

# **New models of contracting in the public sector: a review of alliance contracting, prime contracting and outcome based contracting literature**

## **Authors**

\*Dr Marie Sanderson, Research Fellow, Department of Health Services Research & Policy, London School of Hygiene & Tropical Medicine. Marie.Sanderson@lshtm.ac.uk

Professor Pauline Allen, Professor of Health Services Organisation, Department of Health Services Research & Policy, London School of Hygiene & Tropical Medicine.

Dr Randeep Gill, Research Fellow, Department of Health Services Research & Policy, London School of Hygiene & Tropical Medicine.

Dr Emma Garnett, Research Fellow, Department of Health Services Research & Policy, London School of Hygiene & Tropical Medicine.

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## **Abstract**

The co-ordination of public services is an enduring challenge and an important policy priority. One way to achieve collaboration across organisational boundaries, which is being considered in public services such as the English NHS, is through the adoption of alliance contracting, prime provider contracting and outcome based contracting. This paper reviews the cross-sectoral literature concerning the characteristics of these new contractual models, how they function, their impact, and their relation to public sector governance objectives. These new contractual forms are characterised

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as models which, in line with the New Public Management/post New Public Management agenda, seek to incentivise providers through the transfer of risk from the commissioners to the providers of services. Key findings are that the models are likely to incur high transaction costs relating to the negotiation and specification of outcomes and rely heavily on the relational aspects of contracting. There is also found to be a lack of convincing cross-sectoral evidence of the impact of the models, particularly in relation to improving co-ordination across organisations. The paper questions the reconciliation of the use of these new contractual models in settings such as the English NHS with the requirements of public sector governance for transparency and accountability. The models serve to highlight the problems inherent in the New Public Management/post New Public Management agenda of the transfer of risk away from commissioners of services in terms of transparency and accountability.

**Keywords**

Public sector reform, National Health Service (NHS), outcome based contracting, alliance contracting, prime contracting

# **New models of contracting in the public sector: a review of alliance contracting, prime contracting and outcome based contracting literature**

## **Introduction**

The co-ordination of public services is an enduring challenge (Webb, 1991). The current drive to improve co-ordination in today's public services can be understood as a response to the New Public Management (NPM) reforms of the 1990's. In many cases, in those parts of the public sector which have adopted a NPM approach, the provision of services is contracted by the state to diverse agencies (both state owned and independent), while the state specifies the output of services and allows the providers high levels of discretion about how these overarching aims are to be achieved (Hood, 1991, Klijn, 2012). The subsequent emerging post-NPM agenda seeks to achieve inter-organisational collaboration in a public service environment in which organisational diversity and independence has been encouraged, through the introduction of mechanisms to reduce the fragmentation of services (Bouckaert et al., 2010, Perri 6 et al., 2002), such as the facilitation of team building, and the development of a unified sense of values, trust and collaboration (Ling 2002).

One group of mechanisms which may enable public sector co-ordination in post-NPM systems is new models of contracting, three of which, 'alliance contracting', 'prime provider contracting' and 'outcome based contracting', are the subject of this paper. These models appear to address both the NPM and post-NPM agenda. They satisfy the NPM agenda by offering contractual mechanisms which allow commissioners to specify the output of a service, reward providers for the attainment of goals rather than for effort, and encourage providers to devise ways to attain commissioner set goals. They address the requirements of the post-NPM agenda by using contractual mechanisms to incentivise providers to work together.

The interest in these contractual models is particularly strong in relation to the delivery of health services in the English NHS. The co-ordination of health services is both complex and important. This complexity is due largely to the volume and range of organisations and professionals involved in

planning and providing services affecting the population's health, including those across NHS acute, community and mental health services, but also in services outside the NHS, such as social services and the third sector. This range has been increased by the policy drive from around 2002 onwards to further increase the diversity of organisations providing NHS services (Department of Health, 2002). The achievement of well co-ordinated services is clearly necessary as patient pathways for a single condition may necessitate treatment from a variety of settings. Over the past few years English healthcare policy makers, commentators and interest groups have highlighted the potential of new contractual models to both improve the integration of services and allow better use of resources (Addicott, 2014, NHS England, 2014, NHS Commissioning Assembly, 2014, Corrigan and Hicks, 2001). Commissioners are not required to use these models to commission services, but their use is advocated. The most recent strategy document, *Five Year Forward View*, suggests that integrated working between separate organisations is developed, which should be facilitated through contractual mechanisms such as alliance, prime provider and/or outcome based contracts (NHS England, 2014), and NHS England has produced guidance regarding template alliance and prime contract agreements. The extent to which the models are being used in the NHS is not clear, however case study examples cited in policy reports (e.g. Addicott, 2014) indicate that they tend to be used in relation to complex services which span organisations, and focus on a specific population (e.g. older people) or care pathway (e.g. cancer).

Whilst little is known about the operation of these models in the English NHS, they have been widely used in other settings. The literature concerning these models constitutes important evidence about how they function and their capacity to address the dual agenda of both incentivising providers to achieve commissioner-defined outputs and encouraging co-ordination between diverse providers. This paper presents a literature review of the international evidence concerning the characteristics of these new contractual models, the process of their implementation, and their impact. This evidence is drawn from health and welfare services internationally but also other sectors such as construction and defence, where such contracts have been used more extensively. Using contractual theory, the

paper considers the use of these contractual models in the English NHS, and the implications of the models for the governance of public services generally in light of the NPM and post-NPM regimes.

## **Methods**

The literature search focused on three models: alliance contracting, prime provider contracting and outcome based contracting. Whilst, in practice, outcome based contracting is often used as a mechanism within the alliance and prime models, it can function as a standalone contractual model and it exists as a separate theoretical model with a separate empirical literature. The search strategies used in this literature review consisted of an initial background search to gain a feel for the literature, including the characteristics of the models and key theoretical concepts, followed by a database review, a Google scholar search and, finally, snowballing from references. The literature review took a purposive sampling strategy: literature was selected for inclusion based on relevance to the specific research question (learning about the contractual models which could be applied to the English NHS) rather than absolute criteria of methodological characteristics or rigour. This search method was considered apt given the scarcity of relevant empirical studies identified in the background search. The search was not restricted to specific dates. Four databases were selected to reflect a range of disciplines (Abi-inform, Web of Science, Academic Search Complete, Business Source Premier), and searched for a combination of keywords based on the terms 'alliance based contracting', 'prime provider contracting' and 'outcome based contracting'. The inclusion criteria consisted of primary quantitative and qualitative research published studies, or reviews of primary quantitative and qualitative research published studies, and theoretical literature, written in the English language, for which the full text was available. Alongside academic papers, the review included 'grey' literature such as reports detailing relevant policy initiatives and unpublished doctoral theses.

