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## Original article

# Use of national and international guidelines by German urologists—Results of a survey

J. Busch<sup>a,\*</sup>, C. Röllig<sup>b,1</sup>, L. Weißbach<sup>c</sup>, C. Jahnke<sup>a</sup>, C. Kempkensteffen<sup>a</sup>, S. Hinz<sup>a</sup>, M. Schostak<sup>a</sup>, C. Stephan<sup>a</sup>, S. Weikert<sup>a</sup>, G. Ollenschläger<sup>b</sup>, K. Miller<sup>a</sup>, M. Schrader<sup>a</sup>

<sup>a</sup> Charité Universitätsmedizin Berlin, Department of Urology, Charitéplatz 1 in 10117 Berlin, Germany

<sup>b</sup> Agency for Quality in Medicine (ÄZQ), Tiergarten Tower, Straße des 17. Juni 106-108, 10623 Berlin, Germany

<sup>c</sup> Euromed Clinic, Department of Urology, Europa-Allee 1, 90763 Fürth, Germany

Received 20 June 2010; received in revised form 8 August 2010; accepted 9 August 2010

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**Abstract**

**Objectives:** Diagnosis and treatment guidelines (GL) set standards for improving the quality of patient care (QPC). The effect of urological GL has not yet been substantially evaluated. We aimed to assess the acceptance and use of national and international urological GL from a German urologist's perspective.

**Methods:** A link to an online questionnaire on GL use was distributed via email by the German Urological Association. A total of 467 German urologists participated. Differences were analyzed by Fisher's exact and the McNemar test.

**Results:** GL were regarded as helpful by >90% of participants. The mode of guideline distribution preferred by 28.4% was the Internet, while 23.8% favored publication in the journal "Urologe A". For germ cell tumors, 40.5% supported the creation of comprehensive care centers considering them to be more effective in improving the QPC than GL alone. For other tumor entities, particularly prostate cancer, GL development was clearly favored. GL of the AWMF were favored by 86.1% of the participants, those of the EAU by 64%.

**Conclusions:** Most German urologists have a positive attitude towards GL. They mainly use the national GL but are also favorably disposed toward those of the EAU and AUA. GL are subjectively integrated into treatment decisions. These results could serve for improving GL dissemination and implementation strategies.

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**Keywords:** Guidelines; Urology; Quality; Effectiveness; Acceptance; Compliance

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**Introduction**

Many urological guidelines (GL) have thus far been published [1–3]. The main goal has been to improve the safety and quality of medical care [4].

In contrast to directives, GL have an advisory character and are not legally binding [4]. In legal practice, however, they are consulted when adjudicating conflicts and thus exert a certain normative influence. If a physician's treatment decision differs from the GL, no penalty will be imposed by the fee system administrator or by a "quality assurance facility" [4]. GL show qualitative differences and a basic distinction must be made between consensus- and evidence-based GL. Following formal principles in guideline creation, the Association of the Scientific Medical Societies in Germany (AWMF) defines three levels of development (S1 to S3). S3-GL represent the highest level, since they are evidence- and consensus-based, and their underlying logic enables clinical decisions and outcome analysis [4].

The numerous GL of the European Association of Urology (EAU) are developed by different expert working groups based on published scientific data. A critical evaluation of this

\* Corresponding author. Tel.: +49 30450515052; fax: +49 30450515915.

E-mail addresses: [jonas.busch@charite.de](mailto:jonas.busch@charite.de) (J. Busch),

[Roellig@azq.de](mailto:Roellig@azq.de) (C. Röllig), [weissbach@stiftung-maennergesundheits.de](mailto:weissbach@stiftung-maennergesundheits.de)

(L. Weißbach), [catarina.jahnke@charite.de](mailto:catarina.jahnke@charite.de) (C. Jahnke),

[carsten.kempkensteffen@charite.de](mailto:carsten.kempkensteffen@charite.de) (C. Kempkensteffen),

[stefan.hinz@charite.de](mailto:stefan.hinz@charite.de) (S. Hinz), [martin.schostak@charite.de](mailto:martin.schostak@charite.de) (M. Schostak),

[carsten.stephan@charite.de](mailto:carsten.stephan@charite.de) (C. Stephan), [stefan.weikert@charite.de](mailto:stefan.weikert@charite.de)

(S. Weikert), [Ollenschlaeger@azq.de](mailto:Ollenschlaeger@azq.de) (G. Ollenschläger),

[kurt.miller@charite.de](mailto:kurt.miller@charite.de) (K. Miller), [mark.schrader@charite.de](mailto:mark.schrader@charite.de) (M. Schrader).

