Supplementary table 1. Level of the healthcare provider

Domains	**What needs to happen for the target behaviour to occur?**	**Summary**	**Primary care**	**Secondary care**
Knowledge	GPs need to have factual knowledge that persistent hypertension is often caused by non-adherence	Facilitator: It is known that therapy adherence often plays a role when patients have persistent hypertension.	**GP1 (Q1)**: Then almost everything turns out to be non-compliance… (…) A problem you don't really feel but requires you to take medication has low compliance.	**PN sc2 (Q2)** Therapy-resistant hypertension is actually an uncommon occurrence and is more often a problem of [lack of] adherence in my opinion.
Physical, cognitive and interpersonal skills	GPs need to develop interpersonal/ communicative skills which enable a relationship in which both GP and patient feel safe to talk freely about treatment adherence	Facilitator: Collaboration between physician and patient and an open and honest conversation are important factors when discussing therapy adherence.	**PN pc1(Q3)** – but I do notice that if you build a certain rapport with people, foster their confidence, then they also tend to be a bit more honest with you. **GP8 (Q4)** Absolutely. Go ahead. Genuine interest is a good opening. **GP11**: Or what it means to someone…	
Memory, attention and decision process	GPs need to have attention for adherence factors affecting persistent hypertension.	Barrier: Changes in medication(brand) by the pharmacist and insufficient knowledge about medication.	**PN pc4 (Q5)** Because even the Baxter bags are not used properly. I can't count the times I've seen them backwards and inside out...	**PN sc1(Q6)** But the colours of pills also keep changing. That also confuses people. **SPC3 (Q7)** Patients don't know what they are taking, the file is not always up-to-date.
		Barrier: Insufficient knowledge about the relationship between lifestyle and cardiovascular risks by the patient.	**PN pc3 (Q8)** Very few people understand the relationship between their lifestyle and its effect on their heart. (…) because if you manage to reach that ten thousand step target but end up eating that kebab – you don't really understand it.	
		Facilitator: Attention for other factors in someone's life is important when discussing therapy adherence.	**PN pc2 (Q9)** When you talk about treatment-resistant, I think you then start to wonder why someone has elevated blood pressure in the first place. In society people feel an incredible amount of stress. Money problems, smoking, obesity, all the trimmings. And people are chronically ill, they're taking continual medication. At a certain point they think 'I don't feel like taking those tablets anymore'. But then	

			turn around and say 'Of course, I take them all regularly' **PN pc1 (Q10)** (...) and yes; for example, I notice certain factors, things that make you realize that not much is happening, that for various reasons people's blood pressure doesn't drop. They may not understand it, and indeed, disease insight and too much medication.	
Professional and social role and identity	Stimulating adherence and talking about this with patients should be incorporated into the professional norms and values of GPs.	Barrier: Sometimes the division of tasks is not clear for healthcare providers.	**GP5 (Q11)** I am struggling a bit with the issue of how much they [GPAs] can and cannot decide things. So I tend to just say "discuss it with the GP." Still, if in the future GPAs are given these tasks, then you have to have a clear idea what you are doing in relation to polypharmacy of course. How are you going to manage that [as a GP]? We are talking about a lot of patients; how are you going to keep on top of it? I suspect that this will turn out to be a huge task.	**SCP1 (Q12)** I have to confess that we as rheumatologists have outsourced cardiovascular risk management to general practitioners. We don't always actively check whether this occurs, although we do in some cases. Indeed, as rheumatologists we have decided that this no longer belongs in our outpatient clinic, just because we already have so many other things to do. I don't know if how we communicate this is actually understood and if anything is done about it.
		Barrier: Sometimes problems cannot be solved between the boundaries of the professional role.	**PN pc3 (Q13)** They're vague terms, low literacy, low health literacy. When talking about an ideal world – these are complex problems that we can't solve. We can't solve illiteracy. **PN sc2**: Cultural differences. **PN pc3**: Cultural differences, existing language problems. And then you're not even talking about debt problems or other problems. People who say "yeah, you know, it's all great what you're talking about but I've got other problems to deal with."	
		Facilitator: Enthusiasm about your profession and using your knowledge and skills to treat and educate patients is important.		**PC sc1 (Q14)** It is not poor literacy but personal competencies that are relevant; the patience to search for more complex underlying problems. Patients are given up on too easily.
Beliefs about consequences	Beliefs concerning realistic outcomes of discussing adherence during hypertension consultations	Facilitator: More attention for healthy behaviour factors improves disease outcomes		**SCP2 (Q15)** All lifestyle factors (...) focusing on these avoids a lot of the cost of medication and therefore overall costs. And you immediately tackle various multimorbid cardiometabolic diseases.