Literature relating to 'pay for performance' in health care was not included. There are a number of existing reviews of pay for performance schemes in health care (e.g. Van Herck et al., 2010, Emmert

et al., 2012, Lagarde et al., 2013, Ogundeji et al., 2016). These payment systems share similarities with the outcome based model, but differ in their general emphasis on payment for specific provider *behaviours* and the attainment of *performance targets* rather than the achievement of overall service *outputs* across organisations. The range of schemes within pay for performance can differ widely from the outcome based contracting approach to include payments to individuals and teams in addition to payments made to organisations (for example paying individuals or teams on a 'Fee for Service' basis which reimburses providers for a specific service or activity). Due to the caution which should therefore be used when applying findings from pay for performance literature to the consideration of outcome based contracting, it was decided to exclude the literature from this review.

Literature relating to Accountable Care Organisations (ACOs) was also excluded from this review. Whilst ACOs make use of prime and outcome based contracting approaches these are deployed within a significantly different environment in which, for example, providers form a single legal entity (Barnes et al., 2014).

706 documents were identified through the database search. These were reduced to 26 based on relevance following a review of article title and abstract. Google search and snowballing from references identified 49 further relevant documents. 66 documents were included in the final review following the removal of duplicates. Five literature reviews relating to the use of the new contractual models in industry were identified (Selviaridis and Wynstra, 2015, Chen et al., 2012, Hypko et al., 2010, Bemelmans et al., 2012, Finn, 2011). Where the literature review presented findings which were relevant to this review these have been cited as the literature review itself, and individual papers have not been accessed. Appendix 1 details the empirical studies included in this literature review.

The literature identified by this review suggests that alliance contracting, prime contracting and outcome based contracting are undertheorised areas. Much of the literature is normative in basis, and does not consider issues from a theoretical perspective, and does not give empirical evidence (Gallet

et al., 2015, O'Flynn et al., 2014, Chen et al., 2012, Buchanan and Klinger, 2007). A recent growing literature is concerned with identifying the applicability of these models to the NHS in the light of the current policy literature (e.g. Billings and Weger, 2015, Addicott, 2014).

### **Overview of models**

Alliance contracting, prime provider contracting and outcome based contracting are conceptually distinct, but share the same basic rationale which is to transfer a proportion of the risk associated with substandard performance from the commissioners to the providers of services and, in doing so, seek to incentivise providers to find innovative ways to achieve the aims of the commissioner. Where the commissioner's aim relies on the inputs of multiple organisations, these organisations are incentivised to co-operate with each other. Alliance and prime contracting models achieve this by seeking to share (some or all) financial risk between a group of providers (and, in the case of alliancing, also commissioners). Outcome based contracts (which may be put into place in conjunction with alliance or prime contracting, or may, in principle, be used in a contract with a single provider) specify outcomes in addition to processes. A proportion of the payment to the provider will be dependent on achieving the specified outcomes.

The key distinguishing features of each of the models are as follows, and are summarised in table 1 below.

TABLE 1 ABOUT HERE

Alliance contracting, also known as 'alliance partnering', 'pure alliance' or 'project alliance', is distinguishable from other partnership approaches due to the use of a single, legally enforceable, alliance contract between the commissioner of the service, and the organisation(s) delivering the project, to achieve unity of purpose between parties through the establishment of joint accountability (Chen et al., 2012). Approaches such as alliance contracting which aim to overcome the 'adversarial nature' of traditional contracting (Jefferies et al., 2014) have been prominent in the construction

industry since the 1990s. The contract includes a risk/reward shared incentive structure which states the division of financial rewards and penalties according to a fixed pre-agreed ratio between parties to reflect performance against targets. The performance of alliance partners is judged collectively, so partners, including the commissioner themselves, all win together or all lose together through a shared 'collective ownership of risks' (Rowlinson et al., 2006). The literature suggests that the 'owner' is a participant in the risk/reward structure. For example in a construction alliance contract, the owner would share the construction and design, sharing in cost overruns (Department of Infrastructure and Transport, 2011). The development of the relationship between alliance partners is an important part of alliance contracting, with an emphasis on co-production and relationship-building between the commissioner and the alliance partners. In place of using the written contract to resolve disputes, alliance partners are expected to resolve issues without recourse to the courts for dispute resolution, and contracts may include a no blame/no dispute clause, which excludes recourse to litigation (Rowlinson et al., 2006, Gransberg and Scheepbouwer, 2015, Chew, 2004, Chew, 2007), and unanimous decision making protocols (Davies, 2008).

In prime contracting the commissioner contracts with a provider for the delivery of a contract which is likely to span a number of providers. The prime contracting agent subcontracts with other providers to deliver the contract. Contracts are intended to have a 'black box' approach to allow providers flexibility and freedom in the achievement of outcomes (Finn, 2011). The model is based on the belief that commissioners should move away from micro managing complex supply chains, and that moving this responsibility to a lead provider will result in better integrated services (Corrigan and Laitner, 2012, Matthews and Parker, 1999, O'Flynn et al., 2014). There is evidence of the use of prime contracting in defence (Matthews and Parker, 1999, Pryke, 2006, Kebede, 2011, Ndekugri and Corbett, 2004), the construction industry (Bemelmans et al., 2012, Voordijk et al., 2000, Burtonshaw-Gunn and Ritchie, 2004, Rojas, 2008), and contracts for the provision of welfare services (Finn, 2011, Finn, 2012, Hudson et al., 2010, Gallet et al., 2015). In common with alliance contracting, albeit to a lesser degree, prime contracting emphasises the development of trusting and co-operative relationships between



contractual partners, both between the client and the prime contractor team (Defence Estates and Ministry of Defence, 2003, Kebede, 2011), and within the supply chain (Finn, 2012, p5).

Outcome based contracting is a contractual form which emphasises the achievement of outcomes rather than specifying the processes by which outcomes are to be achieved (Caldwell and Howard, 2014). Additionally outcome based contracting can be differentiated from other forms of contracting due to: the focus on the alignment of goals and incentives across supply chains; increased risk and rewards for suppliers as performance achievement is related to financial bonuses and penalties; an emphasis on the co-production of outcomes through customer/supplier interactions (Selviaridis and Wynstra, 2015). Outcome based contracting is often used in conjunction with other contractual models, such as alliance contracting and prime contracting models, but is also a standalone contractual models in its own right. Outcome based contracting may have varying degrees of relative importance within the contract dependent on the proportion of the overall payment which is dedicated to performance in relation to outcomes. Outcome based contracting is a common approach for 'business to government' contracts such as defence and infrastructure maintenance (Ng et al., 2009, Selviaridis and Wynstra, 2015), but is also a growing approach in 'business to business' contracting (Ng et al., 2009).

### **Contracting in public services and contractual theory**

This section summarises the main elements of contractual theory which are used to review the evidence concerning these new models of contracting. Contractual theory, drawn from economic, socio economic and socio legal fields aids the exploration of issues encountered in contractual relationships. Contracts are not simply a technical device which allow all aspects of performance to be specified and monitored, but are instruments which require analysis.

A fundamental characteristic of these new contractual models is the creation of incentives for service providers based on the allocation of risk. A contract is put in place when one party (a principal) desires an outcome but the activities to achieve this must be undertaken by another party (an agent). All

contracts carry the risk that the agent will act in their own interests rather than those of the principal. Whilst many contracts monitor agent performance against the contract to ensure the agent is acting in the principal's interests these new contractual models also use incentives to encourage the agent to achieve the outcome desired by the principal, as the principal rewards or punishes the agent for their performance in relation to the outcome the principal wishes to achieve. By focusing on the outcome, it is hoped that opportunistic agent behaviour such as withholding or distorting information (gaming), shirking, failing to fulfil promises and appropriation of others' assets (Parkhe, 1993), will be lessened.

