

# Views of patients and physicians on follow-up visits

Results from a cross-sectional study in Swiss primary care

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## Summary

**Principles:** Decision making on follow-up visits is of great importance to patient-physician interaction and healthcare economy. However, follow-up visits are a somewhat neglected topic in primary-care research, and patients' views are widely unknown. The aim was to assess the relation between the views of patients and those of physicians on follow-up visits.

**Methods:** We performed a cross-sectional study in six general practices in a rural area of Berne, Switzerland. Separately recorded paired data from patients and physicians on the need for and timing of revisits were analysed for differences and agreement. The revisit ultimately scheduled by the patient and the physician at the end of the consultation after sharing views on revisits was compared with the initial statements.

**Results:** A total of 250 patient-physician consultations were observed. More patients (25%) than physicians (11%) (difference 14%; 95% CI 7% to 20%) deemed a revisit unnecessary or proposed need-based revisits. Observed patient-physician

overall agreement on the *need or no-need* of further visits was 81% (95% CI 76% to 86%). If both patients and physicians (n = 164) agreed on the need for a revisit, patients preferred slightly longer revisit intervals than did their physicians (5.9 days; 95% CI -2.6 to 14.4). The revisit interval recorded in the appointment calendar at the end of the consultation nearly always matched the patient's preferences.

**Conclusion:** In one fifth of all consultations, patients' views on revisits differ from those of their physicians, with patients choosing a more liberal involvement in follow-up visits. Actively involving patients in the process of revisit handling might have an influence on revisit frequencies. The impact of the shared revisit handling on patient-relevant outcome measures and healthcare economy needs further consideration.

**Key words:** follow-up visit; revisit interval; general practice; shared decision making

## Introduction

The handling of follow-up visits is one of the very basic daily tasks of the primary care physician. There are no generally accepted criteria for determining an appropriate revisit interval [1], and few studies assess the impact of follow-up visits on clinically relevant outcome variables [2]. Also, studies assessing the reasons why healthcare providers have to see their patients again are sparse. Gordon et al. [3–5] found the doctor's interest in the case, the frequency of previous visits and the consensus with the patient to be relevant factors in choosing the revisit interval. Comorbidity [6], poor health status and change in disease management [7] appear to shorten revisit intervals. Given similar values of patients with, for example, diabetes mellitus or hypertension, different physicians choose highly different revisit intervals [8–10]. This sug-

gests that the physicians' and patients' personality as well as the singularity of the patient-physician interaction are the most important determinants in scheduling follow-up visits [11].

Our experience has shown that, in most situations physicians make decisions on follow-up visits based on their work habits, intuition, medical education and experience, interest in the case and their practice workload. However, the patient's opinion is often neglected. The frequently propagated shared decision making has failed to gain influence on the handling of follow-up visits.

The aim of our study was to explore the reactions of patients who were invited to share their views on follow-up visits; to assess the differences and the agreement in the views of patients and physicians regarding the need for and the timing

of follow-up visits; to compare the initial records on follow-up visits to the appointments recorded in the appointment calendar.

The concepts of “revisit” and “follow-up visit”

are used synonymously throughout the paper and refer to the next consultation resulting from an ongoing consultation context. A “revisit interval” [12] specifies the time between two visits.

## Subjects and methods

### Study design and participants

We performed a cross-sectional study in the general practice setting in a rural area of Berne, Switzerland.

Six out of nine possible practicing physicians in this region volunteered to participate. The study was conducted between June and October 2001.

We planned to enrol 40 to 45 patients per physician in the study, in total 250. Physicians were instructed to enrol patients consecutively. Patients consisted of an unselected general practice population with any kind of complaints and conditions. Exclusion criteria were: patients with an accompanying person (e.g. young children), patients coming for vaccination, preventive check-up examination and preoperative assessment, or only for laboratory work, radiography or electrocardiography.

