Should more hospitals in the Netherlands provide PCI without on-site cardiac surgery?

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One of the main conclusions of the recent recommendations of the Health Council of the Netherlands is that the serious problems with waiting lists and inadequate access to timely cardiac surgical interventions have disappeared. Therefore, policy makers as well as the medical profession have concluded that the number of hospitals providing cardiac surgery in the Netherlands should remain stable. In view of the fact that the number of percutaneous coronary intervention (PCI) procedures has increased to around 30,000 a year and in the coming years will further increase to around 40,000 PCI procedures per year, a variety of practical solutions and a wide variety of opinions have been put forward. In the current issue of the Netherlands Heart Journal a contribution from the cardiology group in Alkmaar is published. It describes the performance of emergency surgery after failed PCI in an interventional centre without on-site cardiac surgery.¹ This certainly strengthens the position of the proponents of the feasibility of high-quality PCI programmes without on-site cardiac surgery. However, we have to bear in mind that these data only provide a single piece of a rather complex jigsaw puzzle. We will try to summarise the principle arguments for and against further expansion of the number of PCI centres without on-site surgery.

1. For many complex invasive procedures a clear relation exists between volume and outcome. The Netherlands Society of Cardiology guidelines recommend a volume of at least 600 PCI procedures per hospital a year with at least 150 PCI

procedures per operator. The proponents of a further expansion of PCI programmes in multiple hospitals without on-site cardiac surgery have concluded that this can be feasible in many hospitals in the Netherlands, in particular in view of the further growth in the number of PCI procedures. Advocates of the counter position maintain that a PCI volume between 600 and 1000 may be feasible but that high-volume centres (more than 1000 procedures with five or more operators) will certainly provide a better quality of care. Furthermore, we have to bear in mind that countries with a very liberal approach are trying to accomplish the opposite: a strong reduction in the number of small centres, with better regulation because of quality standards (for example in Belgium).

2. At this moment the existing PCI centres have a substantial residual capacity to further expand their number of procedures, so from a volume perspective only one or two additional centres will be needed in the coming decade. Such a policy will result in a continuation of the centralisation of invasive cardiology services. Some have argued that this is the best way to ensure, maintain, and further develop a high quality of care. However, others consider that such a policy will prohibit many ambitious of medium-sized hospitals to further develop the quality of their cardiology department and services.
3. The advantages of on-site surgery are also a matter of debate. Is this only to provide care for the occasional patient with a catastrophic event during the PCI procedure or is close collaboration between surgeons and cardiologists necessary to ensure proper referral patterns and indications for invasive procedures? The proponents of a more liberal approach towards off-site centres say that they can work excellently together with surgeons at a distance. However, it is clear that it is easier for the invasive cardiologists in a centre with on-site surgery to collaborate closely on a day-to-day basis with their surgical colleagues than when this interaction is restricted to a single day in a week, when a surgeon

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from another hospital is visiting an off-site centre. Does this have a major impact on the quality of care? Does this influence clinical decision-making? Can you perform complex high-risk PCI without surgery on-site? Is decision-making in coronary revascularisation a task of experienced thoracic surgeons and cardiologists or is it just a formality?

4. Financial considerations certainly also play a role. Hospitals as well as physicians in nonacademic hospitals are reasonably well reimbursed for their efforts per PCI procedure. Furthermore, in academic hospitals PCI procedures and ICDs are an important cornerstone of the yearly budgets and are one of the main driving forces for academic centres to maintain their staff at a certain level. Certainly these financial arguments play a role in the minds of the directors and physicians of hospitals that have ambitions to start off-site PCI centres. In fact, that is what our Ministry of Health is trying to induce: a more liberal 'market driven' environment! PCI care is supposed to become cheaper at the end of the line, when 'market competition' will be induced by an increase in PCI centres. Whether this will actually happen is of course uncertain. It can also be argued that an increase in the number of PCI centres will result in an increase in costs, irrespective of a more liberal or non-liberal health care environment.
5. Should a regional approach play a role in the next decade? What to think about the start of a PCI programme just a few kilometres away from an existing facility, in particular in the context of existing

referral patterns and the need to expand newly initiated programmes to more than 600 PCIs a year? Of course a PCI programme of a single centre performing 1800 PCIs a year can be split over three facilities that all three perform 600 procedures. How will this affect the number of cardiologists involved in interventions? How to maintain a 24 hours a day, seven days a week schedule in such a scheme? A regional approach as part of a managed care strategy may solve this problem. This could either become an excellent example of a 'polder' model or end in total disagreement and organisational disaster.

6. Finally, and probably the most important issue: until now there has been no survey or inquiry of the opinion of the patients who have to undergo these procedures. This will be an important reason to adjust all ambitions of small as well as large interventional cardiology centres.

We would like to urge readers of this journal to respond by e-mail to m.munstra@thorax.umcg.nl or v.r.c.derks@isala.nl to provide additional arguments and express their opinion as to which of these arguments should carry most weight in the Dutch health care system for the coming years. ■

Reference

- 1 Lemkes JS, Peels JOJ, Huybregts R, de Swart H, Hautvast R, Umans VAWM. Emergency cardiac surgery after a failed percutaneous coronary intervention in an interventional centre without on-site cardiac surgery. *Neth Heart J* 2007;15:173-7.

Appendix 1. Strategy choices in PCI care.

Conservative

(no, or only 1 or 2 additional centres)

- A. 'Managed care' health system
(PCI in article 2 of the WBMV)
- B. Distance plays no role in the Netherlands
(all patients can reach a PCI centre <60-90 min)
- C. Only large volume centres (≥ 1500 per year) provide optimal care and training for cardiologists and cath lab staff
- D. The ambitions of 'new' centres are mainly driven by financial motives
- E. We need a surgeon for decision-making and management of complications on a day-to-day basis
- F. We dilate and stent 3VD and left main arteries!

WBMV=Dutch Special Medical Procedures Act, 3VD=three-vessel disease.

Liberal

(≥ 5 additional off-site PCI centres)

- 'Market driven' health system
(PCI not in article 2 of the WBMV)
- Many patients do not have rapid access
($<60-90$ min) to a PCI centre
- Alkmaar and Arnhem show the feasibility of small off-site PCI programmes
- Existing PCI centres try to protect their market share
- We almost never need acute surgery.
Off-site stand by is feasible and safe
- We say we do 'everything', but do we?