Certain characteristics of the product, the organisations involved and the market itself can make the use of incentives to achieve the alignment of principal/agent objectives problematic, and increase transaction costs. Transaction costs refer to the cost of making exchanges, and consist of the costs of firstly, negotiating, specifying and drafting a contract (ex ante costs) and then secondly, monitoring and enforcing compliance with that contract (ex post costs) (Coase, 1937, Williamson, 1985). This is particularly so in the case of public services such as the NHS where objectives are multiple, may differ (or conflict) across stakeholders, and may therefore be hard to identify and measure. Furthermore the way to achieve objectives might not be certain as the link between action and outcomes is not clear, or because the achievement of outcomes may be out of the direct control of agents. The danger is that outcome measures will not be effective or that outcomes which are hard to measure will not be incentivised (Goddard et al., 2000). Indeed, the complexity of attributing and measuring outcomes in relation to public services has given rise to concerns regarding the possibility and practicality of using outcome based payment in relation to public services (Lagarde et al., 2013, Perrins, 2008).

Some of the aforementioned difficulties with contracting have been observed to be mitigated in practice. Whilst the contract document endeavours to deal with future arrangements, it is impossible to foresee all possible contingencies and eventualities. Thus, contracts cannot be 'complete' (Williamson, 1985) or entirely 'discrete' (MacNeil, 1978, Vincent-Jones, 2006), and the contract is, to a degree, a balance between discrete and relational norms. In the relational element of the contract,

parties rely on 'relational' norms such as trust, flexibility, solidarity and reciprocity to sustain the contractual relationship. Trust in particular is acknowledged to be important to partnership working, as a mechanism which enables the management of risk (Luhmann, 1979, Sako, 1998, Nootboom, 2002). These contractual models, particularly alliance contracting and prime provider contracting, rely heavily on the relational aspects of the contractual relationship.

These concepts form the framework through which the applicability of these models to the NHS will be explored. The analysis consists of three sections. Firstly, an analysis of the evidence relating to the process of establishing the contractual arrangements. Secondly, what is known about the impact of these arrangements, particularly in light of the aims articulated by policy makers. Thirdly, an examination of the fit of these models with the requirements of public sector governance issues.

## **Analysis of the literature**

### *Negotiation and specification of new contractual forms*

The evidence relating to the negotiation and specification of alliance, prime provider and outcome based contracts suggests firstly, that the process of negotiation and specification is likely to be costly and secondly, that there is likely to be a substantial reliance on relational norms between contractual parties.

The negotiation and specification of outcomes involves significant effort on the part of both the principal and agents where an outcome based structure is used. The establishment of outcome based measurement has been found to necessitate the development of new information systems, requiring investment in bespoke data collection and analysis, development of measurement methodologies and monitoring systems (Selviaridis and Wynstra, 2015). It may also demand a more rigorous contract specification thereby highlighting pre-existing issues concerning contract quality, requiring remedial action such as an analysis of the services and outputs which are required from contractors (Hannah et al., 2010, Arthur and Kennedy, 2014, Laurent, 1998). It should be noted that, whilst theory would

suggest that these systems incur 'high' transaction costs, it is not possible, given the weakness of the evidence in this regard, to empirically assess whether these transaction costs are higher than those for other contractual forms. Nevertheless, these likely requirements indicate that that considerable transaction costs will be incurred in the *ex ante* period where outcome based contracting is used. However, in mitigation it should also be noted that these transaction costs may be recouped by cost savings created during the life of the contract (Langfield-Smith, 2008). In the case of prime contracting the transaction costs of negotiating and managing sub-contracts can be greatly reduced for the commissioner by moving this role to the prime contractor (Finn, 2011).

Whilst contractual theory suggests that the identification and agreement of outcomes is difficult to achieve in relation to public services, much of the literature does not address directly the issue of finding and agreeing the right outcome measures directly. However the literature does suggest that the negotiation and specification of outcomes should be seen as an ongoing and iterative process, beyond the contract specification (Arthur and Kennedy, 2014, Hannah et al., 2010, Gelderman et al., 2015). The effective deployment of incentives depends upon the accurate setting of thresholds. Theory suggests the full or partial transfer of risk is a significant motivator of behaviour, and the evidence suggests that risk transfer is significant when pure outcome based contracts are deployed (Martin, 2007). However, suppliers may well be reluctant to agree to contracts fully linking payment to performance due to the risk of non-payment, and risk premium payments and rewards linked to milestones may be needed to overcome this (Selviaridis and Wynstra, 2015). Difficulties specifying outcomes, particularly in relation to public services, may further weaken the incentive structure. One example of outcome based contracting in relation to public sector services suggests that outcomes were informally respecified during the contractual period when providers were unable to meeting them (Hudson et al., 2010).

The limits of the written contract to pin down and agree outcome based performance 'up front', suggests that these models may instead rely on relational norms to steer the contract, and to manage

risks which cannot be controlled in the written contract. The reliance on relational norms is explicit in the alliance contracting model, which is seen as 'a relationship based contractual arrangement' (Love et al., 2010). Many of the success factors identified in the alliance literature are relational in nature such as developing a leadership enriched culture, establishing top management support, and dedicating adequate resources to this end (Love et al., 2010, Davies, 2008). It is normal practice in the formation of alliance contracts for the alliance partners to participate in a 'pre-alliance' period after the partners are selected and before the contract commences. During this period the terms of the written elements of the contract are agreed but also partners work together to establish an 'alliance perspective' by undertaking activities which enhance goodwill trust (Langfield-Smith, 2008). An important element in this regard is the acceptance that many issues will be resolved during the performance of the contract, rather than as part of the written contract.

Although it is expected that prime provider contracting also relies on relational norms due to the ongoing specification of performance this is not recognised to any great degree in the literature. This is particularly interesting as relationships between prime contractors and subcontractors can become strained if risk and cost pressure is passed down the supply chain (Matthews and Parker, 1999, Gallet et al., 2015, Finn, 2011). Distrust may occur between prime and sub-contractors due to the perception that prime contractors are profiting from the contracts at the expense of sub-contractors (Gallet et al., 2015, Maddock, 2013, Matthews and Parker, 1999, Finn, 2011).

The literature relating to prime contracting and outcome based contracting suggests that both are susceptible to opportunism. A possible negative effect of incentive payments for outcomes is the encouragement of gaming (Frumkin, 2001, Jacob and Levitt, 2003). Evidence suggests that outcome based contracting, including models which combine prime and outcome contracting, can lead to gaming activities such as 'cherry picking' of easier clients (Hudson et al., 2010), data recording irregularities (i.e. over/under reporting) (Lu and Ching-to Albert, 2006, Caldwell and Howard, 2014), poor quality service (Hannah et al., 2010) and the skimping of service provision (ibid). In relation to

prime contracting, there are concerns that the scope for opportunistic behaviour is exacerbated by the 'hands off' approach adopted by the commissioner. However, the literature did not include any empirical observations relating to this concern. It is also noted that incentivisation and regulation can be tailored to mitigate for gaming, such as for example requiring providers to accept all referrals in order to prevent cherry picking (Finn, 2011).

