

PCP related initiatives

United Kingdom - National Health Service

The UK NHS has experience¹ undertaking PCP-like projects in the healthcare domain.

I. Examples of PCP-like projects undertaken by NHS

Figure 1 below shows typical examples of projects launched in 2009 by the NHS National Innovation Center (NIC). Examples of procurement needs addressed by such projects were²:

- Virtual veins (a virtual-reality training simulator revolutionising the way healthcare practitioners are trained in venepuncture.). Product avoids wrongly administered medication.
- One-hand syringe holder (holder which allows nurses to switch needles on syringes using only one hand, avoiding infection of the other hand).
- Clean room (isolation space in hospitals that is cheaper/easier to use than full quarantine, but still effectively limits hospital acquired infections)
- A disposable catheter that enables a minimally invasive procedure to treat varicose veins quickly and with little or no pain (removing need for overnight hospital stay)
- Non- invasive glucose meter (mobile device that enables to measure glucose level of diabetic patients on the spot without finger-sticking, just by touching the skin)

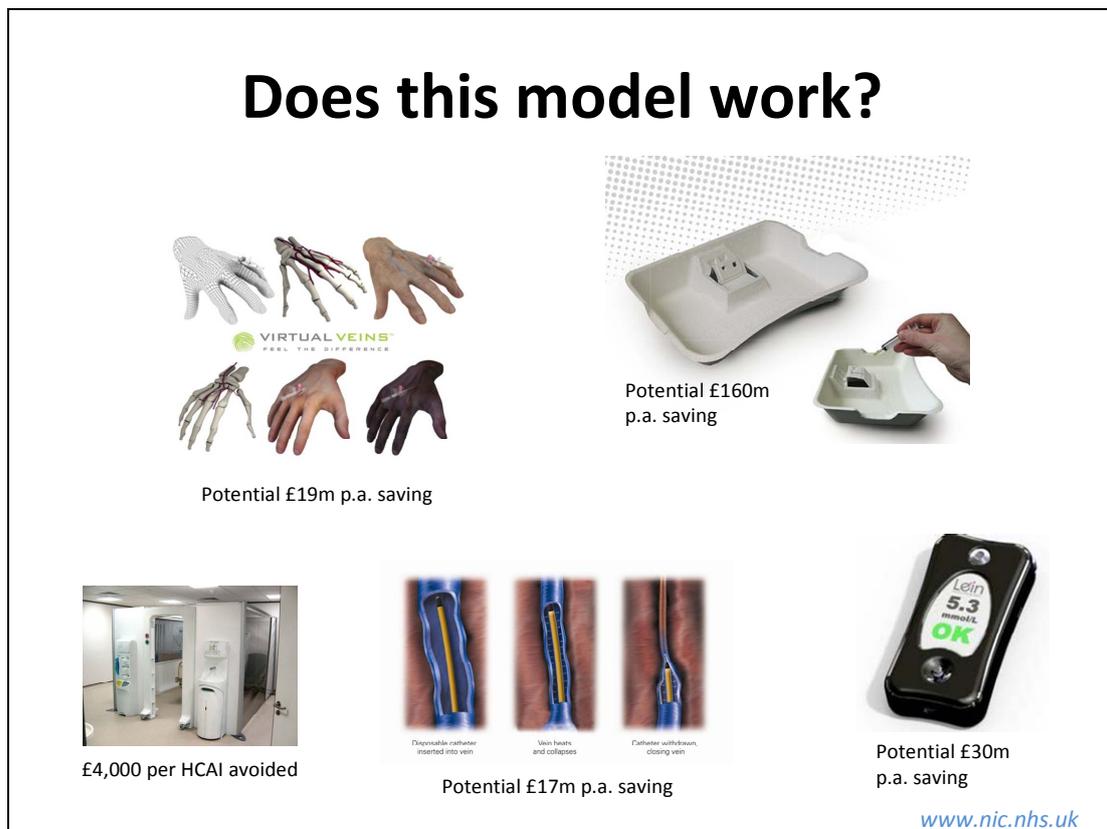


Figure 1: UK NHS examples of healthcare procurement needs addressed by PCP-like projects

¹ NHS PCP presentation on: <http://cordis.europa.eu/fp7/ict/pcp/nhs-nic-od-2010.pdf>

² More detailed info on specific NHS PCP-like cases: <http://showcase.nic.nhs.uk/SearchResults.aspx>

In 2009, the NHS National Innovation Center invested ~£3 Mio in the above set of PCP-like projects in healthcare. The value of these projects to NHS is that they improve the quality of the patient experience and generate significant cost savings to NHS (£236 Mio/year). In terms of value of these projects to the economy, the companies involved in these projects have been able to attract Venture Capital funding of £290Mio for wider product commercialisation.

