



National
Kidney
Foundation®

AWARENESS AND EDUCATION NEEDS FOR
GOUT AND CKD:
SURVEY OF
OPINIONS AND PRACTICES OF
HEALTH CARE PROFESSIONALS

A Report of Significant Findings

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READING OPTIONS: 5-in-1 Drill-down Report

1. ONE HOUR (OR MORE) TO DIGEST IN FULL

- HOW: Read the highlighted sentence of each numbered paragraph and learn about the key global finding. Read the non-highlighted text in the numbered paragraphs for important supporting information, such as specific numbers and perspective. Read the bullet points to find out how these global findings change and differ for key sub-groups. Compare the findings to other information you may have available from other sources. Consider following along with the questionnaire or tables, using the reference provided at the end of each global finding.
- **Short on time? Start with the “Summary: Findings & Suggested Actions” sections and the highlighted text throughout the report.**

2. HALF HOUR SELECTIVE FOCUS

- HOW: Read the highlighted sentences throughout the report. When you get to the area of immediate interest, read the supporting detail about the global findings in the numbered paragraph(s) and the significant sub-group differences in the bullet points that follow.
- Short on time? Skip the bullet points, saving for another time all the insight they offer into what is going on at the sub-group level.

3. 10-MINUTE LOOK AT ALL THE TOPICS COVERED

- HOW: Read the highlighted sentences throughout the report.
- **Short on time? Read the “Summary: Findings & Suggested Actions” in full.**

4. 2-MINUTE OVERVIEW

- HOW: **Go straight to the “Summary: Findings & Suggested Actions”**
- Short on time? Read the highlighted sentences.

5. FLIP THROUGH THE GRAPHS (SIMULATED POWERPOINT)

- HOW: Use the list of charts in the Table of Contents to jump from graph to graph.

ACKNOWLEDGEMENTS

Many people helped make this study possible. We gratefully acknowledge all their efforts and extend special thanks to:

- The health care professionals who shared their experiences and opinions.
- The sponsor, for providing an educational grant to conduct this study.
- The National Kidney Foundation, for their guidance and for publicizing this study.
- The sponsor's **marketing partner**, for their guidance.

PURPOSE OF STUDY

This self-administered e-mail survey was conducted among 302 medical professionals who provide primary or nephrology care in the United States to adults with chronic kidney disease (CKD). It was focused on exploring their opinions and practices in testing and treating these patients for gout/hyperuricemia.

There is overlap between CKD and gout, two diseases that are frequently under- or misdiagnosed. People who have CKD are at increased risk for experiencing gout. This risk may not be particularly well-known, particularly among those in the early stages of CKD. Similarly, approximately 40% of those with gout have CKD, although their CKD may go undiagnosed.

If left untreated gout can lead to the formation of kidney stones and cause permanent joint and kidney damage. Even in its mildest forms, the pain of gout restricts patient activities and effectively prevents them from engaging in a healthy **lifestyle, exacerbating their kidney disease. Gout's unpredictable and recurring** nature adds to their suffering.

The National Kidney Foundation (NKF) would like to explore this issue and determine what additional initiatives or educational programs are needed to improve kidney health for those who have gout or hyperuricemia. NKF is a trusted resource among both patients and medical professionals. Among other things, it has a long history of actively engaging with the patient community on education and awareness of kidney disease. Over the years it has learned that the most effective patient education programs tend to be those that also address the communication needs and preferences of the medical professionals who are interacting with the patients.

To support NKF's **goal of** providing patients, and possibly health care professionals, with an effective education program to address this issue, the study addresses these *key issues*:

1. What patients and professionals know—or think they know—about gout,
2. How professionals approach co-occurring gout and CKD,
3. Where and in what format patients and professionals typically seek information, and
4. The barriers to diagnosing and treating patients with CKD and gout.

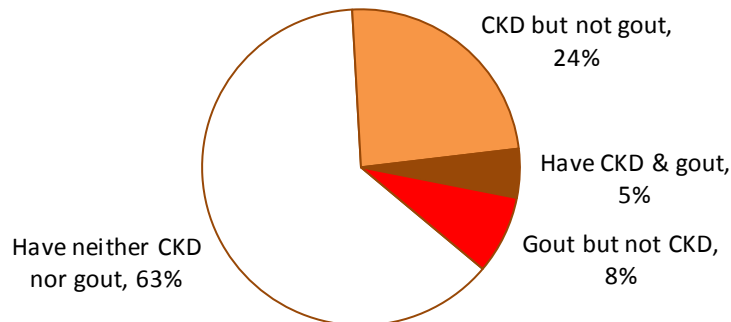
SUMMARY: Findings & Suggested Actions

Based on the perceptions and experiences of 302 nephrology and primary care professionals nationwide.

Finding #1: Primary care professionals have limited experience with gout—either alone or in combination with CKD.

Just over a third of the primary care professionals report no more than 5% of their patients have gout or hyperuricemia, which is four times as many as among nephrologists. A total of five out of six in primary care say less than a quarter of their patients have gout or hyperuricemia. Averaged together, only one out of every twenty primary care patients has both gout and CKD. A like number of the patients of primary care professionals have gout or hyperuricemia but not CKD. Roughly three times as many of their patients have kidney disease as have gout, yet patients with CKD represent only about a quarter of all the patients seen by primary care professionals. Nephrologists have about the same proportion of patients with gout as primary care professionals have with CKD.

Chart 1: Average Patient Base of a Primary Care Professional



Not all patients who should be are being screened, particularly with the sUA. Overall, no more than two-thirds of the patients diagnosed with CKD are being screened with sUA and three-quarters of those diagnosed with gout or hyperuricemia are being screened with eGFR. Both proportions are inflated by the inclusion of nephrologists, as primary care professionals are only screening about half of the patients diagnosed with CKD with sUA and two-thirds of those diagnosed with gout or hyperuricemia with eGFR. Only half of all professionals have a surveillance process where the records of patients such as this are routinely reviewed to evaluate whether to run tests. Those that do are more likely to be conducting sUA screening of their patients diagnosed with CKD, although they are not necessarily more likely to be conducting eGFR screening of their patients diagnosed with gout or hyperuricemia.