The aspects of alliance contracting which set it apart from other types of partnership working (i.e. the emphasis on risk sharing) may reduce the scope for opportunistic behaviour, and there is some evidence that this is successful (Laan et al., 2011). Whilst there may be less opportunistic behaviour within the alliance contracting relationship, concerns have been raised, in the light of project underruns against the target outturn cost, that there is a temptation at the start of the contractual process for agents to overestimate the costs involved (Love et al., 2010).

#### *The impact of new contractual models*

The literature is surprisingly light on evidence relating to the benefits of these new contractual approaches, and a number of studies conclude that it is difficult to draw any conclusions in this regard due to difficulties with attribution and measurement (Caldwell and Howard, 2014, Buchanan and Klinger, 2007, Henneveld, 2006, Bresnen and Marshall, 2000, Love et al., 2010). This may reflect the complexity of these contractual models and of the environment in which they are deployed, which leads to difficulties in directly attributing changes in performance to these models. Some of the improvements achieved such as the financial benefits of improved risk management are difficult to quantify (Matthews and Parker, 1999), and the impact of the contractual model may not be immediately discernible (Finn, 2011).

A prominent benefit which is anticipated in relation to the use of these new contractual models is increased integration of services. Interestingly, the literature does not directly address the issue of whether integration is increased. Chen et al. (2012) found evidence that alliance contracting led to

various benefits such as a reduction in capital costs, the development of innovations, improved relationships between contractual partners and improvement in non-cost outcomes (such as enhanced reputations and improvement of competitive advantage), all of which may be related to improved integration, but are not synonymous with it. The prime provider literature includes a small number of studies that suggest sharing of good practice occurs amongst supply chain members (Lane et al., 2013) and that there is better co-ordination of services as a result of the prime provider approach (Muir et al., 2010), however equally this literature refers to tension and mistrust between prime and sub contractors. On balance, given that improved integration is a key perceived benefit for both alliance contracting and prime provider contracting, there is a lack of empirical evidence to support this. Indeed Caldwell and Howard (2014), in their review of procuring for outcomes in the UK defence sector using alliance arrangements, specifically warn against the implication that contracting for performance does away with intra- and inter organisational silos, such as budgetary silos and lack of inter service information sharing.

The evidence base for other advantages of the new contractual models is also under-developed and lacking in rigour. There is some evidence that prime contracting can reduce costs (Ndekugri and Corbett, 2004). Evidence from UK Ministry of Defence pilot prime contractor construction projects suggests benefits of over 70% increase in labour productivity, a 25% reduction in construction time, reduced materials wastage and a reduction in through life costs (Holti et al., 2000). The UK Department of Work and Pensions prime provider programme was also found to deliver cost savings (Lane et al., 2013), however there was also evidence that the incentive design in the contract led to under-serving of hardest to place groups, especially those on disability benefits (Lane et al., 2013). The alliance contracting literature reports that many construction projects were completed within the target costs and timescales using alliance contracting principles (Gransberg and Scheepbouwer, 2015). However, there is some scepticism regarding reported cost savings in particular in the alliance contracting literature from the construction sector due to the practice of alliance partners (over) estimating their capital expenditure requirements (Love et al., 2010, Chen et al., 2012). Furthermore any benefits may

be due to the implementation of good practice project delivery methods and the identification of good quality contractors rather than any elements inherent in the contractual models themselves (Bresnen and Marshall, 2000, Buchanan and Klinger, 2007, Davies, 2008).

A further benefit cited for these new contractual models is that they lead to improvements in the quality of services, and again the evidence base in this regard is not convincing. The evidence concerning instances of opportunism and gaming suggests that the quality of services may not be consistent. One route to improving service quality anticipated for these models was the development of innovative approaches by providers. Evidence suggests that there may be limited incentives for innovation (Langfield-Smith, 2008), and other priorities such as efficiency savings may take priority (Hudson et al., 2010).

#### *Risk and governance*

A third distinguishable theme emerging from the literature, in addition to the implementation and impact of these new contractual models, concerns public sector governance. The transfer of risk and accountability from commissioner to provider inherent to varying degrees in these models is held to be in tension with public sector governance objectives including accountability, integrity and transparency (Davies, 2008, O'Flynn et al., 2014, Gallet et al., 2015). The notion that risk can ever fully be transferred from principal to agent in any context is itself subject to debate, as responsibility for the contract reverts to the principal should the agent fail mid programme (Caldwell and Howard, 2014). This leads to concerns about a mismatch of risk and accountability, where those parties (assumed to be) carrying the risk are not ultimately accountable for failure. This concern is, of course, particularly accentuated in relation to public services where principals have a statutory responsibility for the provision of services to the population, and therefore retain ultimate accountability for service failures (Doerr et al., 2005). One possible response where commissioners retain accountability may



be that operational risk transfer may be jeopardised (Selviaridis and Wynstra, 2015), and indeed there is limited evidence that this has occurred in the public sector in practice (Hudson et al., 2010).

There are a number of specific issues relating to public sector governance identified in the literature. The literature identifies issues of accountability caused by the 'distance' of the commissioner from the provision of services, particularly in relation to prime provider and outcome based contracting, which is a necessary by-product of the transfer of full or partial responsibility for performance from commissioner to provider. The literature articulates a number of related concerns. Firstly, it is feared that prime contractor models can degrade the expertise of the commissioner, leading to information asymmetry between the commissioner and the prime providers, exacerbated by the transfer of assets, knowledge and skills, thereby weakening its ability to identify shortcomings in the prime contractor's performance, and to regain ownership and control of the contract should the prime contractor fail (Kebede, 2011, Finn, 2011). There is a risk that the commissioner becomes over reliant on a limited number of organisations who can act as prime providers, resulting in a 'hostage' situation (O'Flynn et al., 2014, Kebede, 2011). Concerns are also raised regarding the selection of subcontractors, where there is perceived to be a need for the principal to retain an oversight of and control over the subcontractors who are selected for reasons of security (Matthews and Parker, 1999) or to maintain a diverse delivery network (Finn, 2012).

Alliance contracting represents a sharing of risk between all alliance partners, including the commissioner (Arthur and Kennedy, 2014) and which is also problematic when considering accountability. Under a traditional contract, specific responsibility and risk is allocated to individual parties, together with the legal consequences for individual failure (Langfield-Smith, 2008). The alliance contract, however, suggests a collective ownership of the alliance project among partners, and a jointly shared risk, creating potential uncertainty about where accountability lies in the event of under or poor performance of a single alliance partner (Davies, 2008). The nature of public services

suggests that the individual organisations within the alliance should be held to account for their poor performance, and it appears inappropriate, given the scarcity of financial resources, that an organisation should be unduly penalised for another's poor performance. The 'no-dispute' clause commonly included in alliance contracts appears to remove an important contractual mechanism which would in other contracts be used to signal when one party in a contract had serious concerns for instance relating to clinical performance.