II. NHS approach for dealing with innovation in public procurement

The NHS NIC uses the following model for bringing innovations to the market via PCP. An online tool is used to manage the interaction with suppliers during the different stages.

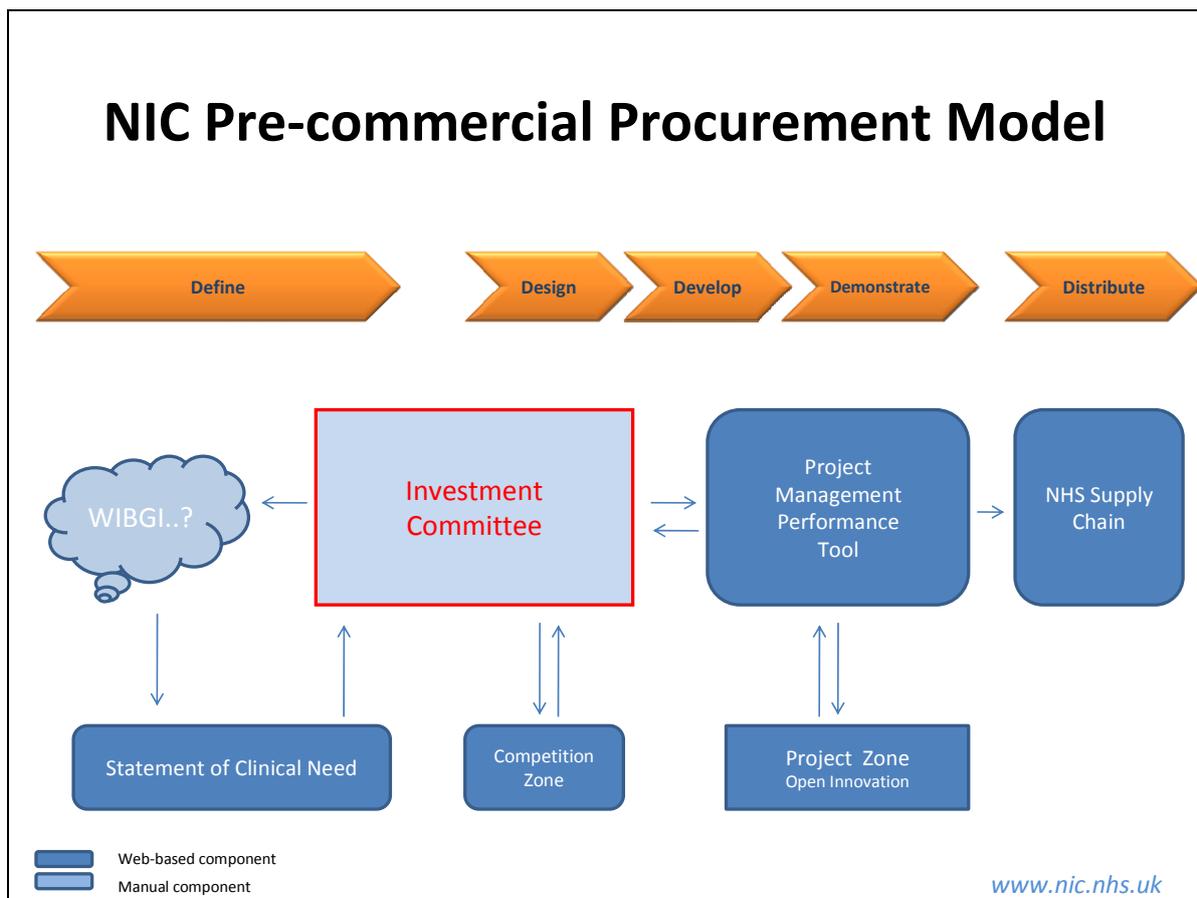


Figure 2: How PCP fits into the NHS NIC approach to dealing with innovation in public procurement: from the discovery/definition of needs, over the development of new solutions, finally up to deployment