Finding #2: Even nephrologists are not necessarily very knowledgeable about gout—and they tend to know more about it than primary care professionals.

Only three-quarters of nephrologists are aware that gout is closely related to kidney disease. **More of them recognize kidney disease's tie to lupus and heart disease than to gout or hyperuricemia.** Awareness of the relationship between gout and kidney disease drops to two-thirds among primary care professionals. Professionals in primary care are as likely to say lupus and heart disease are closely related to kidney disease as gout/hyperuricemia.

One in five nephrologists admit that their knowledge of gout treatment is not very good, about half the level as among primary care professionals. Just one in five in primary care and two in five in nephrology say their gout treatment knowledge is excellent.

While nearly all professionals are at least somewhat aware of the key aspects of gout and CKD, less than half strongly agree with any area of knowledge other than the importance of early CKD diagnosis. Just one in five, for example, strongly agrees that CKD patients often require different gout treatment, and a total of two-thirds agrees. Nephrologist ratings seldom differ significantly from their counterparts in primary care other than a little stronger agreement that the kidneys play an important role in the regulation of sUA and that early diagnosis of CKD is an important step in limiting the progression of kidney disease. None of the primary care professionals disagree that high uric acid levels pose health risks beyond gout although a few nephrologists do.

Finding #3: There is a strong relationship between knowledge of gout and its diagnosis.

Professionals who are knowledgeable about one aspect of gout also tend to be knowledgeable about other aspects of the disease. Those aware that gout is closely related to kidney disease also have very good knowledge of gout treatment regimens and strongly agree with all of the key aspects about gout and kidney disease.

The professionals who are more knowledgeable about gout report screening about 10% more patients with CKD for gout and vice versa. While those with less knowledge of gout might screen two-thirds, for example, those who are more knowledgeable screen three-quarters.

While it is unclear which came first, professionals with more knowledge of gout also have more patients with gout. Those who are aware of the close relationship between gout and kidney disease, for example, report two times the proportion of patients with gout as their colleagues who are unaware of this link,

both in general and as a proportion of their patients with CKD. There is a similar pattern based on knowledge of gout treatment regimens. A third of both the professionals aware of the link between the two diseases and of the professionals with very good knowledge of gout treatment estimate that more than a quarter of their patients have gout or hyperuricemia compared to only one in ten who are not aware of the link between CKD and gout and of those whose knowledge of gout treatment is not very good.

Finding #4: There is a recognized need for patient and professional educational materials related to gout and CKD.

When prescribing a new medication, professionals are leaving out key pieces of information. While nine out of ten routinely tell the patient about possible side effects and how to take the medication, only two-thirds claim they discuss other treatment options, estimated effectiveness, and how long it will be used. A quarter of the professionals admit they do not discuss possible interactions.

Nearly all would like to see additional patient educational resources for patients who want to learn about gout or hyperuricemia, particularly print materials such as brochures or booklets, information sheets/tear-off pad, and teaching cards. At least one in five thinks a special website/web page, smartphone apps, support groups, video/DVD, and e-newsletter would be helpful.

Professionals feel that many topics related to gout or hyperuricemia would be helpful to include in patient educational resources. At least half say that it is essential to include prevention, importance of treatment, symptoms of the disease, and a description of the disease. Even the topic that has the least support—testing process—would be very helpful to 63% of the professionals.

Nearly all providers feel that professional education in some form would be helpful for learning more about guidelines for patient care. More than half are interested in CME/CE programs for credit, treatment guidelines, and journal articles. A large number of nephrologists are also interested in conference presentations, and a large number of primary care professionals are interested in treatment algorithms (pathways).

Suggested Actions

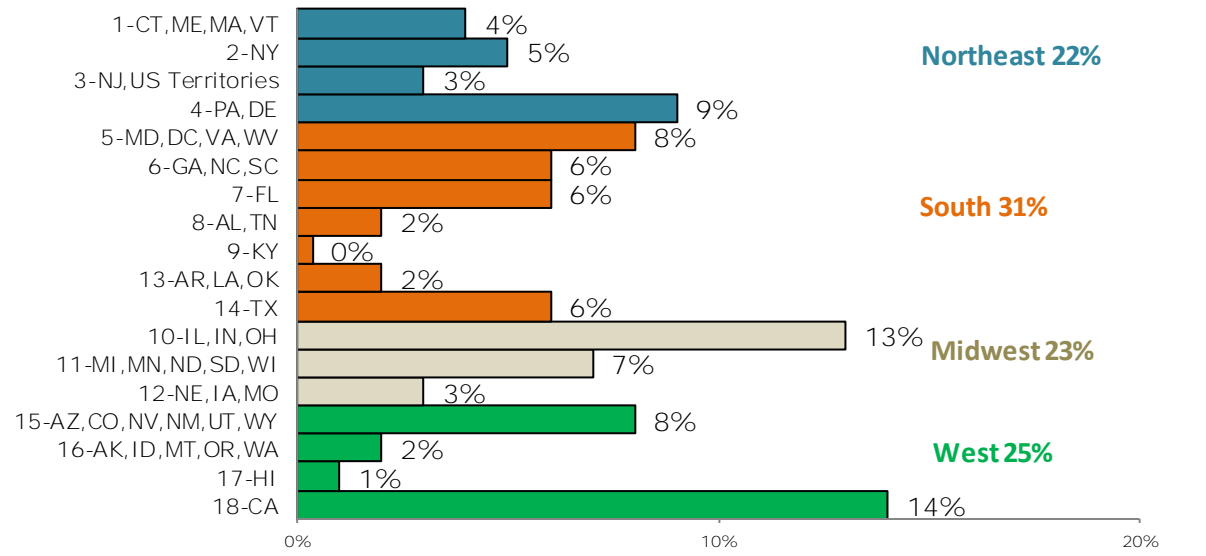
1. Prepare gout education materials for patients to help professionals communicate important information including a description of the disease, its symptoms, how to prevent it, and the importance of treatment.
2. Develop a special focus for primary care professionals to let them know gout is more common than they might think, but also educate nephrologists about the close relationship between gout and kidney disease.
3. Design CME/CE programs, treatment guidelines, and other materials to educate professionals about gout and its relationship to kidney disease, including the screening implications.