### Data collection and outcome measurement

Data collection was extensively pilot-tested and resulted in a final form including: 1. Patient demographic data. 2. Physician’s view on the need for and the timing of the next visit (coded as “yes” [explicit numeric interval assigned]; “only if necessary”; “no further meetings needed”). 3. Patient’s views on the need for and the timing of the next visit (coded as “yes” [explicit numeric interval assigned]; “only if necessary”; “no further meetings desired”). 4. Revisit interval finally assigned by the receptionist in the appointment calendar (coded as “yes” [explicit numeric interval registered]; “only if necessary”; “no further meetings needed”). 5. The following free-text data were recorded: patient complaint and reason for the actual visit; diagnoses and reason for the need of a revisit in the view of the physician.

To map the actual patient-physician interaction, the subjects in our study were patients and physicians participating in the same consultation setting. We were aware

of the mutual influence of patients and physicians in assigning future revisits. But in order to reflect the real practice setting, we refrained from involving an external observer for data collection. To assure as much independent measurement as possible, the physician recorded his own revisit preference at the end of the consultation without making it known to the patient. Thereafter, the physician proceeded to elicit the patient’s preferences in the following standardised fashion: “When would you like to see me again?” Patients who were indecisive or delegated the decision to the doctor were asked again: “If you had to decide when the next consultation should be, what would you say?” This two-step process of data acquisition is illustrated in figure 1. All data elicited by the physician and the patient as described above, were entered by the physician into the data collection form. The composite revisit data from the first and the second questions were included for analysis.

During the pilot study we noticed that patients’ responses to the above questions fell into three basic categories: 1. Patients who delegate the decision to the physician or who appear to have no opinion on the need for and/or timing of a next consultation. 2. Patients who commit to a revisit and report an explicit revisit appointment preference (number of days). 3. Patients without commitment on further consultations (revisit “only if necessary” or “no further meetings desired”). These responses were supplemented by possible qualitative expressions. “Only if necessary” denotes that the patient comes up to the physician in case of demand, therefore no revisit is assigned.

Physicians’ perceptions were recorded as: 1. Physicians who decide in favour of a revisit and note an explicit revisit appointment preference (number of days). 2. No commitment on further consultations (revisit “only if necessary” or “no further consultation necessary”).

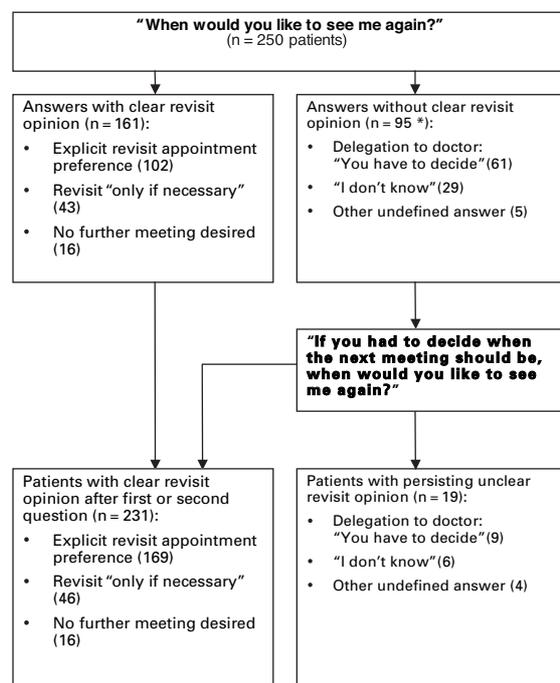
### Data analysis

All agreement calculations were matched per case as pairs for each patient, physician and the date finally scheduled at the end of the consultation. We used percentage observed total agreement to calculate agreement on whether a revisit should take place (1) or not (0). We further used the two separate indices of proportionate agreement in the positive and negative patient-physician decisions [13–16]. These two indices are analogous to sensitivity and specificity for concordance in a diagnostic marker test [14], or positive agreement can be sought of the probability one party thinks that a revisit is necessary, given the other also thinks a revisit necessary and analogously for negative agreement when revisits are not deemed necessary.