Definition of clinical needs – WIBGI approach

The NHS NIC uses a formal process to identify, validate and rank clinical needs. The NHS NIC organises ‘Wouldn’t it be Great If...(WIBGI)’ workshops involving clinical teams from NHS healthcare settings (e.g. doctors, nurses in hospitals). During a WIBGI workshop, an expert facilitator works with the clinical team to identify, validate and rank-order their perceived clinical needs. During this workshop the clinical teams are challenged to think out-of-the-box (Think of the issue that is causing you the greatest discomfort / inefficiency in your daily work. Suppose you were Harry Potter, what would you wish magic could solve for you? Wouldn't it be great if magic could create me a solution for this ...). The list of needs that is obtained through this brainstorm exercise is then rank-ordered in terms of importance (e.g. in

terms of the size, scale and cost of the problem) into a formal document called the "statement of clinical needs".

Market positioning of clinical needs – stakeholder / industry consultation

The statement of clinical needs resulting from the WIGBI exercise is considered against published literature and published on the NHS NIC website to invite industry reactions to do a reality check of perceived innovation needs against the state-of-the-art of ongoing industry developments. This results in three possible alternatives for each ranked need:

1) There is technology already available in the market that can meet the need. In this case traditional procurement to buy an off-the-shelf solution is used.

2) There is no technology already available in the market that can meet the need, but NIC's horizon scanning activities generates evidence that it likely that there will be soon or that it could be soon if industry were aware of this requirement. In this case, the NIC will not engage in a PCP (the NHS will not procure R&D) but will publicise the need in the Statement of Clinical Needs section on the NIC website, thus affording industry the opportunity to address the need in the free market. In this case it's possible that the NHS starts a Forward Commitment Procurement (FCP) to provide the necessary market pull for industry to raise itself the required investments to bring the required innovations to the market. In a FCP procurement the contracting authority starts preparing itself to purchase the deployment of innovative solutions if the market can deliver a the innovative solution against clearly defined requirements in a specified time frame (typically 6 months to 1 year).

3) There is no technology already available in the market that can meet the need, and NIC's horizon scanning activities do not generate any evidence to indicate that there will be soon or that it would be soon developed by industry on its own resources if industry were aware of this requirement, but the horizon scanning activities indicate that there is still R&D needed to define/experiment with the technological and financial viability of various solution approaches that could potentially be used to address the need. In this case, where innovations can only be expected in the mid-to-long term and experimentation is still needed to check in how far the contracting Authority's functional/performance requirements can realistically be met by solution providers, the NHS will engage in a PCP to procure the R&D needed to get the desired innovative solutions developed and compare alternative solution approaches on their merits. In this case, the NIC will engage in a PCP via the Competition Tool on the NIC website.

Getting solutions developed for mid/long terms needs requiring R&D – PCP like approach

The NHS uses a stage-gated approach³ (design, develop, demonstrate) which challenges several suppliers to develop in competition alternative solution approaches for the clinical need to be addressed. The project tool/zone is used by NHS NIC to performance manage suppliers that working under an R&D procurement contract for them.

Working in a phased R&D contracting approach typically enables NHS to complete projects in 18 months: challenging a number of companies to design (6 months), prototype (6 months) and demonstrate (6 months) competing solution approaches to address concrete problems

³ Explanation about NHS PCP strategy on NHS website: <http://www.nic.nhs.uk/Pages/ApplyForFunding.aspx>

faced by clinicians e.g. in UK hospitals. This process has enabled NHS to quickly find solutions from new innovative solutions providers, in areas where traditional NHS procurement programs with established suppliers have been trying to find solutions for years without success.