DETAILED FINDINGS

Who is Included

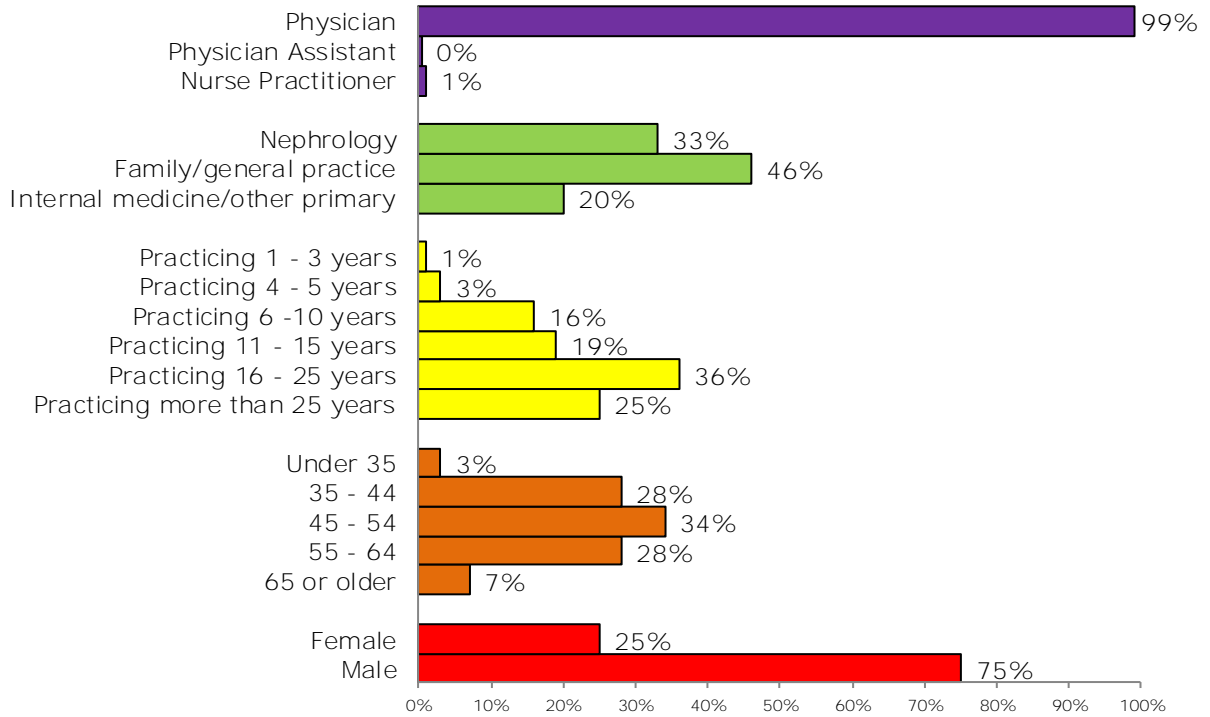
1. This report includes the views of nephrologists and primary care professionals from across the United States, ESRD networks, and Census regions. A total of 22% work in the Northeast, 31% in the South, 23% in the Midwest, and 25% in the West. – *Tables 33-32, Question 21—In what state do you work?*

Chart 2: ESRD Network/Region



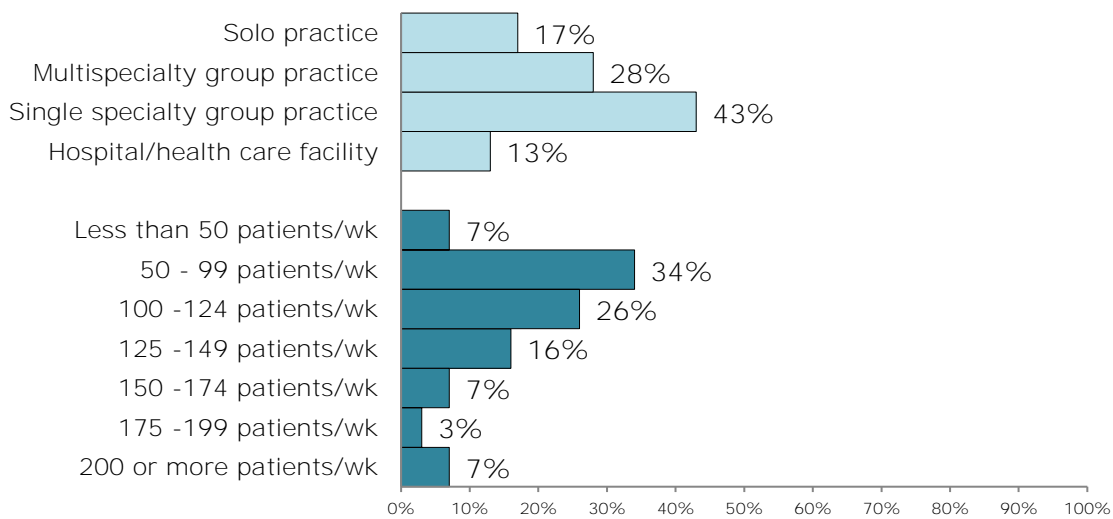
2. Two-thirds are primary care physicians and the rest are nephrologists. Nearly all (99%) are physicians, with nurse practitioners (1%), and physician assistants (<1%) also included. Half identify their specialty as either family or general practice (46%) and another 20% say it is internal medicine. The remaining 33% are nephrologists. – *Tables 1-2, Question 1—To make sure we ask you the right questions, do you currently treat adults with chronic kidney disease (CKD)?, Question 2—What best describes your medical specialty?*
3. Most are seasoned professionals, with 61% having been in practice for more than fifteen years. Just 4% have been in practice for less than six years. – *Table 31, Question 14—How long have you been in medical practice?*
4. Nearly all are under 65 years of age (93%), with most aged 45-54 (34%) or a little younger (28% aged 35-44) or a little older (28% aged 55-64). – *Table 39, Question 21—In what year were you born?*

Chart 3: Respondent Characteristics



- Nephrologists tend to be younger, with 41% under 45 years of age (vs. 25% in primary care) and just 26% over age 54 (vs. 40% in primary care).
5. Two-thirds are part of a group practice (70%), whether multispecialty (28%) or a single specialty (43%). Another 36% practice in a hospital or other health care facility. Just 17% have a solo practice. – *Table 34, Question 16—Is your practice part of a:*