Issues of integrity and transparency are also flagged in the literature in relation to the selection of both alliance partners and subcontractors in the prime provider model. The procurement of public services should adhere to principles of transparency to ensure appropriate use of resources and value for money. These principles are in potential tension with the common approach of the selection of alliance partners without price competition, and on the basis of criteria such as previous working relationships (Love et al., 2010). Further potential issues are related to the transfer of responsibility for the identification of providers from the commissioner in the prime provider model. It is suggested that prime contractors (when they are private sector organisations) may not be subject to the same procurement rules as public sector commissioners (Finn, 2011). Although the lack of competitive procurement processes is not forbidden in the selection of some service providers, reasonable assurances are required regarding the processes followed to satisfy regulatory bodies that the most suitable provider has been chosen. Indeed a complaint of this nature has been made in relation to the commissioning of NHS contracts previously (Monitor, 2015). Whilst the complaint was not upheld, it was clear that the commissioner was required to undergo a rigorous due diligence process to ensure that the selected provider would provide value for money (Sanderson et al., 2016).

These public sector governance risks do not have an evidential grounding in the literature, and indeed may be mitigated by safeguards. In the prime model, commissioners' distance may be mitigated if commissioners retain a stewardship role, through for example performance managers or co-located

Integrated Project Teams, or through the imposition of contractual safeguards which allow commissioner intervention in the case of poor performance (Kebede, 2011, Defence Estates and Ministry of Defence, 2003, Finn, 2011, Finn, 2012). Problems of transparency encountered in alliance contracts may be addressed by the introduction of price competition, and issues concerning shared risks may be mitigated by allocating specific risks to specific alliance partners (Davies, 2008).

## **Discussion**

This literature review explored the cross-sectoral evidence regarding alliance, prime and outcome based contracting in order to identify learning which could be applied to the use of these models in the English NHS concerning how the models function, their impact, and their relation to public sector governance objectives. An underlying agenda was to assess the suitability of the models to address the NPM and post-NPM agenda to both allow incentivisation and co-ordination of diverse providers of public services.

The literature was drawn from diverse sectors, including construction, defence, and service industries, and whilst there is much that is transferable to health services, there are likely to be areas of divergence in the operation of these models in health and non-health settings. These areas are discussed here as, firstly, differences relating to health as a product and, secondly, the wider institutional environment in the English NHS.

In relation to health services, a number of aspects of the new contractual models may be more problematic in health than in other sectors. Issues relating to the identification and agreement of outcome measures are not directly addressed by the cross-sectoral literature, but theory suggests this may be problematic to achieve in health where objectives may be multiple, may differ across stakeholders and therefore be hard to identify and measure. Opportunism may also assume greater significance in relation to health services. Unsurprisingly the evidence concerning opportunism came largely from studies of public service contracts e.g. (Hudson et al., 2010, Hannah et al., 2010),

reflecting concerns regarding in the potential impact of opportunism on the public sector priorities of equality of provision and equality of outcomes. Additionally, the cross-sectoral literature did not present convincing evidence concerning the potential of these models to achieve integration, an issue which is of central importance to the health sector.

Secondly, it is helpful to draw out differences relating to the wider environment in which NHS health services are delivered. It is clear that transaction costs, particularly those relating to alliance contracts, are front loaded. It appears likely that where these initiatives are introduced in cash poor public sector services such as health, the up front investment required of local commissioners and providers will act as a disincentive to the introduction of these models, or alternatively will lead to the introduction of potentially damaging short cuts in the process of contract negotiation and specification. Analysis of the failed 'UnitingCare' NHS contract in Cambridgeshire suggests that at least part of the failure was due to significant issues not resolved during the negotiation due to time pressures and confusion about which party was to bear the significant start up costs (National Audit Office, 2016). As the literature indicates, these models are particularly popular in sectors where risk is transferred from the public to private purse, such as the relatively widespread use of alliance contracting in the Australian construction industry (Rowlinson et al., 2006). The transfer of risk may become a less desirable project in relation to services such as the English NHS where despite an increasing diversity of providers, provision is still largely delivered by public sector organisations.

What emerges strongly from the literature that is transferable to the health sector, is that these models do not offer 'simple' solutions to the issue of achieving the co-ordination of diverse providers of public services. These contractual models encounter many of the relational issues which are acknowledged to be fundamental to existing contractual relationships in the provision of public services (Craig, 1994, Allen et al., 2014), and therefore do not in or of themselves provide a 'magic bullet' solution to issues which are faced in public service contracting. What may be an advantage of

these models however, particularly alliance contracting, above traditional contractual forms, is that the need to invest in the establishment of trusting relationships between parties is clearly acknowledged as fundamental to the success of the contract.

The consideration of these models in the light of public services has led to questions about their compatibility with the requirements of public service governance. These questions stem largely from the varying degrees of the transfer of risk from commissioner to provider which is inherent to these models, and concern whether it is feasible or advisable to transfer accountability for public services away from the bodies which are ultimately responsible for that service. The issues raised in this respect are not specific to the contractual models under discussion, but more generally, address issues inherent in the NPM and post-NPM agendas which seek to improve the provision of public services by giving more responsibility and freedom to diverse providers. Indeed, concerns about issues of accountability in relation to partnerships in post-NPM public sector are not new (e.g. (Christensen and Laegreid, 2012)). The evidence relating to these new contractual models highlights these enduring issues, and questions the feasibility of reconciling the NPM and post-NPM projects of diverse innovative provision and the co-ordination in public service provision, with the need to ensure that public services are accountable and transparent.

## **Conclusion**

Whilst there is strong interest in the potential of these new contractual models to achieve innovative partnership working across the diverse providers of public sector services, the evidence relating to their operation in diverse sectors to date suggests that their introduction to settings such as the NHS should proceed cautiously. Importantly, there is as yet no convincing cross-sectoral evidence of the impact of the models. Whilst the models may bring benefits, they also have costs which must be

considered, such as of agreeing and monitoring outcomes, and of investing in the establishment and sustenance of good relations between contractual partners. These issues notwithstanding there remain important questions about the reconciliation of the use of these new contractual models in the commissioning and provision of public services such as those in the English NHS and the requirements of public sector governance for transparency and accountability. The models can be viewed as enacting the NPM/post NPM agenda of the transfer of risk away from commissioners to providers of services, and the potential problems this brings in terms of transparency and accountability.