Optimism	GPs need to feel that recognizing and addressing non-adherence will improve delivery of hypertension care and patient health outcomes	Barrier: No progress despite a lot of effort.	**GP1** That's the last thing we need. We are constantly pushing but nothing happens.	
		Facilitator: The hope for reduction of risk on cardiovascular disease and a healthcare system which is optimally organized.	**GP2 (Q17)** You naturally hope for an eventual reduction in the risk of cardiovascular disease.	**PN sc2 (Q18)** And our goal really is to refer people back as soon as possible so that they can continue in primary care.
Intentions	GPs need to make a conscious decision to discuss adherence with the patient	Barrier: Varying involvement of care providers with training; limited involvement is reflected in less dedicated delivery of care	**PN pc3 (Q19)** I think that, [as] with education and training, there are big differences between the healthcare providers you end up with. (…) I think we all know: some will do everything for you, while others (…) just want to make you someone else's problem.	
Emotions	GPs have to be aware that detecting non-adherence will reduce undertreatment in primary care and overtreatment in hospital care	Barrier: GP uncertainty leads to a need for referral	**GP9 (Q20)** If I get that feeling of 'I can't get something under control...' You don't really get nervous but (...) you start to have doubts (...), why can't I get this done using normal means? Then you first try to find the patient's problems behind the problems and begin to wonder about yourself: am I doing something wrong; am I missing something? **GP3 (Q21)** Yes, of course you're figuring everything out (?) about that patient, making sure that you are not overlooking anything; that it is not something else after all. And then you eventually send your patient to the internist. If he can't figure it out either, then it's clear.	
Social influences	GPs need to feel skilled and confident in recognizing non-adherence and	Facilitator: Learning from each other via case studies and refresher courses. Communicating enthusiasm.	**PN pc4 (Q22)** (…) with others present. **PN pc3**: with other colleagues, that's right. **PN pc2**: Yes, but close. Certainly within a mile or so. **PN pc3**: That it still feels fairly safe. Not too many	**PN sc2 (Q23)** You can ask everyone to bring along a case that they are currently struggling with and then work out a decent plan together. **PN pc4**: And finding the time, because we had to arrange that

	treatment of persistent hypertension		strangers. (…) Then we can help guide it a bit – you hope then that colleagues will talk to each other. Sometimes they actually do.(…) Some care providers don't change, just like patients. But sometimes you may be able to find a way to get someone excited about something..	with our supervisor again. **PN pc3**: That is not a matter of course, and not everyone does it. **PN pc2**: I also think it depends on what setting you're in. I have the advantage of being in a practice that is very innovative. (…) Do you want to consult the second line? Well fine, just arrange it. A lot of people don't get that [sort of leeway].

Supplementary table 2. Level of the healthcare system

Domains	**What needs to happen for the target behaviour to occur?**	**Summary**	**Primary care**	**Secondary care**
Resources	GPs need time with their patient for appropriate delivery of care	Barrier: Insufficient time for effective conversation with patients about disease management	**PN pc5 (Q24)** You have to tease it out (of them). That's exactly what she says. Sometimes you just don't have that time. They've not only come for their blood pressure, but also for an annual check-up; other results also have an influence. **PN pc3 (Q25)** The things you discover when there is enough time for a conversation (…) is incredibly valuable. But yes (…), time is a continual problem, that's a tough aspect of my profession. **GP4 (Q26)** I see a lot of people with hypertension and diabetes, including people via early detection. (…) It really takes a lot of time to explain it to them. (…) You really have to give it sufficient attention; emphasizing that their blood pressure is good because of the medication and that they need to continue to use it. Well, you often can't manage that in those 10 minutes, so that leads to time overruns (...)	
	Social and lifestyle care professionals	Facilitator: Availability of social workers and lifestyle counsellors	**GP10 (Q27)** [It] also saves on costs… **GP8**: [I] think it will stay	**SPC3 (Q29)**