Chart 4: Practice Characteristics

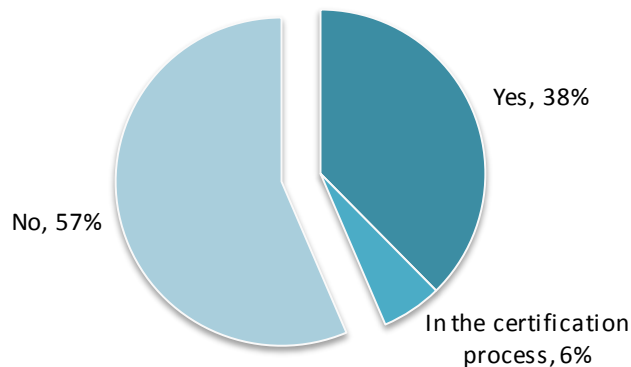


6. Respondents average seeing about 100 patients per week, although 17% see at least 150 patients in the typical week. Just 7% typically see less than 50. Most (60%) see 50-124 patients in a week. – *Table 39, Question 19—How many patients do you currently see in the typical week?*
 - Professionals in a hospital or other health care facility tend to see fewer patients, with 55% seeing less than 100 per week (vs. 38%-40% in a solo or group practice).
 - Those who feel they have very good knowledge of the gout treatment regimens tend to see fewer patients, with 82% (vs. 61% rating their knowledge lower) seeing less than 125 patients per week, including 12% (vs. 4%) who see less than 50. Just 7% of them report seeing 150 or more patients a week (vs. 20% who rate their knowledge lower).

7. Nearly all use electronic medical records, or EMR, at least in part (95%) if not exclusively (78%). – *Table 38, Question 18—Does your practice currently use:*
 - One in ten who have been in practice for more than 25 years only use paper records (11%, dropping to 4% in practice for 11-15 years and 0% who began practicing in the last 10 years).
 - Electronic records are less common in solo practices (84% usage, including 53% who only use electronic records), particularly compared to those in a multi-specialty group practice (100% usage, including 90% who only use electronic records; 95% in single specialty group practices and facilities use electronic records).

8. More than a third work in a practice that is a patient-centered medical home (a total of 43% have at least begun the process). – *Table 35, Question 17—Is your practice certified as a patient-centered medical home?*

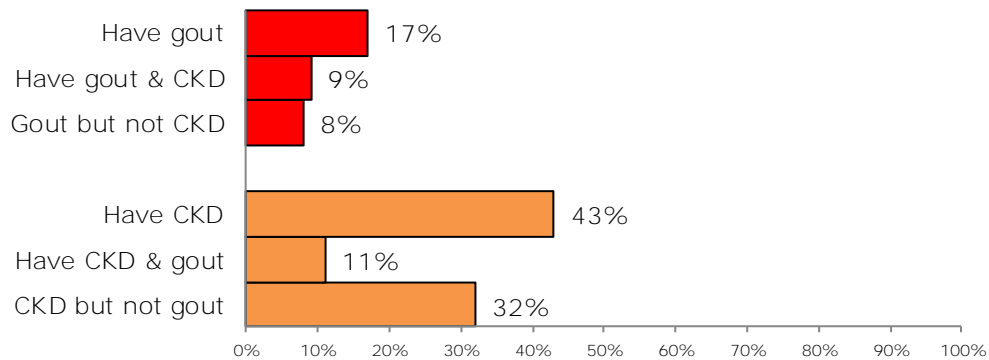
Chart 5: Practice Certification as a Patient-Centered Medical Home



- More than half in the West are either certified or will be soon (55% vs. 33% in the South, 44% in the Northeast, and 45% in the Midwest).

- Professionals who are aware of the link between gout and CKD are less likely to be working in a practice that is a patient-centered medical home (39% are certified or will be soon vs. 53% who are not aware of the link).
 - Half of the primary care practices are certified as a patient-centered medical home or in the process of obtaining such certification (52% vs. 26% in nephrology).
 - Almost two-thirds of the professionals in multi-specialty group practices say their practice has, or will soon have, this certification (62% vs. 27% in solo practices, 36% in single-specialty group practices, and 50% in hospitals/other health care facilities).
 - Such certification is more common among those who rely solely on EMR (44% have it now vs. 15% who use at least some paper records).
9. Twice as many of their patients, on average, have CKD as gout (a mean of 43% have CKD and 17% gout or hyperuricemia). A quarter of the CKD patients (23%) also have gout and almost half of the gout patients (44%) also have CKD. Altogether, the professionals indicate that one out of every ten patients has both conditions (9%-11%). – *Tables 4-5, Question 4—Approximately what percentage of patients in your practice: a) have chronic kidney disease (CKD, not receiving dialysis), b) of these patients who have CKD, what percentage also have gout or hyperuricemia, c) have gout or hyperuricemia, and d) of these patients who have gout or hyperuricemia, what percentage also have CKD?*

Chart 6: Patient Characteristics

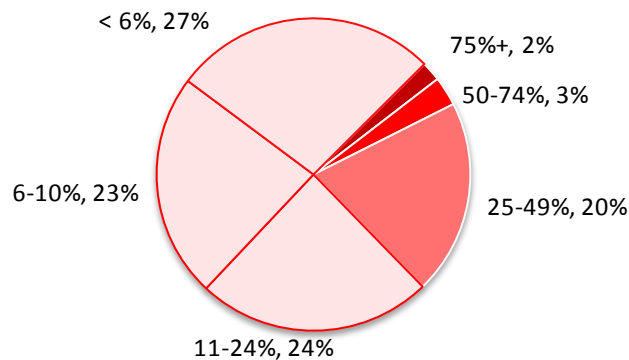


- Both gout and CKD are less common among the patients of primary care professionals (an average of 29% vs. 72% of nephrology patients have CKD, not receiving dialysis; on average, 13% vs. 24% of nephrology patients have gout). Just 5% of primary care professional patients, on average, have both conditions (vs. 19% of nephrology patients).
- The reported incidence of both gout and CKD, individually and in combination, rises with the size the patient load, from an average of 41% having CKD, 15% gout, and 9% both when fewer than 100 patients are

seen in a week to 50% having CKD, 23% gout, and 15% both when it is 150 or more patients.

