus on inputs, outputs or outcomes?)
9. Aid modality used (e.g. budget or project support)
10. Aid quantity and time-scale
11. Aid management and conditions (e.g. adherence to the Paris indicators, control of recipient over resources and decisions)
12. Study results and conclusion (has the study made any claims about the impact of aid on MDG 5 indicators? Is there evidence of causality or correlation? What causal explanations or pathways are offered?)

[7] In computer science, a tree is a widely used data structure used to represent a data hierarchy (using a set of linked nodes). In this example, the overarching code "Inclusion/exclusion criteria" is referred to as the 'parent node', while the hierarchical sub-options within it (e.g. "exclude on aid") are known as the 'child nodes'.

13. Confounding factors (e.g. are confounding factors highlighted in the study?)
14. Quality assessment questions (used to determine the study's quality and possible bias)

From this, we will sub-divide the included studies into two Pools according to aid type, following our definitions given in section 1.2: Paris-style aid (Pool A); and general aid (Pool B), before proceeding to the synthesis.

2.2.5 Identifying and describing studies: quality assurance process

While most of the data extraction process will be carried out by a single reviewer, two quality assurance checks will be applied:

1) Prior to initiating the full screen (round 1), we will carry out some pilot/pre-testing. Here, following some preliminary data extraction, three people will go through a handful of searches to ensure that the application of eligibility criteria is standardised (i.e. that we are not relying on specialist knowledge or assumptions to understand the inclusion criteria). If it seems that the search criteria were not sufficiently standardised, they will be refined further to ensure studies are being judged according to objective (and replicable) criteria.
2) Two reviewers and a librarian will be involved in Round 1.
3) 20% of all the studies picked up in screening Round 2 will be screened by a second independent reviewer to test the level of reviewer agreement.
4) 10% of studies extracted in Round 3 will be independently coded by a second reviewer to ensure that the reviewers are extracting all available data.
5) When categorising studies by aid type following data extraction, where a classification cannot easily be made about the nature of the aid described in the study, the study will by default be placed into Pool B. Such studies will be subject to additional scrutiny by another team member to confirm the decision. Where appropriate (and where resources permit) we will conduct further research on a given study, for example through contacting authors or donors or using citation tracking, to get further details on the aid intervention to facilitate the most accurate classification possible. An example of this is the study by Baird *et al*. mentioned above, where the intervention is both designated as a World Bank project and as an initiative of the Indonesian Government without any further explanation as to how the aid was delivered or how the intervention was designed.

2.3 Methods for synthesis

2.3.1 Assessing quality of studies

Our synthesis will focus on those studies which make claims about the impact of different types of aid upon MDG 5 outcomes (see 2.3.2.1). These might be studies based on quantitative, qualitative or mixed methodologies.

Included studies will be subject to an assessment of their quality, with key factors being the reporting on the aid intervention (to support the categorisation of aid type), reporting on confounding factors, and tests for bias. We anticipate that many will be linked to particular institutions with a potential vested interest in the results, and some assessment of whether this might have affected the content or findings will be required. No studies will be excluded from the review on the basis of quality, bias or validity.

We will begin the process of synthesising the review findings by dividing the studies in each Pool into one of three types:

1. Studies presenting causal impact data, i.e. impact evaluation studies, based on experimental and quasi-experimental design

2. Studies presenting correlational impact data, based on non-experimental design
3. Studies presenting process data, primarily observational and narrative studies

While it is the stated objective of this review to explore the evidence of the impact of aid, we need to be wary of claims attributing change to aid alone. As the 2009 report by the Task Team on Health as a Tracer Sector acknowledges: "it is intrinsically hard to measure the specific impact of particular measures, and health outcomes are influenced by many factors well beyond the health sector" (OECD 2009: 10). Our coding system will include confounding factors identified in studies, and this will be included in our synthesis.

No single approach to the assessment of quality and the identification of bias in studies exists (Systematic Reviews 2009). We will adopt the best principles of quality assessment and carefully consider the contextual, pragmatic and methodological factors which might influence the research conclusions, building on existing examples (Rees et al. 2009; Thomas et al. 2003; Public Health Resource Unit 2006; Waddington et al. 2009) and expertise in the sectors under study within the review group. Our quality assessment criteria are as follows:

1. Independence of the study:
    a. Is the study author a donor or recipient or in some other way directly connected to the aid?
    b. Was the study funded by a donor or recipient?
2. Reporting on the aid intervention:
    a. Is there a clear description of the aid intervention?
    b. Is the aid modality defined?
    c. Is the amount of aid specified?
    d. Is there a clear description of the aid flow from funder through to final beneficiaries?
    e. Is there evidence of local ownership of the aid intervention?
3. Robustness of the study design and methods:
    a. Are the study aims and methods clearly described?
    b. Were steps taken to increase rigour in the sampling?
    c. Were steps taken to increase rigour in the data collection?
    d. For impact evaluation studies, is the counter-factual or comparison credible?
    e. Are the study limitations discussed?
4. Robustness of the data analysis:
    a. Do the data adequately support claims about the impact of aid?
    b. Are enough data presented to show how authors arrived at their findings?
5. Reporting on confounding factors:
    a. Does the study report confounding factors?
    b. For impact evaluation studies, is there clear measurement of and control for confounding factors?
    c. Is the study explicit about possible alternative explanations behind the conclusions?
    d. Does the study report external events or factors which may have affected the conclusions?