<sup>1</sup> Fax: +49 3040052555.

methodology using the AGREE (Appraisal of GL for Research and Evaluation) instrument recently yielded good results for the EAU GL in most sections [5]. The GL of the American Urological Association (AUA) are developed by a similar method [5].

The development of GL is time-consuming and expensive. Their effectiveness can only be determined by complex instruments. This has only been done for a small number of GL [6]. This study aimed to systematically evaluate the acceptance and use of both national and international GL from the target group's point of view. Suggestions were also compiled for future development and dissemination of GL.

## Methods

### Questionnaire design

The survey was conducted by an online questionnaire. An Internet link was distributed by the German Urological Association (DGU) via email. The questionnaire was evaluated at a regional urological meeting, revised in cooperation with an expert group of the Agency for Quality in Medicine, and divided into two different sections.

For the first section see Table 1. The second section investigated which GL are integrated into the daily routine. Participants were asked which GL they had actually used. They could choose among all urological GL published thus far by the AWMF, EAU and AUA.

### Data analysis

The data were collected anonymously between February and October 2008. There were a total of 1387 page views with 488 recorded data sets and 467 assessable questionnaires, corresponding to a response rate of 33.7%.

Differences in response patterns were analyzed by the Chi-square test, Fisher's exact test for categorical response patterns, and the McNemar test for dichotomous response patterns.

Differences were considered significant if the  $p$  value was  $<0.05$ . The statistical analysis was conducted with SPSS version 17.0 (SPSS Inc., Chicago, IL, USA).

## Results

### Participants' profile, acceptance and use of guidelines

Board certified urologists comprised the largest group of participants (44.5%), followed by attendings (19.7%) and residents (17.6%). Additionally, 65% indicated that they worked in a hospital.

The question "How would you describe your general attitude towards GL?" was answered by 91% of the participants with "Interested, generally positive", and 90.1% also indicated that they used GL for diagnosis and therapy (difference compared to non-users significant at  $p < 0.001$ ). In the group of non-users (9.9% of all participants), 47.8% showed interest in GL and had a positive attitude towards them.

Table 1  
First section of the questionnaire.

| # | Question  | Possible Answer   |
|---|---|---|
| 1 | "How would you describe your general attitude towards GL?"  | "Interested, generally positive", "undecided" or "not interested, generally negative"   |
| 2 | "Do you use clinical GL for diagnosis and therapy?"   | "Yes" or "No"   |
| 3 | "What is your access to GL?"  | "German-language journals", "English-language journals", "Internet", "meetings", "colleagues" or "CME"  |
| 4 | "Do you believe that the creation of comprehensive care centers can improve the QPC more effectively than the development and publication of GL?" | "I generally agree", "undecided" or "I generally disagree" for PCA, BCA, GCT and RCC  |
| 5 | "What kind of guideline distribution would you favor?"  | "DGU email newsletters", "DGU mail newsletter", "systematic and sequential publication of GL in "Urologe A", "systematic presentation during the annual DGU meeting", "via the DGU homepage" or "CME"   |
| 6 | "Should insurance companies financially support guideline-consistent treatment?"  | "I generally agree", "undecided" or "I generally disagree"  |
| 7 | "Which factor is a potential barrier to guideline use in your opinion?"   | Factors rated: "not up to date", "user-unfriendly formats", "complicated implementation", "flexibility limited by guideline specifications", "contradictory content", "difficulty finding the guideline" or "lack of time". Answers: "I generally agree", "undecided" or "I generally disagree" |
| 8 | "What is your current level of education?"  | "just finished medical school", "resident", "board certified urologist", "attending" or "head physician (director)"   |
| 9 | "Where is your main urological workplace?"  | "hospital" or "private praxis"  |

Abbreviations: GL – guidelines; CME – continuing medical education; PCA – prostate carcinoma; BCA – bladder cancer; GCT – germ cell tumors; RCC – renal cell carcinoma

GL were used significantly more often by urologists in hospitals than by those in private practice (93% vs. 85%,  $p < 0.05$ ).