## Bibliography

- ADDICOTT, R. 2014. Commissioning and contracting for integrated care. London: King's Fund.
- ALLEN, P., HUGHES, D., VINCENT-JONES, P., PETSOUHAS, C., DOHENY, S. & ROBERTS, J. 2014. Public Contracts as Accountability Mechanisms: Assuring quality in public health care in England and Wales. *Public Management Review*.
- ARTHUR, R. & KENNEDY, J. 2014. Procurement and delivery of required performance: Case study. *Australian Journal of Multi-Disciplinary Engineering*, 11, 109.
- BARNES, A. J., UNRUH, L., CHUKMAITOV, A. & VAN GINNEKEN, E. 2014. Accountable care organizations in the USA: types, developments and challenges. *Health Policy*, 118, 1-7.
- BEMELMANS, J., VOORDIJK, H. & VOS, B. 2012. Supplier-contractor collaboration in the construction industry. A taxonomic approach to the literature of the 2000-2009 decade. *Engineering Construction and Architectural Management*, 19, 342-368.
- BILLINGS, J. & WEGER, E. 2015. Contracting for integrated health and social care: a critical review of four models. *Journal of Integrated Care*, 23, 153-175.
- BOUCKAERT, G., GUY PETERS, B. & VERHOEST, K. 2010. *The Co-ordination of Public Sector Organizations*, Basingstoke, Palgrave Macmillan.
- BRESNEN, M. & MARSHALL, N. 2000. Building partnerships: case studies of client-contractor collaboration in the UK construction industry. *Construction Management and Economics*, 18, 819-832.
- BUCHANAN, N. & KLINGER, D. 2007. Performance-based contracting: Are we following the mandate. *Journal of Public Procurement*, 7, 301-332.
- BURTONSHAW-GUNN, S. A. & RITCHIE, R. L. Developments in construction supply chain management and prime contracting. Proceedings of the 1st International SCRI Symposium, 2004 Oxford. Blackwell, 334-47.
- CALDWELL, N. & HOWARD, M. 2014. Contracting for complex performance in markets of few buyers and sellers The case of military procurement. *International Journal of Operations & Production Management*, 34, 270-294.
- CHEN, G., ZHANG, G., XIE, Y. M. & XIAO-HUA, J. 2012. Overview of alliancing research and practice in the construction industry. *Architectural Engineering and Design Management*, 8, 103-119.
- CHEW, A. 2004. Alliancing in delivery of major infrastructure projects and outsourcing services. An overview of legal issues. *International Construction Law Review*, 21, 319-355.
- CHEW, A. 2007. *Governments and project financiers may achieve better value for money in adopting alliancing as a form of delivery structure in delivering PPP projects in Australia (rather than the traditional risk transfer methods)*. Masters Research thesis, The University of Melbourne.
- CHRISTENSEN, T. & LAEGREID, P. 2012. Governance and administrative reforms. In: LEVI-FAUR, D. (ed.) *The Oxford Handbook of Governance*. Oxford: Oxford University Press.
- COASE, R. 1937. The Nature of the Firm. *Economica*, 4, 386-405.
- CORRIGAN, P. & HICKS, N. 2001. What organisation is necessary for commissioners to develop outcomes based contracts? The COBIC case study. *NHS, Right Care Casebook Series*.
- CORRIGAN, P. & LAITNER, S. 2012. Developing a powerful disruptive innovator to create integrated and accountable programmes of care. *Right Care Casebook Series*.
- CRAIG, G. 1994. *Administrative Law*, London, Sweet and Maxwell.
- DAVIES, J. P. 2008. *Alliance contracts and public sector governance*. Phd Thesis, Griffith University.
- DEFENCE ESTATES & MINISTRY OF DEFENCE 2003. Prime Contracting on the MOD Estate. Sutton Coldfield: Prime Contracting Initiative.
- DEPARTMENT OF HEALTH 2002. Delivering the NHS Plan : Next Steps on Investment, Next Steps on Reform. London: Department of Health.
- DEPARTMENT OF INFRASTRUCTURE AND TRANSPORT 2011. National Alliance Contracting Guidelines. Policy principles. Commonwealth of Australia.
- DOERR, K., LEWIS, I. & EATON, D. 2005. Measurement issues in performance-based logistics. *Journal of Public Procurement*, 5, 164-186.

- EMMERT, M., EIJKENAARA, F. & KEMTER, H. 2012. Economic evaluation of pay-for-performance in health care: a systematic review. *European Journal of Health Economics*, 13, 755-767.
- FINN, D. 2011. Sub-contracting in public employment services: Review of research findings and literature on recent trends and business models. *The European Commission Mutual Learning Programme for Public Employment Services*.
- FINN, D. 2012. Subcontracting in public employment services: the design and delivery of 'outcome based' and 'black box' contracts: analytical paper. *Working Paper*. The European Commission.
- FRUMKIN, P. 2001. Managing for outcomes: Milestone contracting in Oklahoma. Arlington, VA: The Pricewaterhouse Coopers Endowment for The Business of Government.
- GALLET, W., O'FLYNN, J., DICKINSON, H. & O'SULLIVAN, S. 2015. The Promises and Pitfalls of Prime Provider Models in Service Delivery: The Next Phase of Reform in Australia? *Australian Journal of Public Administration*, 74, 239-248.
- GELDERMAN, C. J., SEMEIJN, J. & DE BRUIJN, A. 2015. Dynamics of service definitions-An explorative case study of the purchasing process of professional ICT-services. *Journal of Purchasing and Supply Management*, 21, 220-227.
- GODDARD, M., MANNION, R. & SMITH, P. 2000. Enhancing performance in health care: a theoretical perspective on agency and the role of information. *Health Economics*, 9, 95-107.
- GRANSBERG, D. D. & SCHEEPBOUWER, E. 2015. Alliance contracting: evolving alternative project delivery *National Cooperative Highway Research Program*. Washington DC,: Transportation Research Board.
- HANNAH, G., RAY, M., WANDERSMAN, A. & CHIEN, V. H. 2010. Developing performance-based contracts between agencies and service providers: Results from a Getting To Outcomes support system with social service agencies. *Children and Youth Services Review*, 32, 1430-1436.
- HEALTH SERVICE JOURNAL 2016. Fear of competition rules stopped council pooling social care budget.
- HENNEVELD, M. 2006. Alliance contracting: Removing the boundaries for infrastructure delivery. *Annual conference of the Transportation Association of Canada*. Charlottetown, Canada.
- HOLTI, R., NICOLINI, D. & SMALLEY, M. 2000. *The Handbook of Supply Chain Management*. London: CIRIA & The Tavistock Institute.
- HOOD, C. 1991. A public management for all seasons? *Public Administration*, 69, 3-19.
- HUDSON, M., PHILLIPS, J., RAY, K., VEGERIS, S. & DAVIDSON, R. 2010. The influence of outcome-based contracting on Provider-led Pathways to Work. Department for Work and Pensions.
- HYPKO, P., TILEBEIN, M. & GLEICH, R. 2010. Clarifying the concept of performance-based contracting in manufacturing industries. A research synthesis. *Journal of Service Management*, 21, 625-655.
- JACOB, B. A. & LEVITT, S. D. 2003. Rotten Apples: An Investigation of The Prevalence And Predictors of Teacher Cheating. *Quarterly Journal of Economics*, 118, 843-878.
- JEFFERIES, M., JOHN BREWER, G. & GAJENDRAN, T. 2014. Using a case study approach to identify critical success factors for alliance contracting. *Engineering, Construction and Architectural Management*, 21, 465.
- KEBEDE, E. 2011. *The Application of Transaction Cost Economics to UK Defence Acquisition*. PhD, University of Manchester.
- KLIJN, E. H. 2012. Public Management and Governance: a comparison of tow paradigms to deal with modern complex problems. In: LEVI FAUR, D. (ed.) *The Handbook of Governance*. Oxford: Oxford University Press.
- LAAN, A., VOORDIJK, H. & DEWULF, G. 2011. Reducing opportunistic behaviour through a project alliance. *International Journal of Managing Projects in business*, 4, 660-679.
- LAGARDE, M., WRIGHT, M., NOSSITER, J. & MAYS, N. 2013. Challenges of payment-for-performance in health care and other public services - design, implementation and evaluation. London: Policy Research Unit in Policy Innovation Research, London School of Hygiene and Tropical Medicine.