Answers will be categorised as Yes/No/Unclear, and we will use this to rate the studies as low, medium or high quality.

We will not exclude studies on the basis of quality. We may use the outcomes from the quality assessment process in any sensitivity analyses and they will form an integral component of the interpretation of our review findings.

2.3.2 Overall approach to and process of synthesis

In Round 3 of our screening process we will have identified full studies which meet our core criteria. Data will then be extracted from these studies and codified, as outlined in 2.2.4. Studies will also be subject to the quality assessment process outlined in 2.3.1. This information forms the basis for a framework analysis which is our primary method for approaching the synthesis.

Our studies will be sub-divided by the type of aid into Pool A (Paris-style aid) and Pool B (general aid). For the analysis, we will then split the studies according to the nature of the evidence of impact presented, into:

- Studies presenting causal impact data, based on experimental and quasi-experimental design, including those based on statistical matching methods such as propensity score matching (PSM) or studies based on survey data that use multivariate techniques with adequate control for confounding variables and statistical methods to account for sample selection bias, such as instrumental variables and difference-in-difference estimation
- Studies presenting correlational impact data, based on non-experimental design, including interrupted time-series studies, pre-test/post-test designs and post-test analyses
- Studies presenting process data, primarily observational and narrative studies

Our primary focus is on the first two categories. We will synthesise the causal pathways or associations presented within the studies, and relate these to our own causal chain outlined in section 1.2. In the event that our review yields few or no studies which present robust evidence of impact, we will provide a discussion of the nature of the claims made within other types of studies about why an aid intervention might have particular effects.

Our final synthesis will bring together the findings from the two Pools to present:

- evidence of the impact of Paris-style aid on MDG 5 outcomes
- evidence of the impact of general aid on MDG 5 outcomes

Where necessary we will undertake a sensitivity analysis to test different assumptions e.g. do maternal outcomes differ in studies which were funded by organisations with a conflict of interest? Are there patterns in findings from studies focused on particular aspects of maternal health or funded by particular donors? Do studies of particular geographical areas produce different estimates of effect than those from other geographical areas.

2.3.2.1 Selection of studies for synthesis (if not all studies are included in the synthesis)

Our synthesis will prioritise studies presenting robust impact evaluation data, with a particular emphasis on studies that attempt to compare different forms of aid delivery, e.g. compare the impact of budget support and project aid on maternal health outcomes.

By extracting data from a range of study designs, as outlined above, we give ourselves flexibility if we find no or few studies presenting impact evaluation data. In the event of this, we will map the literature to discuss what claims are being made about the impact of Paris-style aid on maternal health outcomes. We would further attempt to provide explanations for why the evidence may not exist.

2.3.2.2 Selection of outcome data for synthesis

Outcome data for synthesis will be data relating to changes in the MDG targets and indicators on maternal and reproductive health (as outlined in section 1.2)

Data may relate to the national or the global level.

These will be synthesised and analysed as outlined in 2.3.2.3.

2.3.2.3 Process used to combine/synthesise data

The review employs a mixed methodology, and depending on the yield we may include studies that present either quantitative or qualitative data or a mix of both. We will begin the process of data synthesis by presenting tabulated results from the included studies, split into Pool A (Paris-style aid) and Pool B (general aid).

Data from different study designs will initially be presented and analysed separately for each Pool, according to the nature of the claims about impact being made:

- causal impact data, which would show the strongest evidence of impact and would be based on experimental or quasi-experimental designs;
- correlational data, which would give weaker evidence possibly suggestive of impact. These data will come from non-experimental designs.
- process data, which might present possible associations between aid delivery mechanisms and development results arising from qualitative studies or narrative descriptions.

The data will then be brought together into a summary for each type. In this way we will be able to comment on the totality of the evidence for different types of aid delivery.

Quantitative data synthesis

Where appropriate, we intend to re-calculate summary statistics for each study based on absolute numbers for each outcome extracted from the primary studies. Where a pooled estimate of data does not make practical sense, we will present absolute numbers for each study and calculate a measure of effectiveness with 95% confidence intervals. We will present data for each of the MDG 5 indicators. If these data are amenable, we will also pool estimates of effectiveness of aid for each of these variables. Tests for heterogeneity will be performed and where $I^2 \geq 30\%$ or a Q statistic of p=<0.1 is obtained a random effects model will be used.

Qualitative data synthesis

Undertaking a formal meta-ethnography is beyond the scope of our review. We will draw on methods for qualitative synthesis suggested in the literature, such as realist synthesis and thematic synthesis. We will group and report themes identified by primary studies, and from this draw out lines of argument.