- Gout is reported more among professionals who are aware of the link between gout and CKD, whether it is the proportion of all their patients who have gout or hyperuricemia (an average of 20% vs. 10% who are not aware of the link) or the proportion of patients with CKD who have gout or hyperuricemia (averaging 26% vs. 14% when unaware of the link between the two). They also report proportionately more of their patients with gout or hyperuricemia also have CKD (50% vs. 28% unaware of the link). Aware professionals report an average of 12% of all their patients have both conditions (vs. 4% unaware of the link between CKD and gout).
 - Professionals in the Midwest report a slightly higher proportion of their patients with CKD also having gout or hyperuricemia (an average of 27% vs. 17% in the West and 22%-24% elsewhere).
10. Looking at it another way, only one in twenty professionals have a patient base where the majority have gout or hyperuricemia (5% say 50% or more of their patients). Most professionals report that less than 25% of their patients have either gout or hyperuricemia (75%), including 27% of all professionals who say it is less than 5% of their patients. – *Table 41, Question 4— Approximately what percentage of patients in your practice: c) have gout or hyperuricemia?*

Chart 7: Proportion of Patient Base with Gout or Hyperuricemia



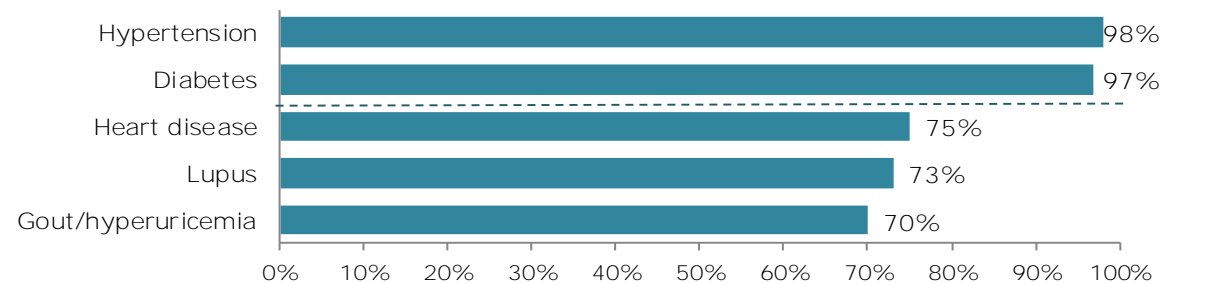
- A third of the primary care professionals report that no more than 5% of their patients have gout or hyperuricemia (37% vs. 9% in nephrology). Just 16% in primary care estimate that at least a quarter of their patients have gout (vs. 43% in nephrology)
- Half of the professionals who have been in practice of more than 25 years estimate that no more than 5% of their patients have gout or hyperuricemia (47% vs. 21% less experienced). Just 15% of these experienced professionals estimate that at least a quarter of their patients have gout (vs. 29% **with no more than 25 years' experience**)

- A third of the professionals without a surveillance process report that no more than 5% of their patients have gout or hyperuricemia (34% vs. 22% with a process to routinely review patient records to identify needed screening tests).
- The reported incidence of gout increases with patient load, rising from 19% who see less than 100 patients per week saying at least a quarter of their patients have gout or hyperuricemia to 44% who see 150 or more patients. Just 6% who see at least 150 patients per week estimate that no more than 5% of them have gout (vs. 36% who see less than 100 and 27% who see 100-149 patients).
- Those who say their knowledge of the gout treatment regimens is not very good tend to report proportionately fewer patients with gout, with 41% (vs. 21% rating their knowledge higher) saying it is no more than 5% and just 12% (vs. 30%) saying 25% or more of their patients have gout.
- Professionals who are aware of the link between gout and CKD are three times as likely to report that more than a quarter of their patients have gout or hyperuricemia (32% vs. 10%). Just 42% of them estimate that no more than 10% of their patients have gout (vs. 70% unaware of the link).
- A third of the professionals in the Northeast estimate that at least a quarter of their patients have gout or hyperuricemia (35% vs. 18% in the West, 23% in the Midwest, and 25% in the South).

Gout Awareness

1. Two-thirds recognize that gout is closely related to kidney disease (70%), far fewer than recognize the link to hypertension (98%) and diabetes (97%). Even the connection to lupus (73%) and heart disease (78%) are a little more widely recognized than the one to gout/hyperuricemia. – *Table 3, Question 3—Which of these diseases do you find to be closely related to kidney disease?*

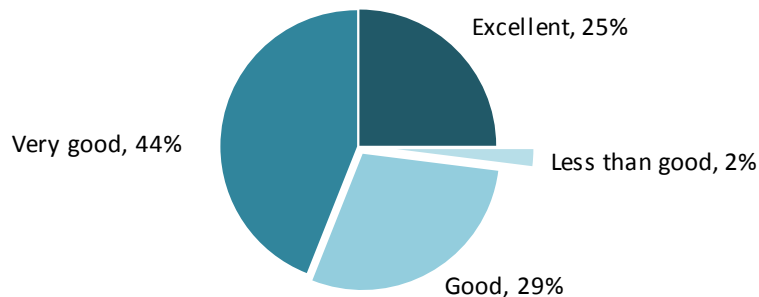
Chart 8: Diseases Closely Related to Kidney Disease



- Nephrologists are more aware of all these connections than are primary care professionals, including diabetes (99% vs. 96%), hypertension (99% vs. 97%), heart disease (89% vs. 72%), lupus (87% vs. 66%), and gout/hyperuricemia (79% vs. 66%).