### Electronic access to guidelines, incentive systems and barriers

The access to GL was the Internet for 28.4% of the participants, German-language journals for 22.2%, and meetings for 14.2%. The other participants obtained guideline information from English-language journals (14%), continuing medical education (13.7%) and colleagues (7.5%).

For future guideline distribution, the DGU homepage was favored by 28.4%, publication in "Urologe A" by 23.8%, and DGU email newsletters by 21.6%.

A comparable number of participants favored (41.6%) and opposed (41.4%) the idea that insurance companies should finan-

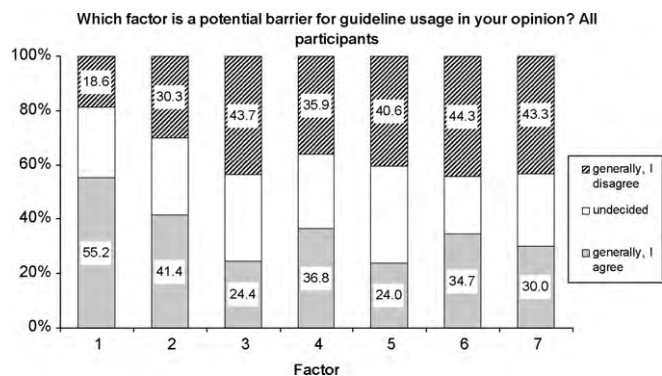


Fig. 1. Barriers to guideline use from the participants' point of view. Factor 1 – lack of up-to-date information; 2 – no user-adapted format; 3 – complicated application; 4 – flexibility limited by guideline specifications; 5 – contradictory guideline content; 6 – difficulty finding the guideline; 7 – lack of time. Data specified as percentage of all participants (n = 467).

cially support guideline-consistent treatment. The remaining 16.9% were undecided.

The main barrier to guideline use proved to be missing actuality (57%), followed by “user-unfriendly formats” (41.4%;  $p < 0.001$ ) (Fig. 1).

In the small group of non-users, limited flexibility was selected as the main barrier to guideline use (71.1%), followed by “user-unfriendly formats” (58.7%) and “difficulty finding the guideline” (56.6%).

#### Comprehensive care centers vs. guideline development to improve the quality of patient care

The participants were asked whether they considered comprehensive care centers (CCCs) to be more effective than clinical GL in improving the QPC for the four urological malignancies prostate cancer (PCA), bladder cancer (BCA), germ cell tumors (GCT) and renal cell carcinoma (RCC). CCCs were favored only for GCT by 40.5% of the participants, but at the same time 39.8% also supported the development of GL for GCT. The development of GL was clearly preferred for the three other tumor entities (Fig. 2).

#### Use of specific guidelines of the different organizations

The participants were asked to choose specific GL they had used so far from a list of all GL published by the three organizations: AMWF, EAU and AUA (39, 19, 17 publications, respectively). GL of the AMWF were used by 86.1% of the participants with a preference for GCT. The EAU GL were applied by 64%, those of the AUA only by 30% of the participants. GL use differed significantly between AMWF, EAU and AUA ( $p < 0.001$ ) (Table 2).

Analyzing the parallel use of GL published by two different organizations on the same topic yielded interesting results for PCA and BCA: for PCA, 30.6% consulted GL of EAU and AMWF, while 17.8% used those of AUA and AMWF, and 20.1% combined AUA and EAU GL.

For BCA the EAU differentiates into GL on muscle-invasive BCA (EAU1) and those on non-muscle-invasive BCA (EAU2).

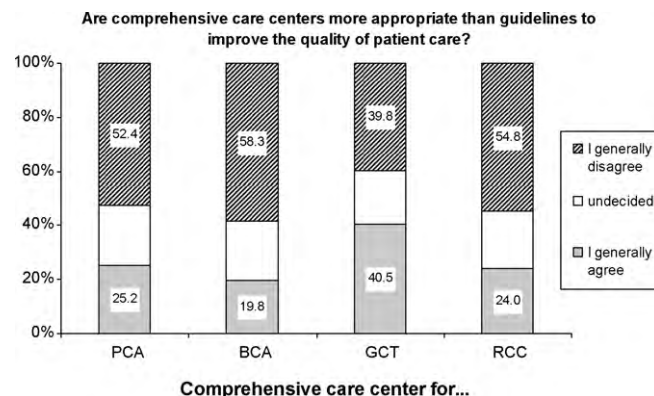


Fig. 2. Can comprehensive care centers improve the quality of patient care more effectively than guidelines? Data specified as percentage of all participants; n number given in parentheses for each malignancy. PCA – prostate cancer (n = 416); BCA: bladder cancer (n = 415); GCT – germ cell tumors (n = 415); RCC – renal cell carcinoma (n = 416). Differences between GCT and all other malignancies mentioned were statistically significant ( $p < 0.001$  in Fisher's exact test).