2.4 Deriving conclusions and implications

We intend to consider the totality of the evidence of the impact of aid delivered using Paris Principles on MDG 5 outcomes using data collected from different types of organisational reports and research manuscripts. We are conscious of the general difficulties in making comparisons using indirect sources of data and will be wary of attempting to make direct comparisons between types of aid, given that the contextual frameworks for studies will be extremely varied. Likewise we are conscious of the need to identify confounding factors which may not be explicit within studies. Our synthesis will seek to expose the evidence that exists in relation to different types of aid, highlight gaps in the knowledge-base, and propose potential ways for addressing these gaps. We will therefore carefully consider the data and their meaning in consultation with our own team of content experts and other colleagues working in the area of international aid in order to reach cautious conclusions which answer our research question. We anticipate that the identification of areas of uncertainty will support recommendations for future research. We also hope to comment on whether there are study types which are particularly useful to answer this type of question and to make recommendations concerning the methodology of conducting systematic reviews in this field.

The final report will capture clearly the process through which this review was undertaken, enabling it to be replicated. The timeline for completing this review is detailed in Appendix 3.

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Appendices

Appendix 1.1: Authorship of this report

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Conflicts of Interest (if any)
The authors are not aware of any conflict of interest, financial or otherwise, that may influence the objectivity of the review.

Appendix 2.1: Search Strategy For Electronic Databases

Please refer to Section 2.2.1 for the full list of inclusion/exclusion criteria

As part of our electronic search strategy we will use two query strings when searching electronic databases. The query strings concern 'aid in general' and 'MDG 5'. Examples of the sort of search criteria and strategies we will use are detailed below. We will tailor our search strategies according to the complexity of the databases we are targeting but also in such a manner as to reap the most results. Hence, we may not use all of the search criteria outlined below in all instances.

Having carried out some pre-testing, we have decided against adding any further query strings in Round 1 concerning our other inclusion criteria (i.e. 'aid delivered in line with the Paris Principles', 'studies after 1990', 'developing countries', and 'impact'). This is in order to pick up as many potential studies as possible.

QUERY STRING 1. AID IN GENERAL. EXAMPLE SEARCH CRITERIA:

- Official Development Assistance (ODA)
- Aid flows/disbursement/commitment/international/project/programme etc
- Donor
- Development partner
- Bilateral
- Multilateral
- Loans
- Grants
- Development assistance
- Official Development Assistance
- Development/International Cooperation
- Global funds / global programmes / global health initiatives / global initiatives

QUERY STRING 2. MILLENNIUM DEVELOPMENT GOAL 5. EXAMPLE SEARCH CRITERIA:

- MDG 5/MDG5
- Millennium Development Goal 5/five
- Maternal mortality/morbidity
- Maternal mortality ratio
- Reproductive health/medicine
- Contraceptive prevalence rate
- Unmet contraception need
- Family planning
- Attended births
- Antenatal care coverage
- Adolescence/adolescent birth rate
- Reproductive and Child Health (RCH)
- Safe motherhood

Example Search Strategy for Web of Science:

Topic=(((official development assistance OR ODA OR (aid SAME (disbursement* OR commitment* OR flow* OR international OR development OR project* OR program*)) OR donor OR global health initiative*) AND (MDG 5 OR MDG5 OR ((Millennium Development Goal* OR MDG*) SAME (5 OR maternal)) OR maternal mortality OR maternal health OR reproductive health OR (birth* SAME attended) OR family planning OR antenatal care OR (adolescen* SAME birth rate*) OR (contracepti* SAME rate))))

Example Search Strategy for **Medline** (OvidSP 1950 to present):

1. (official development assistance or ODA).mp.
2. global health initiative*.mp.
3. (aid adj3 (disbursement* or commitment* or flow* or international or development or project* or program*)).mp.
4. (Millennium Development Goal* adj3 "5").mp.
5. (MDG5 or MDG 5).mp.
6. Maternal Mortality/ or maternal mortality ratio.mp.
7. reproductive health.mp. or Reproductive Medicine/
8. (birth* adj3 attended).mp.
9. Family Planning Services/
10. Prenatal Care/ or antenatal care.mp.
11. Pregnancy in Adolescence/
12. Contraception Behavior/
13. Maternal Health Services/
14. (maternal adj3 health).mp.
15. 1 or 2 or 3
16. or/4-14
17. 15 and 16

Appendix 3: Timeframe for the Review

	Start date	End date
Registration of title with DFID	14 May	28 May 2010
Preparation of protocol	1 June	15 July
DFID and External Review of protocol	15 July	6 August
Study search	15 July	15 August
Assessment of study relevance	1 August	15 September
Extraction of data	15 September	30 September
Synthesis	1 October	15 October
Preparation of draft report	1 October	12 November
DFID review of draft report (please allow 2 weeks)	12 November	26 November
Dissemination of draft report	26 November	30 November
Revision of draft report	12 November	31 December
Summaries	29 Nov	31 Dec

Note: there is deliberate overlap throughout the search, assessment, extraction, synthesis and writing phase.