- Only about three-quarters of the nephrologists are aware that gout/hyperuricemia is closely related to kidney disease (79%) and 66% of the primary care professionals.
 - Professionals who feel they do not have very good knowledge of the gout treatment regimens are less aware that gout is closely related to kidney disease (56% vs. 77% who rate their knowledge higher) or lupus (61% vs. 77% who claim to be more knowledgeable about gout treatment regimens).
 - Professionals whose practice is not part of a patient-centered medical home are more often aware of the gout connection to kidney disease (75% vs. 63% whose practice is currently or soon to be a PCMH).
 - Awareness of the gout connection to kidney disease is even lower when fewer patients have gout (64% when report less than 25% have gout vs. 88% when more patients with gout). These professionals are also less likely to be aware of the connection between lupus and kidney disease (69% vs. 83% when at least 25% of patients have gout).
2. A third indicate that their knowledge may be somewhat lacking as to available treatment regimens for gout and hyperuricemia (30% say it is no better than good). Almost as many (25%) feel they have excellent knowledge of gout treatments. – *Table 10, Question 9—How would you rate your knowledge of available treatment regimens for gout or hyperuricemia?*

Chart 9: Knowledge of Available Gout Treatment Regimens



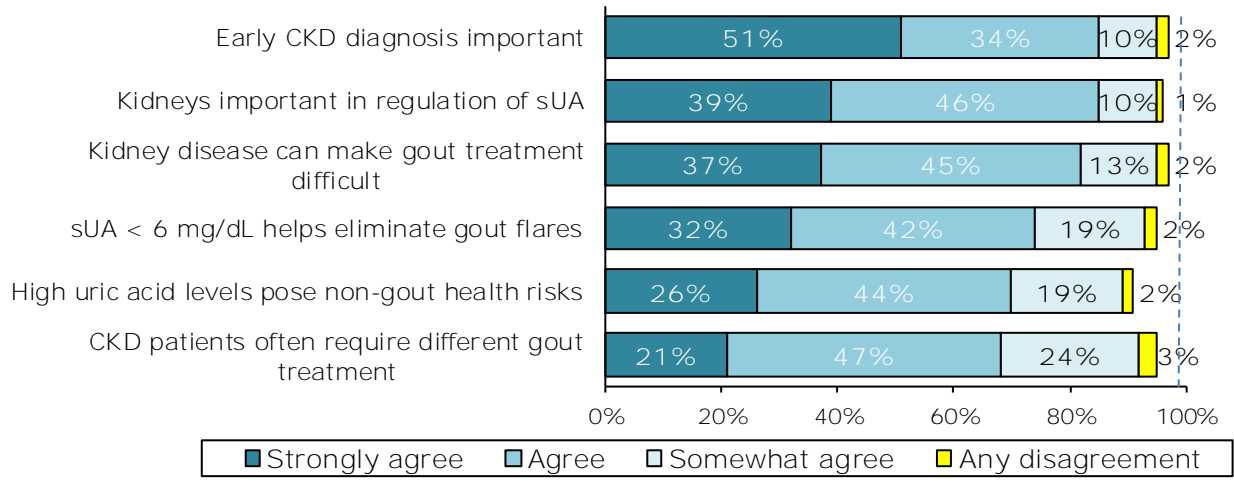
- Three-quarters of the professionals aware of the connection between gout and CKD feel their knowledge of available treatment regimens for gout or hyperuricemia is very good (76% vs. 54% who are not aware of the connection), including 30% of all aware professionals who say it is excellent (vs. 13% of those unaware of the gout-CKD connection).
- Professionals who see more patients rate their knowledge higher, rising from 63% saying their knowledge is very good or excellent when they see less than 100 patients per week, to 70% who see 100-149 patients per week and 86% who see 150 patients or more.

- Nephrologists rate their knowledge higher than do those in primary care (just 18% vs. 37% say less than good), with 40% of nephrologists claiming it is excellent (vs. 18% of primary care professionals).
 - Knowledge is higher when the professional has more patients with gout, with 85% who say more than 25% of their patients have gout rating it very good (vs. 64% who have fewer patients with gout), including 41% (vs. 20%) who say their knowledge of available gout treatments is excellent.
 - More of the professionals whose practice is not part of a patient-centered medical home say their knowledge is excellent (31% vs. 18% whose practice is currently or soon to be a PCMH).
 - More than a third of those without a surveillance process to routinely review patient records admit their knowledge is not very good (38% vs. 23% with a surveillance process) and just 19% (vs. 30%) say it is excellent.
3. Nearly all professionals are at least somewhat aware of the key aspects of gout and CKD (a total of 90%-95%). Those who are not, are more likely to indicate they are unsure (a total of 3%-9% neither agree nor disagree with the statements) rather than misinformed (1%-3% disagree). – *Table 11, Question 10—How much do you agree or disagree with each of these statements? a) Patients with CKD often require a different treatment for addressing gout or hyperuricemia, b) Kidney disease can make gout more difficult to treat, c) The kidneys play an important role in regulation of sUA, d) Keeping patient uric acid levels under 6 mg/dl goes a long way to eliminating their gout flares, e) High uric acid levels pose health risks beyond gout, and f) Early diagnosis of CKD is an important step in limiting the progression of kidney disease.*
4. Less than half strongly agree, however, with any area of knowledge other than the importance of early CKD diagnosis (21%-39% vs. 51% for “early diagnosis of CKD is an important step in limiting the progression of kidney disease”). **Just 21%, for example, strongly agree that “patients with CKD often require a different treatment regimen for addressing gout or hyperuricemia” and 26% that “high uric acid levels pose health risks beyond gout.”** – *Table 11, Question 10—How much do you agree or disagree with each of these statements?*

Regionally:

- More in the West strongly agree that early diagnosis of CKD is an important step in limiting the progression of kidney disease (64%), particularly compared to the Midwest (36%; it is 43% in the Northeast and 57% in the South).
- More in the West strongly agree that the kidneys play an important role in regulation of sUA (49%), particularly compared to the Midwest (29%; it is 32% in the Northeast and 43% in the South). No one outside of the Midwest disagrees (3% in the Midwest disagree, all older nephrologists aware of the gout-CKD tie with at least 25% of the patients having gout).

Chart 10: Awareness of Key Aspects of Gout and CKD



- Fewer in the Northeast strongly agree that kidney disease can make gout more difficult to treat (24%), particularly compared to the South and West (44%; it is 32% in the Midwest).
- More in the West strongly agree that high uric acid levels pose health risks beyond gout (37%), particularly compared to the Northeast (16%) and Midwest (18%; it is 32% in the South).