For patients and physicians who agreed on the need for a revisit and who expressed their revisit views in explicit numbers (e.g. days), the distribution of patient-physician differences is shown with its mean and 95% CI. Further we used the one-way analysis of variance estimator of the intraclass correlation coefficient (ICC) [17, 18] and a modified Bland-Altman plot [19, 20] to show the relationship of the continuous patient-physician variables. The intraclass correlation coefficient reflects the ratio of between consultation variance to the total variance in pa-

**Figure 1**

Flow-chart of two-step process to report patients’ reactions to “When would you like to see me again?” Note: only patients giving unclear answers were addressed twice. Physicians’ answers are not contained in the flow chart.  
\* To the first question, 6 patients gave answers in more than one category.



tient-physician interval assignment. A high patient-physician correlation within each consultation results in low within variation and a high ICC. For the Bland-Altman plot we modified this method and used ratios rather than the absolute differences [21], because patient-physician differences obviously increase with the average revisit interval and decreasing acuteness. To achieve symmetry in the ordinate of this modified Bland-Altman plot the ratios were log-transformed.

All calculations of initial agreement or difference were performed with the date finally scheduled at the end of the consultation.

We used predictive logistic as well as linear regression modelling to explain patient-physician agreement and differences (log-transformed patient-physician ra-

tios). The same predictor variables patient gender, age, number of consultations during the past year, comorbidity and chronic condition were used for both types of models. We started modelling with univariate preselection ( $p < 0.2$ ) and used then backward selection to build multivariate prediction models.

Since observations on individual patients within the same general practice may correlate, some analyses took account for the clustering effect [22] in variance estimation: the mean difference between patient-physician intervals and all regression analysis, but none of the agreement calculations. All analyses were performed using STATA (versions 8.0). We used the STATA survey methods to account for clustering. The general practice was the primary sampling unit.

## Results

Six practitioners recorded data on 250 patient-physician encounters, each physician contributed between 40 and 45 observations. All data collection forms were completed and could be analysed, no patients refused to participate. The six physicians were male and aged between 45 and 54 years. Their general practice experience varied between 1 and 17 years. Four practitioners were in the field of General Practice (GP's), one in the field of general Internal Medicine and one in the field of general Internal Medicine with the subspecialty Rheumatology. Patient characteristics are given in table 1.

### Patient reactions to "When would you like to see me again?"

At the first suggestion to schedule a follow-up visit (figure 1), 64% of all 250 patients had clear revisit ideas, either in terms of an explicit revisit appointment preference (41%) or the wish for no close revisit involvement (23%). The remaining 36% either delegated the answer to the doctor "you have to decide" (24%) or did not have any opinion (12%). The second suggestion was addressed to the indecisive patients and ultimately showed 6% to remain indecisive.

Table 2 shows that physicians, in contrast, were prone to make appointments more often, less frequently expressed the option of a loose involvement and proposed a slightly shorter revisit interval than did their patients.

### Patient-physician agreement

In total, results of 230 consultations were analysed for agreement on follow-up visits. The data from 20 encounters were excluded from this analysis, because they were not meaningful in terms of agreement (e.g. indecisive patients or patients delegating the answer to the doctor). The matched raw patient-physician agreement is shown in table 3.

Percentage overall agreement on whether a revisit should take place or not was 81% (95% CI 76% to 86%) and is chiefly explained by strong patient-physician agreement on *the need* for a follow-up visit (positive agreement 0.88; 95% CI 0.85 to 0.92). Conversely, negative agreement on *no need* for revisit ("revisit only if necessary" or "no further consultation") was less strong (0.52; 95% CI 0.39 to 0.64) and therefore had less impact on overall agreement. In other words, in encounters where either the patient or the physician suggested a revisit "only if necessary" or "no further visits" (29%; 66/230; table 3) disagreement was common (65%; 43/66) because patients more often expressed the wish for no close revisit involvement than did their doctors (57% (38/66) vs 8% (5/66), respectively).