- LANE, P., FOSTER, R., GARDINER, L., LANCELEY, L. & PURVIS, A. 2013. Work Programme Evaluation: Procurement, supply chains and implementation of the commissioning model. *Research Report No 832*. Department for Work and Pensions.
- LANGFIELD-SMITH, K. 2008. The relations between transactional characteristics, trust and risk in the start-up phase of a collaborative alliance. *Management Accounting Research*, 19, 344-364.
- LAURENT, A. 1998. Premium on performance. *Government Executive*, 6-17.
- LOVE, P. E. D., MISTRY, D. & DAVIS, P. R. 2010. Price Competitive Alliance Projects: Identification of Success Factors for Public Clients. *Journal of Construction Engineering & Management*, 136, 947-956.
- LU, M. & CHING-TO ALBERT, M. 2006. Financial Incentives and Gaming in Alcohol Treatment. *Inquiry - Excellus Health Plan*, 43, 34-53.
- LUHMANN, N. 1979. *Trust and Power*, Chichester, Wiley.
- MACNEIL, I. 1978. Contracts: adjustments of long-term economic relations under classical, neo-classical and relational contract law. *Northwestern University Law Review*, 72, 854-905.
- MADDOCK, S. 2013. The DWP Work Programme - the impact of the DWP procurement model on personal service innovation. *A MIOIR case study on public procurement and innovation*. University of Manchester.
- MARTIN, L. L. 2007. Performance-based contracting for human services: a proposed model. *Public Administration Quarterly*, 31, 130-151.
- MATTHEWS, R. & PARKER, J. 1999. Prime Contracting in Major Defense Contracts. *Defense Analysis*, 15, 27-41.
- MONITOR 2015. Investigation into NEW Devon CCGs commissioning of community services for adults with complex care needs in Eastern Devon: final report.
- MUIR, K., KATZ, I., EDWARDS, B., GRAY, M., WISE, S. & HAYES, A. C. 2010. The national evaluation of the Communities for Children initiative. *Family Matters*. Canberra: Australian Institute of Family Studies.
- NATIONAL AUDIT OFFICE 2016. Investigation into the collapse of the UnitingCare Partnership contract in Cambridgeshire and Peterborough. London: National Audit Office.
- NDEKUGRI, I. & CORBETT, P. Supply Chain Integration in Construction by Prime Contracting: Some Research Issues Proceedings of the RICS Foundation's International Construction and Building Research Conference, COBRA2004 7-8 September 2004, 2004 Leeds Metropolitan University.
- NG, I. C. L., MAULL, R. & YIP, N. 2009. Outcome-based contracts as a driver for systems thinking and service-dominant logic in service science: Evidence from the defence industry. *European Management Journal*, 27, 377-387.
- NHS COMMISSIONING ASSEMBLY 2014. Commissioning for outcomes: a narrative from and for clinical commissioners.
- NHS ENGLAND 2014. Five Year Forward View. London: NHS England.
- NOOTEBOOM, B. 2002. *Trust: Forms, Foundations, Functions, Failures and Figures*, Cheltenham UK and Northampton USA, Edward Elgar.
- O'FLYNN, J., DICKINSON, H., O'SULLIVAN, S., GALLET, W., CURRIE, K., PETTIT, M., PAGAN, A. & ROBINSON, T. 2014. The prime provider model. An opportunity for better public service delivery? *Social Policy Working Paper No. 18*. Brotherhood of St Laurence, University of Melbourne,.
- OGUNDEJI, Y., BLAND, J. & SHELDON, T. 2016. The effectiveness of payment for performance in health care: A meta-analysis and exploration of variation in outcomes. *Health Policy*, 120, 1141-1150.
- PARKHE, A. 1993. Strategic Alliance Structuring: A game theoretic and transaction cost examination of interfirm cooperation. *Academy of Management Journal*, 36, 794-829.
- PAWSON, R., GREENHALGH, T., HARVEY, G. & WALSHE, K. 2005. Realist review - a new method of systematic review designed for complex policy interventions. *Journal of Health Services Research & Policy*, 10, 21-34.

- PERRI G, LEAT, D., STOKER, G. & SELTZER, K. 2002. *Towards Holistic Governance: The New Reform Agenda*, Basingstoke, Palgrave.
- PERRINS, G. D. 2008. *An examination of performance based contracts to purchase social services from non-profit service providers* [Online]. Victoria, BC.: University of Victoria.
- PRYKE, S. D. 2006. Legal issues associated with emergent actor roles in innovative UK procurement: Prime contracting case study. *Journal of Professional Issues in Engineering Education and Practice*, 132, 67-76.
- ROJAS, E. M. 2008. Single versus Multiple Prime Contracting. *Journal of Construction Engineering & Management*, 134, 758-765.
- ROWLINSON, S., CHEUNG, F. Y. K., SIMONS, R. & RAFFERTY, A. 2006. Alliancing in Australia—No-Litigation Contracts: A Tautology? *Journal of Professional Issues in Engineering Education & Practice*, 132, 77-81.
- SAKO, M. 1998. Does trust improve business performance? In: LANE, C. & BACHMANN, R. (eds.) *Trust within and between organisations*. Oxford: Oxford University Press.
- SANDERSON, M., ALLEN, P. & OSIPOVIC, D. 2016. The regulation of competition in the National Health Service (NHS): what difference has the Health and Social Care Act 2012 made?. *Health Economics, Policy and Law*.
- SELVIARIDIS, K. & WYNSTRA, F. 2015. Performance-based contracting: A literature review and future research directions. *International Journal of Production Research*, 53, 3505-3540.
- VAN HERCK, P., DE SMEDT, D., ANNEMANS, L., REMMEN, R., ROSENTHAL, M. & SERMEUS, W. 2010. Systematic review: Effects, design choices, and context of pay-for-performance in health care. *BMC Health Services Research*, 10.
- VINCENT-JONES, P. 2006. *The New Public Contracting: Regulation, Responsiveness, Relationality*, Oxford, Oxford University Press.
- VOORDIJK, H., DE HAAN, J. & JOOSTEN, G.-J. 2000. Changing governance of supply chains in the building industry: a multiple case study. *European Journal of Purchasing & Supply Management*, 6, 217-225.
- WEBB, A. 1991. Co-ordination: a problem in public sector management. *Policy & Politics*, 19, 229-241.
- WILLIAMSON, O. 1985. *The Economic Institutions of Capitalism*, New York, Free Press.