Only the combination of AWMF GL with one of the two EAU GL yielded important findings: 19.7% for AWMF with EAU1 and 19.9% for AWMF with EAU2.

The analysis of the GL use differentiated for urologists in hospitals or private praxis for the three different organizations did not reveal any statistically relevant differences.

## Discussion

### Overall use of guidelines

This is the first study that systematically investigated the acceptance and implementation of national and international GL from the viewpoint of German urologists with an acceptable response rate of 33.7%. Some results from the same survey focusing on national GL quality were published lately [7].

The findings indicate a positive attitude towards GL and a regular GL application by over 80% of the participants. Although a positive bias may be assumed due to participation of predominantly interested urologists, this result still indicates a remarkable overall acceptance of GL.

The lack of topicality was identified as the main barrier to GL use, a fact that casts doubt on GL in general from the user's point of view. It does not make sense to consult clinical GL if the user has to question the topicality of the respective recommendation. A useful strategy may be to subdivide GL into segments assigned to working groups that revise them at regular intervals, e.g. biannually.

Most participants access GL via electronic media supporting the idea of an Internet link on the DGU homepage.

The endpoint of this study, i.e. “acceptance and use” of GL, does not yield any direct information on the actual goal, i.e. “improvement” of the quality of care. However, indirect conclusions may be drawn from this surrogate parameter. Further studies are required to identify the exact reasons for GL use in order to raise their implementation rate.

Table 2  
Use of guidelines published by the different organizations.

| AWMF              | %    | EAU                     | %    | AUA                        | %    |
|-------------------|------|-------------------------|------|----------------------------|------|
| Used              | 86.1 | Used                    | 64   | Used                       | 29.6 |
| Not used          | 13.9 | Not used                | 36   | Not used                   | 70.4 |
| 1. GCT            | 73.6 | 1. PCA                  | 70.5 | 1. PCA                     | 81.9 |
| 2. PCA            | 69.2 | 2. GCT                  | 60.7 | 2. BCA                     | 31.9 |
| 3. BCA            | 61.2 | 3. BCA invasive         | 56.7 | 3. BPS <sup>a</sup>        | 29.0 |
| 4. LUTS           | 58.0 | 4. BCA noninvasive      | 53.4 | 4. PSA                     | 20.3 |
| 5. BPS diagnosis  | 54.7 | 5. RCC                  | 53.0 | 5. Ureteral stones         | 14.5 |
| 6. RCC            | 46.5 | 6. Penile cancer        | 32.9 | 6. Premature ejaculation   | 13.8 |
| 7. Urolithiasis   | 29.6 | 7. BPS                  | 31.2 | Priapism                   | 13.8 |
| 8. Cryptorchidism | 28.4 | 8. Erectile dysfunction | 27.9 | Varicocele and infertility | 13.8 |

Data in upper section given in % of all participants; data in lower section given in % of all guideline users of each organization.

<sup>a</sup> N.B.: The AUA has not yet published its own guideline on germ cell tumors. Abbreviations: GCT – germ cell tumors; PCA – prostate carcinoma; BCA – bladder cancer; BCA invasive – muscle-invasive BCA; BCA noninvasive – non-muscle-invasive BCA; LUTS – lower urinary tract syndrome; BPS – benign prostate syndrome; RCC – renal cell carcinoma; PSA – prostate specific antigen; AWMF – Association of the Scientific Medical Societies in Germany; EAU – *European Association of Urology*; AUA – *American Urological Association*. Differences in guideline use between the AWMF, EAU und AUA were statistically significant ( $p < 0.001$  in the McNemar test).