### Scheduling return visits

The revisit interval proposed by patients was on average 5.9 days longer than that proposed by physicians, but showed excellent correlation (ICC 0.80; 95% CI 0.75 to 0.86). The distribution of the proposed revisit intervals is shown in figure 2 by means of a modified Bland-Altman plot. Within short average revisit intervals (<30 days) patients tend to prefer rather shorter revisit intervals than their doctors, whereas in the long run this tendency reverses itself. Most follow-up consultations (90%) were suggested to take place within 100

**Table 1**  
Patient characteristics  
(n = 250).

Age, years (SD; [min., max.])	59 (19; [13, 91])
Gender	60% female
Number of consultations, median (IQR) *	6 (3 to 11)
Chronic condition, % (No) **	71.6% (174)
Comorbidity, multi-morbidity, % (No) ***	54.7% (133)
Main complaint for actual consultation, in % (No)	
Cardiovascular disease	17.6% (44)
Surgery (urology, gynaecology, orthopaedics, trauma)	13.2% (33)
Respiratory tract, Infectious disease	7.2% (18)
Gastrointestinal tract	7.2% (18)
Rheumatology	17.2% (43)
ENT, ophthalmology, dermatology, neurology	10.4% (26)
Endocrinology	2.8% (7)
Psycho-social problem	4.4% (11)
Other, undefined or multiple problems	20.0% (50)

\* Refers to the year before study inclusion.  
IQR: interquartile range.

\*\* Condition of at least three month duration.

\*\*\* Two or more concomitant diseases.

**Table 2**

Summary of answers from patients and physicians.

	patients (n = 250) <sup>a</sup>	physicians (n = 250) <sup>a</sup>	Odds ratio (95% CI)
Categorical variables			
Further visits requested	169 (67.6%)	217 (86.8%)	0.3 (0.2 to 0.5)
Revisit 'only if necessary'	46 (18.4%)	23 (9.2%)	2.2 (1.3 to 4.0)
No further visit desired or necessary	16 (6.4%)	5 (2.0%)	3.4 (1.1 to 11.9)
Other	19 <sup>b</sup> (7.6%)	5 (2.0%)	
			Difference (95% CI)
Continuous variables			
Mean proposed revisit interval length in days	53.5	46.7	5.9 <sup>c</sup> (-2.6 to 14.4)

<sup>a</sup> Total numbers of patients and physicians giving answers on revisits. Of these 250 observations, 230 could be matched for calculations on patient-physician agreement (table 3). 15 observations of physicians in the category "Further revisits requested" could not be matched to patient answers and one patient observation in the category "No further visit desired or necessary" could not be matched to a physician answer.

All answers in the category "Other" could not be used for computations on patient-physician agreement.

<sup>b</sup> See figure 1 (\*).

<sup>c</sup> Does not exactly equal the difference between the presented means, because the calculation is based on matched data only, whereas the means refer to all participants giving specific answers.