More in nephrology than in primary care:

- Strongly agree that early diagnosis of CKD is an important step in limiting the progression of kidney disease (59% vs. 47%).
- Strongly agree that the kidneys play an important role in regulation of sUA (47% vs. 35%).
- Disagree that high uric acid levels pose health risks beyond gout (4% vs. 0%).

More with very good knowledge of gout treatment regimens:

- Strongly agree that early diagnosis of CKD is an important step in limiting the progression of kidneys disease (57% vs. 39% whose knowledge is less than good).
- Strongly agree that the kidneys play an important role in regulation of sUA (44% vs. 26% whose knowledge is less than good).
- Strongly agree that kidney disease can make gout more difficult to treat (41% vs. 27% whose knowledge is less than good).

- Strongly agree that keeping patient uric acid levels under 6 mg/dL goes a long way to eliminating their gout flares (38% vs. 20% whose knowledge is less than good).
- Strongly agree that high uric acid levels pose health risks beyond gout (32% vs. 16% whose knowledge is less than good).
- Strongly agree that patients with CKD often require a different treatment regimen for addressing gout or hyperuricemia (24% vs. 13% who admit their knowledge is no better than good).

More who are aware the connection between CKD and gout:

- Strongly agree that the kidneys play an important role in regulation of sUA (45% vs. 26% unaware).
- Strongly agree that kidney disease can make gout more difficult to treat (44% vs. 20% unaware).
- Strongly agree that keeping patient uric acid levels under 6 mg/dL goes a long way to eliminating their gout flares (45% vs. 26% unaware).
- Strongly agree that patients with CKD often require a different treatment regimen for addressing gout or hyperuricemia (25% vs. 11% unaware).

More who have a 25% or greater concentration of patients with gout:

- Strongly agree that the kidneys play an important role in regulation of sUA (49% vs. 36% with proportionately fewer patients with gout).
- Strongly agree that patients with CKD often require a different treatment regimen for addressing gout or hyperuricemia (33% vs. 17% with proportionately fewer patients with gout or hyperuricemia).

More with a surveillance process:

- Strongly agree that the kidneys play an important role in regulation of sUA (44% vs. 33% without a surveillance process).
- Strongly agree that kidney disease can make gout more difficult to treat (42% vs. 31% without a surveillance process for patient records).
- Strongly agree that high uric acid levels pose health risks beyond gout (33% vs. 19% whose knowledge is less than good).
- Strongly agree that patients with CKD often require a different treatment regimen for addressing gout or hyperuricemia (28% vs. 13% without a surveillance process to routinely review patient records).

More who have been in medical practice for more than 25 years:

- Strongly agree that keeping patient uric acid levels under 6 mg/dL goes a long way to eliminating their gout flares (41% vs. 29% with less experience).

More in solo practice:

- Strongly agree that high uric acid levels pose health risks beyond gout (41% vs. 21%-25% in group practice and 24% in a hospital or other health care facility).

More females than males:

- Strongly agree that early diagnosis of CKD is an important step in the limiting the progression of kidney disease (60% vs. 48%).

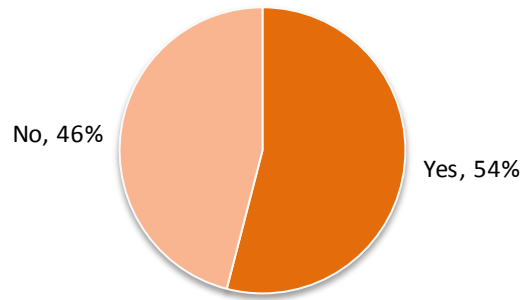
More who see at least 150 patients per week:

- Disagree that early diagnosis of CKD is an important step in the limiting the progression of kidney disease (6% vs. 1% who see fewer patients). Just 88% of them agree (vs. 96%-97%).
- Disagree that the kidneys play an important role in regulation of sUA (4% vs. 0% who see fewer patients).
- Disagree that kidney disease can make gout more difficult to treat (6% vs. 1%-2% who typically see fewer patients).
- Disagree that keeping patient uric acid levels under 6 mg/dL goes a long way to eliminating their gout flares (6% vs. 1%-2% who typically see fewer patients). Just 82% of them agree (vs. 94%-97%).
- Disagree that high uric acid levels pose health risks beyond gout (6% vs. 1% who typically see fewer patients).
- Disagree that patients with CKD often require a different treatment regimen for addressing gout or hyperuricemia (10% vs. 1%-3% who typically see fewer patients). Just 84% of them agree (vs. 91%-95%).

Current Approach

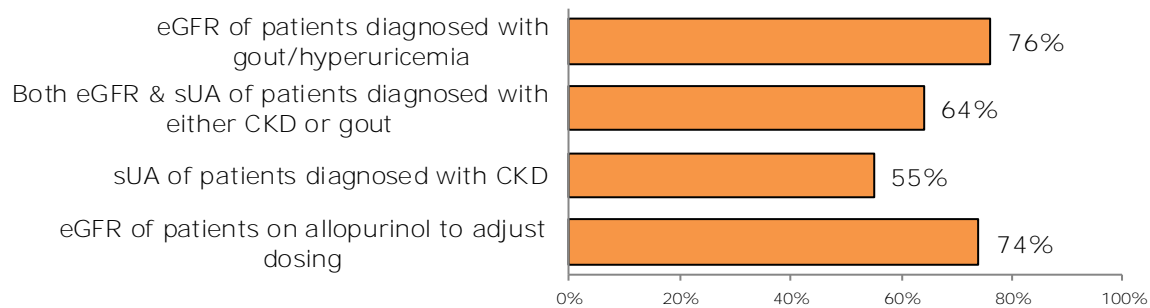
1. Only about half of the health care professionals have a surveillance process to routinely review the records of their patients to evaluate whether to screen for other conditions such as gout or CKD (54%). – *Table 6, Question 5—Does your practice have a surveillance process where the records of patients with diseases such as CKD or gout are routinely reviewed to evaluate whether to run tests such as sUA and eGFR?*
 - Surveillance processes are less common in the South (43% have one vs. 56%-59% elsewhere).