It may be concluded from this survey GL should be developed systematically under the supervision of methodologically trained experts and should be updated regularly even in the intervals between expert consensus meetings. Communicating new guideline contents could be realized via email newsletters.

#### Financial incentives for guideline use

A comparable number of participants favored (41.6%) and opposed (41.4%) the idea that insurance companies should financially support guideline-consistent treatment. GL only aid decision-making and are not legally binding. Financial incentives to use GL could infringe on the therapeutic freedom of physicians. On the other hand, integrated care programs represent current examples of such financial incentives that can help to promote guideline implementation and improve the QPC, as demonstrated in diabetes mellitus, for example, by a decrease of HbA1c [8]. Other modalities for linking physicians' payment to the QPC originate in Great Britain and the U.S.A. [9]. Epstein et al. report a total of three different US programs paying bonuses to physicians who meet certain quality criteria [9].

#### Comprehensive care centers better than guideline development?

The statement that CCC would improve the QPC for GCT more effectively than the development and publication of GL was supported by 40.5% of the responding urologists. The number of participants supporting comprehensive care centers for PCA was considerably lower at 25%. This result is interesting and surprising, not least because the CCC promoted nationwide during the last couple of years have mainly been established for PCA. Apparently the thus potentially altered QPC did not convince the participants of this strategy. On the other hand, it remains unclear why urologists favored the creation of CCC for GCT even though the GL for this disease received the highest quality rating. The responding urologists probably felt that their GCT patients were better off in CCC – also because of the low

incidence of this malignancy – in spite of the very positive qualitative survey results for this specific national guideline (data not shown; see [7]).

#### Evaluating the quality of care

The present survey results only reflect one aspect of evaluating GL effectiveness from the user's point of view. An objective long-term assessment of the effect and further development of GL requires diversified and continuous registration of the QPC. This could be done by applying the so-called RAND indicators. They were developed on the basis of the Donabedian paradigm with different structure, process and outcome indicators [10–12]. For the U.S.A., a study by McGlynn et al. with modified RAND indicators demonstrated that approximately 55% of participants received the treatment recommended for their health status [13].

Since then, various authors have been working on using the RAND indicators to evaluate the QPC in cases of (localized) PCA [14,15].

It seems conceivable that the 21 RAND indicators successfully used by Miller et al. for PCA could also be applied for other diseases [12]. It would be possible to record certain process indicators, e.g. pre-existing risk factors for major complications or the treatment indication. Appropriate outcome indicators would include, e.g. the recurrence rate, the complication rate, and the patients' satisfaction and quality of life.

#### Use of (inter)national urological GL

German urologists primarily consult GL of the AWMF for their treatment decisions. Nearly two thirds of the participants had already used the EAU GL, one third those of the AUA. For some topics, GL of several organizations are also consulted.

The participants mainly used national GL on GCT, followed by PCA and BCA. GCT could be a field of uncertainty for each urologist because of the low frequency of therapeutic decisions and due to the lower incidence compared to e.g. PCA. This is supported by the fact that GCT GL were second most commonly consulted by users of EAU GL. On the other hand the national

GL on PCA were second most commonly used probably due to the high actuality and the high frequency of decision-making in this field. The motivation for the use of specific GL was not investigated in detail.

The results stress the importance participants attach to the recommendations of the two most important international urological organizations in spite of their preference for the national GL. The identified barriers to guideline application probably also apply to urologists in other countries.

It must also be considered to what extent GL have to be adapted to country-specific health care systems in order to be widely used without being arbitrary and imprecise. International organizations like the EAU confront this challenge [5].

Users support a coordination of guideline contents among the different international organizations as well as additional access to the international GL via the homepage of the national organization.

## Conclusions

This is the first survey that presents differentiated opinions of 467 German urologists on national and international urological GL. Most participants accept and use GL. The lack of up-to-date information was identified as the main barrier to guideline use. GL are accessed primarily via electronic media. Users favor expansion of this data acquisition modality.

Incentive systems for guideline-consistent diagnosis and treatment could promote implementation of the current GL. Participants thought that comprehensive care centers improved the QPC more effectively than GL only in GCT patients.

German urologists primarily consult national GL but are also favorably disposed toward GL of the EAU and AUA.

The results of this study should be integrated into the development, distribution and update frequency of future GL in order to increase their implementation rate and provide for a better QPC.

## Conflict of interest

No conflict of interest declared.

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