		to provide tailored education and support to (culturally diverse) patients	that way in your neighbourhood, but [it] depends on [the] person. GPA Mental Health… Social worker is extremely important (…) : I think that, as a general practitioner, you need strong support in that field. That doesn't really belong in the healthcare domain (…) **GP8 (Q28)** Perhaps more lifestyle coaches who are also from different cultural backgrounds themselves. So that the person better understands it and is more trusting. (…) **GP8**: Yes. Then you'll have a better chance of success. Don't just propose anything but actually ask "what do you need?"	Medications are only a small part of a treatment. A large part of the treatment is lifestyle intervention. Well, if I see people for 10 minutes twice a year at an outpatient clinic, I needn't have the illusion that I'm going to trigger a lifestyle intervention. I can push them in the right direction, but that sort of thing really needs to be much closer to the patient. I assume that a general practice or a lifestyle coach is the right setting.
	Involvement of pharmacist	Barrier: Limited cooperation with pharmacist hinders appropriate delivery of medication instruction	**PN pc2(Q30)** (…) we work together with a particular pharmacy (…) The pharmacy is very keen to offer (…) service. So that people receive things automatically rather than having to ring every three months (...) The pharmacy thinks (...) okay, they ordered it, so they probably take it. And they don't ask every patient "Has your blood pressure been checked". **GP4 (Q31)** (…) And when you have finally convinced them to take that pill and they're therapy-adherent, it's switched. (…) That can be annoying. (…) The pharmacy keeps telling them "it's the same pill.", but the patient says (…) "no, it's not the same pill because it looks different (…)." This causes distrust (…) And if they also have side effects, then (…) trust completely evaporates. The pharmacy clearly needs to provide more guidance. **GP4 (Q32)** [pharmacists] also run into the problem that a medication isn't reimbursed. (…) . **GP5**: Yes, a [patient] might [then] also want to spend 15 minutes with the pharmacist, but (…) that pharmacist also has a lot of patients of course. (…) Here, in this deprived area (…) I have	**PN sc2 (Q33)** But I think pharmacies could play a more prominent role. They can, of course, signal it as medication non-adherence – and they can then let the doctor know.

			to deal with fifteen pharmacies. You can't make fixed agreements with all of them. (…) That's just not feasible… No, I would prefer to go for regional agreements.	
	Collaboration with hospital care	Barrier: GPs experience insufficient room to ask questions and discuss patients with hospital care providers.	**GP5 (Q34)**: when I want to discuss medication with an internist and call the hospital, I notice that they have much more urgent problems. And my phone call isn't always convenient. That is not a great way to work or communicate. (…). The lines of communication aren't great, so I think something really needs to be done about that.	
		Facilitator: Effective, neighbourhood-oriented cooperation between primary and hospital care providers with the help of specialized GPs and nurses.	**GP9 (Q35)** I believe in a general practitioner who has considerable expertise and diagnostic options available in the local practice that are comparable to those found in hospitals. This makes them more accessible. (...) something like a semi-hospital [setting] ... "Just across the road there's a doctor who does consultations on Tuesday... If necessary, they carry out additional diagnostics and then [the patient] comes back." **GP4 (Q36))** There's a 'one-and-a-half-line' plan that we've also been working on for two years (…) Informal consultations with a cardiologist, vascular internist or nephrologist. This means the patient doesn't have to physically go to the second line, but you still receive advice. (…) There is already an option for teleconsultation, for example. A lot of people would also like to hear it from a specialist; patients who always seem to go to second line or emergency care, and again end up with a specialist. [We're also working on the possibility] of physically seeing that patient together.	**PN sc2 (Q37)** You could also have a bit more of a regional focus or – **PN pc4**: Even more exchange of knowledge. **PN pc2**: And also discuss cases. **SCP4 (Q38)** Ideally, general practitioners should discuss their questions (…) about CVRM with their specialist general practitioner and that general practitioner can then call me once a fortnight and say: "I need some help with this patient, what can we do?" The general practitioner then handles the rest himself. That's efficient in my view. **SPC3 (Q39)** Good support from the GPA and the physician assistants [is also needed]. And it's very useful that you can set goals and limitations [at the patient level] from the second line; "You can expect this from the patient, and that will not work." So that primary care feels happier actually caring for that patient according to that care plan. This sort of care plan doesn't only include your own sub-area, but the entire care network. You're obviously talking about a lot of interacting comorbidities.
		Facilitator: Appropriate IT infrastructure	**GP11 (Q40)** the ICT barrier… [is] a real bottleneck while it doesn't have to be. **GP8**: It's	**PN sc2 (Q41)** That it's actually just an online kiosk where you as a care provider are asked questions

			going really quickly. I'm confident it will turn out well. **GP1**: [That's an] important component. Scoring things through good use [of the] KIS (ICT system) – that can be optimized.	like 'Hypertension with these risk factors, (..) what's the best approach? Or which medicine?" Of course it's all in the guidelines, but I think it's easier and less time-consuming if you can just knock on someone's door (…) You have to start small and see if it works. **PN pc2:** I think you should start regionally, with hospitals, internists. Because (…) there is also a patient involved. It's not just a number(…) **PN sc2:** No, exactly. (…) the complete case file needs to be presented. **SCP5 (Q42)** In secondary care we see patients at extreme risk. People who were admitted to a cardiology ward with an infarction at the age of 30, 40 or who are already very overweight at that age or have early diabetes. That's a group we are not serving well right now. (…) I think that if we could communicate more easily, using telephone consultations or [for example] co-consultations, the educational value for general practitioners would also be much greater. And of course it is about signalling that "this really should be in the second line". (…) . **SCP6 (Q43)** [Ideally], we also want information systems that make it possible, the GPAs who take up their concerns with us, and to also ask questions. So that you are really working together for that patient. That we actually retain an expert role that is currently not always put to best use.
		Barrier: Finances		**SCP1 (Q44)** In recent years all kinds of new initiatives, including monitoring consultations, were covered by an adjusted fee. In the case of large departments, this can be worked out amongst the staff members – which isn't the case for small departments because then it is such a large part of your salary that you think "(...) I do my thing and half's gone. "