Depending on level of involvement desired by NHS in managing the IPRs resulting from R&D commissioned by NHS, NHS NIC decides to either procure the R&D via a PCP contract where IPR ownership rights remain with suppliers (e.g. for complex solutions when protection/exploitation of IPRs requires very specialised technological knowledge of supplier that has developed the solution) or via an R&D procurement contract in which NHS retains ownership of IPRs (e.g. for more straightforward standalone design type innovations where IPR protection does not involve technologically complicated patents but more straightforward design rights). When choosing for a PCP type contract, the NHS NIC requests companies a financial compensation for leaving them the IPR ownership rights on their inventions commensurate with the size of the PCP contract. For the NIC, the setting for the size of a royalty payment or equity stake back to the NIC is achieved through a competitive process; to explain, as part of the tendering process, bidders compete to win a contract to deliver R&D services and it is in their submission that the bidder states the amount of money they require to deliver the R&D as well as the royalty payment or equity stake back to the NIC. On receipt and evaluation of the bids, then NIC either accepts or rejects each offer against criteria stated in the Invitation to Tender.

Successful bidders are awarded a contract from the NIC to deliver R&D services to develop a new innovation, as outlined in their tender submission. As part of the management of these contracts, suppliers must provide a regular update of their contracted work using the NIC's web-based Performance Management Project Tool. This tool enables both innovators and NHS project managers to track the performance of contracts, including achievement of milestones and the management of any risks and issues, as well as financial payments against the contracted service. Complementing this back-office system, suppliers are also expected to give regular updates on the progress of their innovation using the NIC's website resource called Project Tool. This tool enables open collaboration and also offers transparency of the NIC's PCP commissioned work.

Addressing short-term needs for which industry would invest itself to scale up near-to-market solutions to mass market needs in the presence of a clear customer deployment roadmap - FCP approach

Back in 2007 the Rotherham NHS Foundation Trust started a FCP procurement⁴ to find a solution for ultra-efficient lighting for hospital wards. This project later received some financing from the European Commission's Lead Market Initiative procurement networks support⁵, to extend the FCP project, under the name LCB-healthcare⁶ (Low Carbon Buildings for the Healthcare sector), to other hospital procurers from the Netherlands, Norway and Poland⁷. The project was triggered by the problem that healthcare buildings were too energy hungry to meet CO2 emission reduction targets. The UK's Learning Network for Sustainable Healthcare Buildings (SHINE) shows that the NHS alone already produces 3.4 million tons of CO2 every year.

⁴ <http://www.bis.gov.uk/assets/biscore/innovation/docs/c/11-997-case-study-innovative-ultra-efficient-lighting>

⁵ http://ec.europa.eu/enterprise/policies/innovation/policy/lead-market-initiative/files/case-3_en.pdf

⁶ <http://lowcarbon-healthcare.eu/newsitem/45>

⁷ <http://www.nuh.nhs.uk/ultralowcarbon/Documents/A%20New%20Procurement%20Approach.pdf>

The FCP procurement approach was chosen by NHS Rotherham Trust back in 2006 because a first generation of LED lights that had become available on the market, showed potential of significant energy savings but the production processes of these LED lighting solutions were not optimised/scaled up yet to meet the requirements for mass deployment in a hospital context (price too high, energy efficiency requirements not optimal yet, comfortable/indirect lighting intensity for hospital setting still to be optimised).

FCP is thus clearly used in cases that are closer to the market than when a PCP would be started: FCP can be used when either no R&D is needed to satisfy the procurers' innovation need (e.g. organisational type innovation) or when industrial R&D has already progressed up to such a level (e.g. via a PCP) that first end-products are nearly on the market or limited amounts of first end-products are already on the market, but which haven't been scaled up yet to meet mass market price/quality requirements. FCP is thus complementary to PCP; an FCP can be started near the end or after a PCP. FCP uses the tactic of announcing the joint intention to deploy innovation solutions expressed by a critical mass of buyers (can be a combination of public and private procurers) to trigger the supply side to make "themselves" the required investments to adapt/scale up their production chain to such a level that products meet the performance and price requirements that are needed to convince buyers to go for mass scale deployment.