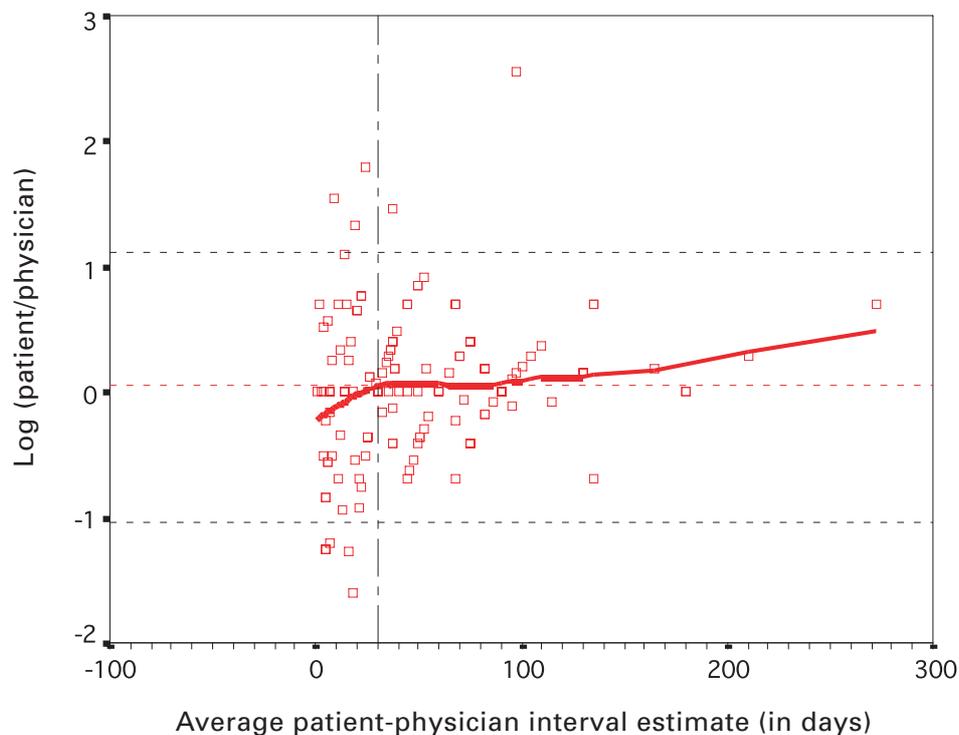
**Table 3**

3 × 3 contingency table for patient-physician agreement on three answer categories. Physicians' answers are displayed in columns, patients' answers in rows. Bold numbers in diagonal represent patient-physician agreement.

		physician answers (n = 230)				
		agreement	explicit appointment preference	revisit "only if necessary"	no further meeting necessary	total
Patient answers (n = 230)	explicit appointment preference	<b>164</b>		5	0	169
	revisit "only if necessary"	28	<b>18</b>		0	46
	no further meeting desired	10	0	0	<b>5</b>	15
	total	202	23	5		230

**Figure 2**

The modified Bland-Altman plot shows the log ratio of patient-to-physician revisit interval estimates against the average of the assignments (number of days). The dashed lines represent the mean log ratio ± 1.96 standard deviation. We added a locally weighted regression curve (LOWESS) to show tendency. There was a significant trend to greater ratios on long mean revisit intervals. Before day 30 patients prefer shorter intervals than do their physicians, thereafter longer intervals (vertical dashed line).



days, and the greatest patient-physician variation was found to be around 30 days.

However, we found hardly any difference (0.7 days) between patient preferences and the revisit interval finally recorded in the appointment calendar by the receptionist at the end of the patient's visit.

In the linear regression model none of the variables patient gender, age, number of consultations

during the past year, comorbidity and chronic condition were associated with patient-physician revisit interval differences, whereas in the logistic regression model patient age was the only significant variable associated with patient-physician revisit agreement. With each additional year of patient age agreement was 1.028 times more likely to occur (95% CI 1.013 to 1.043).

## Discussion

Decades ago, non scheduled consultations were common practice in Switzerland, ie patients decided whether they needed a follow-up visit or not. Today however, doctors usually determine the revisit interval and patients are expected to comply. In our study, physicians were asked to reflect and patients invited to decide on follow-up visits by means of the unexpected question "When would you like to see me again?"

This question, which implies the need for a revisit, can be understood explicitly as a request to state a specific revisit preference or literally as an offer or invitation to consider follow-up visits. Patients' answers often contained both aspects. We focused on the former, but recorded qualitative answers as well.

On the first attempt, one-third of all patients felt uncomfortable with the above question and tended to give the physician responsibility for follow-up meetings. We thus implemented a simple rollback of the question for indecisive patients, and the great majority thereof subsequently participated in the decision making process.

Patient-physician overall agreement on follow-up visits in routine daily practice was found in 80% and was absent in one fifth of all consultations. The usual hierarchical setting in the doctor's office may have further reduced the number of patients who refused a revisit. Overall agreement is mainly explained by "positive" and not by "negative" agreement. Hence, physicians and patients usually agree on the need for a revisit, which seems hardly questioned, and a matter of habit, but that no further meetings might be needed seems rarely a matter of discussion.