				SCP6 (Q45) The problem is that these insurers are a kind of black box for us; we never communicate with them and are unfamiliar with their way of thinking. They seem to make most of the decisions. (…) **SCP5**: As long as it remains like that, you develop very slow reflexes, don't you? Then you get things like "You have to achieve a number of first patient visits here at your outpatient clinic." And (…) if you don't, you'll have less money to spend next year. As long there's no alternative, it will continue like this. **SCP1**: This actually discourages all new initiatives.
	Resources to support delivery of primary hypertension care and to signal non-adherence	Facilitator: Objective measure to assess use of medication, assuming that patients might sometimes face problems with medication use.	**GP5 (Q46)** Yes, I would be interested. **GP9**: "Why doesn't it work? I would like to see if it is absorbed properly!" (…) **GP9:** Well, if I don't see any sign of better regulation after I've already prescribed three or four drugs… I'm going to ask my patient "Are you taking them correctly?" Then he says "Certainly, doctor." And then I'll say "I want to check it, I'll check your blood to see if it's been absorbed. Maybe there's something we don't know." (…) **GP4:** I think it adds something to the general understanding, avoiding all those people having to go to the second line.	
		Barrier: Lack of reliable blood pressure devices.	**GP6 (Q47)** What bothers me (…) Home measurement could also be better facilitated. [There is] uncertainty about whether it is correct; how reliable is the measurement? [That is a] precondition of good treatment. (...) [I] feel uncertain regarding treatment. Home measurement [with] more reliable equipment…	
		Facilitator: At home blood pressure measurement device is facilitating for self-management.	**PN pc2 (Q48)** In our practice (…) we do a lot of home measurements – we now know, evidence-based, that it [can] be brought back from a 24-hour to a 30-minute measurement. **PN sc2:** But (…) not all studies show [that] – it is almost better to do a good office test, with three measurements with a one minute interval, than those 30 minute measurements. (…)	

			PN pc2: One of our doctors has really looked into it. He said, "Yes, it's fine." You only miss the night-time dip; that's not measured. **GP7 (Q49)** (…) With most people you really can cope using blood pressure monitors and self-management. That has already given me real peace of mind, because [patients] note the measurements down. They come in once a month or every six weeks and have the list with them. That really is more efficient than taking measurements every time. (…) That already represents considerable added value (…) … doing the measurements themselves does encourage a bit of support at home.	
		Facilitator: Public campaigns to educate patients	**GP7 (Q50** (…) I actually think that the government should arrange some sort of advertising or information on TV (..). So that people understand it, independently of GPs (…). Of course, there are always programs about how bad medicines are… **GP5**: There are films made by local councils…. **GP7**: Yes, but where can people see them (…) ? **GP5**: You could put those local council films on your waiting room screen. **GP7**: Yes, I actually don't think it's a task for us as GPs	**PC sc1(Q51)** I think that education (…) could also be done nationally as far as I'm concerned. TV adverts [about] the importance of blood pressure. That (…) could be better highlighted. People don't realize it. Even highly educated people in your own social circle who have high blood pressure will say: "(…) I'm taking a pill and when it improves I can stop taking it." Or: "No thanks, no more pills, I don't need even more pills."
Goals	GPs have to be aware that detecting non-adherence will reduce undertreatment in primary care and overtreatment in hospital care	Barrier: Lack of insight concerning treatment possibilities in primary and hospital care results in unnecessary or overtreatment	**PN pc2 (Q52)** I think: we really don't know what each of us is doing in the 2nd and 1st line. When I hear that as a second-line nurse you can arrange home visits. (…). Then I think, "Those are things we do in primary care" (...) You could also just call the GP practice and ask: 'Could you visit that patient at home and take some measurements?'	
		Facilitator: Better collaboration between primary and hospital care improves health of people.		**PN sc2 (Q53)** I hope that it will be possible to do more work on 'one and a half line care'; so that people don't

				necessarily have to go to hospital because care outside of hospital has been improved. **SCP2 (Q54)** (…) I think it is very important that you work together, speak the same language and together support the patient, who will be much more motivated if the right tools are available. That together you can (attempt) to make The Hague healthier and happier.