The market consultation phase of the LCB healthcare FCP project revealed that the innovative goods and services needed to bridge the gap struggled to come into the market, because *demand* for these new goods and services was neither visible nor credible to potential suppliers – those buying goods and services simply tend to accept what is already available, and don't do enough to manage the supply chain to deliver the innovation that is really needed. Furthermore, the 'real end-customer' (the doctors and nurses serving the hospital patient) was several steps removed from the (understandably risk-averse) procurement professionals who specify and procure the goods and services for the hospital.

The FCP approach was chosen to address the following market failure / innovation deadlock situation: suppliers were technologically speaking able to produce innovative solutions but because there is no or too little clearly articulated demand, the solutions did not receive the investment required to get commercialised; and because solutions weren't available at a quality/price level acceptable for mass market consumption, customers don't demand them. Consequently, public sector objectives of energy efficient lighting solutions for hospital environments were compromised by lack of affordable and effective products and services to deliver them. This situation occurs in several markets where the demand side is very fragmented: this applies both to situations of fragmented private demand (environmental/energy solutions for which the main customer is the man on the street) and fragmented public demand (e.g. healthcare solutions for hospital market for example).

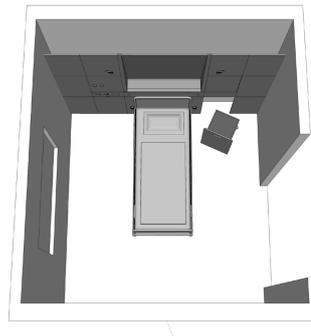
FCP is essentially a supply chain management tool in the sense that it helps to create a visible, credible demand for low carbon solutions. It offers a structured process for project planners to identify their unmet needs, inform the supply chain well in advance, convince suppliers that the plans are serious, and then purchase the solution when it delivers. This 'credible articulated demand' provides the necessary market pull to galvanize supply chains and unlock investment to deliver the requirement.

The strength of this approach has been to group public and private procurers with an interest in an innovation with the same e.g. energy efficiency characteristics. This 'bundling of future public and or private demand' is a key aspect of the approach. It leads to the 'critical mass' on the demand side that gives technology developers the necessary incentive to develop and commercialise new environmental friendly products. The buyers' group defines and publishes common requirements specifications setting out what they would need from the desired innovation, in terms of its function, characteristics and price, to be able to go for mass market deployment. In this first preparation/market consultation phase of the PPI, the group of buyers (facilitator is usually a public agent) liaises with candidate

innovators (via an open market consultation) to assess what the state-of-the art of industry developments is and whether they can meet the procurers' innovation requirements.

Once it is clear from the market consultation phase what level of innovation requirements can realistically be achieved by the supply side in the deployment time frame of the procurers, and what the required critical mass on the demand side is to trigger industry to make the necessary investments, the buyers' group posts openly in the European tender database a prior information notice publishing the groups' requirements specifications for the desired innovation and inviting suppliers to develop and come forward by a certain predefined date (e.g. 6 months or 1 year) to demonstrate whether the solutions that they have developed in the mean time are able to meet the set of requirements commonly defined by the buyers' group (this RFP can be accompanied by a test/certification event at the procurers' premises). Some well-known results of some of those large scale conformance testing / certification events that took place in the context of such sustainability PPI procurements are for example the certification and labelling of energy efficient appliances (light bulbs, washing machines, windows, heat pumps, refrigerators for public housing).

If the results of the test/certification event are positive, the buyers' group proceeds to the actual purchase for deploying large volumes of the final end-solutions. The actual acquisition of products, launched via open tender publication, can practically be done via joint procurement (one contract requesting large volumes of products to be delivered for several buyers) or several coordinated procurements (several smaller contracts per buyer, but all of them based on the joint specifications) which may be easier for SMEs to win contracts from. In the case of the LCB healthcare project, the competitive dialogue is used for the acquisition phase of the FCP.



As a result of this FCP⁴ the participating hospitals in the LCB healthcare project obtain both design quality improved lighting solutions in hospital rooms (increased storage, modular recyclable bio-dynamic lighting, patient control), reduced energy consumption (anticipated savings of 30%, equivalent to more than £4600 per 40 beds over 10 years), reduced maintenance costs (anticipated saving of 88% or more than £15000 per 40 beds over 10 years), reduced construction cost.