TABLE 1: Key characteristics of contractual models

Model	Defining characteristics	Sectors from which literature drawn
<b>Alliance contracting</b>	<ul style="list-style-type: none"> <li>• Single alliance contract between the commissioner of the service and the organisations delivering the project</li> <li>• Risk/reward incentive structure shared across alliance partners giving collective ownership of risks (win together/lose together model)</li> <li>• Recruitment of alliance partners without competitive tender process</li> <li>• Emphasis on coproduction, facilitated by governance structures and relationship building activities to encourage collective responsibility</li> <li>• Contract may include no dispute clause</li> </ul>	<ul style="list-style-type: none"> <li>• Construction, public services, aerospace</li> </ul>
<b>Prime Provider contracting</b>	<ul style="list-style-type: none"> <li>• Commissioner contracts with a single (prime) provider for the delivery of a service likely to span a number of organisations</li> <li>• Prime contractor has responsibility for managing the supply chain, including the commissioning sub contractors</li> <li>• Prime contractor may also provide some services</li> <li>• Prime contractor often paid on an outcome based model</li> </ul>	<ul style="list-style-type: none"> <li>• Defence, construction, public services, health</li> </ul>
<b>Outcome based contracting</b>	<ul style="list-style-type: none"> <li>• Contract pays on the achievement of outcomes (or proxy measure)</li> <li>• Commonly use risk/reward structure to reward parties in accordance with their efforts</li> <li>• May be used in conjunction with other contractual models such as alliance contracting and prime contracting</li> </ul>	<ul style="list-style-type: none"> <li>• Defence, construction, ICT, welfare services, health services</li> </ul>

**Appendix 1 - Empirical papers included in the review**

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Model</b>	<b>Sector</b>	<b>Study type</b>
Arthur, R. & Kennedy, J.	2014	Procurement and delivery of required performance: case study	Outcome based	Defence/construction	Qualitative
Bresnen, M. & Marshall, N.	2000	Building partnerships: case studies of client-contractor collaboration in the UK construction industry	Outcome based	Construction	Qualitative
Buchanan, N. & Klinger, D.	2007	Performance-based contracting: Are we following the mandate?	Outcome based	Defence/maintenance	Qualitative
Burtonshaw-Gunn, S.A. & Ritchie, R.L.	2004	Developments in construction supply chain management and prime contracting	Prime	Construction	Qualitative
Caldwell, N. & Howard, M.	2014	Contracting for complex performance in markets of few buyers and sellers. The case of military procurement	Outcome based	Defence	Qualitative
Chew, A.	2007	Governments and project financiers may achieve better value for money in adopting alliancing as a form of delivery structure in delivering PPP projects in Australia	Alliance	Construction	Qualitative
Clifton, C. & Duffield, C.	2006	Improved PFI/PPP service outcomes through the integration of Alliance principles	Alliance	Construction	Quantitative
Davies, J.P.	2008	Alliance contracts and public sector governance	Alliance	Public sector	Qualitative
Gates, L. et al	2005	Outcomes-based funding for vocational services and employment of people with mental health conditions	Outcome based	Employment services	Mixed methods
Gelderman, C.J. et al	2015	Dynamics of service delivery: an explorative case study of the purchasing process of professional ICT services	Outcome based	ICT services	Qualitative
Gransberg, D.D. & Scheepbouwer, E.	2015	Alliance contracting: evolving alternative project delivery	Alliance	Construction	Qualitative

Guo, L. & Ng, I.	2011	The co-production of equipment-based services: An interpersonal approach	Outcome based	Defence	Qualitative
Hannah, G. et al	2010	Developing performance-based contracts between agencies and service providers: results from a Getting to Outcomes support system with social service agencies	Outcome based	Social Services	Mixed methods
Hauck, A.J. et al	2004	Project alliancing at National Museum of Australia : the collaborative process	Alliance	Construction	Qualitative
Hosseinian, S.M. & Carmichael, D.G.	2013	Optimal gainshare/painshare in alliance projects	Alliance	Construction	Quantitative
Jacob, B.A. & Levitt, S.D.	2003	Rotten apples: an investigation into the prevalence and predictors of teacher cheating	Outcome based	Education	Quantitative
Jefferies, M. et al	2014	Using a case study approach to identify critical success factors for alliance contracting	Alliance	Construction	Qualitative
Jefferies, M. et al	2006	Relationship management in the Australian construction industry: a catalyst for cultural change	Alliance	Construction	Qualitative
Kebede, E.	2011	The application of transaction cost economics to UK defence acquisition	Prime	Defence	Qualitative
Koolwijk, J.S.J.	2006	Alternative dispute resolution methods used in alliance contracts	Alliance	Construction	Qualitative
Laan, A. et al	2011	Reducing opportunistic behaviour through a project alliance	Alliance	Construction	Qualitative
Lane, P. et al	2013	Work programme evaluation: procurement, supply chains and implementation of the commissioning model	Outcome based/prime	Employment services	Mixed methods
Langfield-Smith, K.	2008	The relations between transactional characteristics, trust and risk in the start-up phase of a collaborative alliance	Alliance	Construction	Qualitative
Love, P.E.D. et al	2010	Price competitive alliance projects: identification of success factors for public clients	Alliance	Construction	Qualitative

Lu, M. & Ching-To Albert, M.	2006	Financial incentives and gaming in alcohol treatment	Outcome based	Health	Quantitative
Maddock, S.	2013	The DWP work programme – the impact of the DWP procurement model on personal service innovation	Outcome based/Prime	Employment services	Qualitative
Mayer, K.J. & Treece, T.J.	2008	Unpacking strategic alliances: The structure and purpose of alliance versus supplier relationships	Alliance	Aerospace	Qualitative
Muir, K. et al	2010	The national evaluation of the Communities for Children initiative	Prime	Child services	Mixed methods
Ng, I.C.L. et al	2009	Outcome-based contracts as a driver for systems thinking and service-dominant logic in service science	Outcome based	Defence	Qualitative
Ng, I.C.L. et al	2013	Outcome-based contracts as new business model: The role of partnership and value-driven relational assets	Outcome based	Cross sector (equipment services)	Mixed methods
Pryke, S.D.	2006	Legal issues associated with emergent actor roles in innovative UK procurement: prime contracting case study	Prime	Construction	Qualitative
Randall, W.S. et al	2010	Evolving a theory of performance-based logistics using insights from service dominant logic	Outcome based	Cross sector	Qualitative
Rojas, E.M.	2008	Single versus multiple prime contracting	Prime	Construction	Quantitative
Rowlinson, S. et al	2006	Alliancing in Australia. No litigation contracts: a tautology?	Alliance	Construction	Qualitative
Selviaridis, K. & Normann, A.	2014	Performance-based contracting in service supply chains: a service provider risk perspective	Outcome based	Cross sector	Qualitative
Straub, A.	2010	Maintenance contractors acting as service innovators	Outcome based	Construction	Qualitative
Voordijk, H. et al	2000	Changing governance of supply chains in the building industry: a multiple case study	Prime	Construction	Qualitative