Patients prefer slightly longer revisit intervals than do their doctors, mainly for appointments made long in advance. In addition, the desire for a looser follow-up involvement (ie revisit "only if necessary" or "no further visits desired/necessary") was expressed 2.6 times more frequently by patients than physicians. From the patient's point of view unmet expectations and requests might explain this difference [23]. For physicians, confirmation of patient management, practice workload, legal coverage or monetary incentives might be of importance.

Qualitatively expressed attitudes on follow-up visits reflect more accurately reality in a particular case than do quantitative ones. On the other hand

patients making qualitative remarks possibly give hidden messages to the doctor. Remarks like "I would prefer no further consultations at all", "maybe in 10 years" or "who likes going to the doctor?" can indicate misunderstandings or patient needs [24].

Scheduling follow-up visits at the end of the consultation is a matter of negotiation [25, 26]. We observed hardly any difference between patient revisit preferences and the appointments finally entered in the appointment calendar. This might demonstrate that patients have a potentially powerful influence on the fate of follow-up visits when they are involved in the scheduling process. Another explanation could be that physicians tend to adopt the patient's attitude, although they might initially have a different view. It seems that if physicians use a simple conversation to learn the patient's wishes they deviate from their routine scheduling practice to accommodate the patient.

In some situations patients and physicians apparently have different views on how to handle follow-up visits. We did not succeed in explaining these discrepancies aside from observing that increasing age has a small effect on the agreement for a revisit. Further qualitative research is needed to generate hypotheses to build explanatory models. Moreover, we do not know if diverging revisit views of patients and physicians have an influence on patient-physician interaction, patient health outcome and healthcare economy. Lastly, the true influence of shared revisit handling on the frequency of revisits and the length of revisit intervals should be addressed in a randomised study.

## Limitations

To study a complex issue like decisions on follow-up visits, the views of patients and physicians were reduced to comparable data. Results should therefore not be taken literally, but rather as tendencies.

We further emphasize that from patient-physician agreement on follow-up visits no inference can be made on any other kind of patient-physician agreement.

Our study took place within the framework of the Swiss healthcare system. Furthermore, this data and its conclusions originate from a convenience sample of rather enthusiastic rural primary care physicians. These results can therefore not be

generalised either to different healthcare systems or care settings. In other systems and settings, follow-up visits might be managed quite differently. Also, these data are cross-sectional and represent a snap-shot in time. Repeated follow-up measurements would give a more reliable picture.

Data were not collected by an independent interviewer, but by physicians and therefore mutual influence in the assignment of follow-up visits happened. This rather reflects the real-live setting but the true dissent might be different.

### Conclusion

Although these data require confirmation in a larger random sample of general practices, they suggest that patients prefer a generally less strict involvement in follow-up visits than physicians. However, the handling of follow-up visits in a general practice should not be an isolated task of the physician, but be seen as an important part of patient-physician communication. Sharing attitudes on follow-up visits might also reveal hidden messages to the physician, support patient autonomy and what remains to be shown, be relevant to health outcome and healthcare economy.

*Acknowledgement:* We would like to thank the following persons: Dres. Peter Schmid, Andreas Meinen, Sebastian Birrer, Konolfingen and Walter Nef, Martin Meyer, Marius Bärswyl, Oberdiessbach, for collecting data. Professor Johann Steurer (Horten Center, University of Zurich, Switzerland), for institutional support and critical review of the manuscript. Swiss Academy of Medical Sciences, RRMA Commission, President Professor Hans Stalder for the support of research in primary care medicine. Mrs. Mary Heaney Margreiter, for English language refinements.

*Contributors:* AW designed the study, obtained funding and supervised data collection. MTK analysed the data. Both AW und MTK interpreted the data, wrote and revised the report. AW and MTK both act as guarantors for the paper.

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