Chart 11: Have Process of Routine Review of Patient Records



- The larger the patient load, the greater the likelihood that the practice has a surveillance process, rising from 41% when the professional typically sees less than 100 patients a week to 68% when it is 150 or more.
 - More of those who feel they have very good knowledge of the gout treatment regimens have a surveillance process (57% vs. 40% of those who rate their knowledge lower).
2. No more than two-thirds of the patients diagnosed with CKD are being screened with sUA (an estimated 55% are screened with just the sUA and 64% with both the sUA and eGFR). – *Table 7, Question 6—For approximately what percentage of your patients would you say that you check: a) eGFR of patients diagnosed with gout/hyperuricemia, b) sUA of patients diagnosed with CKD, c) eGFR of patients on allopurinol to adjust dosing, and d) both eGFR and sUA of patients diagnosed with either CKD or gout?*
 3. Three-quarters of the patients diagnosed with gout/hyperuricemia are being screened with eGFR (an estimated 76% are screened with just the eGFR and 64% with both the sUA and eGFR). This is comparable to the 74% of patients on allopurinol being screened with the eGFR to adjust dosing. – *Table 7, Question 6—For approximately what percentage of your patients would you say that you check: a) eGFR of patients diagnosed with gout/hyperuricemia, b) sUA of patients diagnosed with CKD, c) eGFR of patients on allopurinol to adjust dosing, and d) both eGFR and sUA of patients diagnosed with either CKD or gout?*

Chart 12: Patients Screened with eGFR and sUA

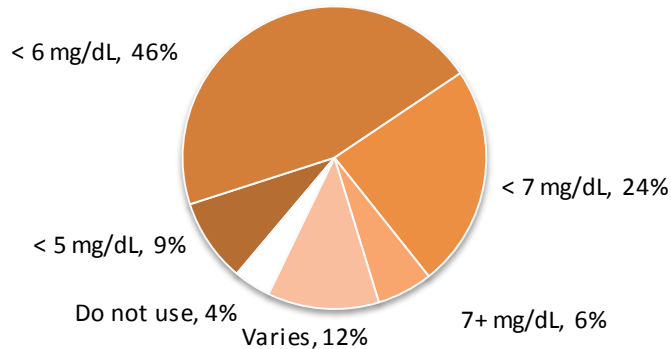


- Primary care professionals screen fewer patients than do nephrologists (an average of 69% vs. 88% with eGFR of patients diagnosed with gout/hyperuricemia, 59% vs. 73% with eGFR and sUA of patients diagnosed with either CKD or gout, 52% vs. 61% with sUA of patients diagnosed with CKD, and 68% vs. 85% with eGFR of patients on allopurinol to adjust dosing).
- Female professionals tend to report higher percentages than do their male counterparts (an average of 80% vs. 74% for eGFR of patients diagnosed with gout/hyperuricemia, 60% vs. 53% for sUA of patients diagnosed with CKD, 70% vs. 62% for eGFR and sUA of patients diagnosed with either CKD or gout, and 77% vs. 73% for eGFR of patients on allopurinol to adjust dosing).
- Screenings are more common when the professional is aware of the tie between gout and CKD (checking the eGFR on an average for 79% of patients diagnosed with gout/hyperuricemia vs. 68% unaware of the link, eGFR of 77% of patients on allopurinol to adjust dosing vs. 67%, eGFR and sUA of 67% of patients diagnosed with either CKD or gout vs. 56%, and 58% sUA of patients diagnosed with CKD vs. 47% unaware of the link).
- More of the patients are screened when professionals have very good knowledge of gout treatment regimens (an average of 78% with the eGFR for patients diagnosed with gout/hyperuricemia vs. 69% less knowledgeable, 77% with the eGFR for patients on allopurinol to adjust dosing vs. 66%, 68% with eGFR and sUA for patients diagnosed with either CKD or gout vs. 51%, and 58% with sUA for patients diagnosed with CKD vs. 43% whose knowledge is no better than good).
- Patients with CKD who go to a multi-specialty group practice are less likely to be screened for gout/hyperuricemia and vice versa. Professionals at multi-specialty group practices report checking the sUA of an average of just 47% of the patients diagnosed with CKD (vs. 58%-61% in solo or single specialty group practices) and the eGFR of 66% (vs. 71%-82%) of patients diagnosed with gout/hyperuricemia. They say they check 61% of their patients diagnosed with either CKD or gout with both the eGFR and sUA (vs. 66%-70% in solo or single specialty group practices).
- More CKD patients receive sUA screenings when at least a quarter of the professional's patients has gout, with an average of 62% screened with sUA (vs. 52% with fewer proportionately fewer gout patients) and 70% screened with both eGFR and sUA (vs. 62%). It is quite possible that their higher concentration of gout patients is a direct outgrowth of their higher level of screening.
- Patients diagnosed with CKD are more likely to be screened with sUA when the practice has a surveillance process to review records (an average

of 60% vs. 49% without such a process are screened with the sUA; a total of 67% vs. 61% are screened with both the sUA and eGFR).

- The Midwest is more likely to check the sUA of patients diagnosed with CKD (checking an average of 61% vs. 50% in the Northeast and 54%-55% in the South and West), but less likely to check the eGFR of patients on allopurinol to adjust dosing (checking 66% vs. 74%-78% elsewhere).
 - The more patients the professional sees, the less likely they are to screen them with the eGFR, including patients diagnosed with gout/hyperuricemia (screening 82% when the professional sees less than 100 patients a week, dropping to 75% when see 100-149 and 60% when 150 or more) and on allopurinol to adjust dosing (dropping from 76%-78% when see less than 150 patients to 59% when see more). Professionals who see 150 or more patients per week are also a little less likely to screen patients diagnosed with either CKD or gout with both eGFR and sUA (58% vs. 65% when see fewer), although not the sUA of patients diagnosed with CKD (56%, comparable to the 54%-55% of those with smaller patient loads).
4. Most professionals set a target sUA level for their patients with gout or hyperuricemia (96%), with a total of 55% setting it at less than 6 mg/dL . Just 12% say the level varies according to clinical assessment and/or imaging results. – *Table 8, Question 7— In general, what level of serum uric acid (sUA measured as mg/dL) do you target for gout/hyperuricemia patients?*

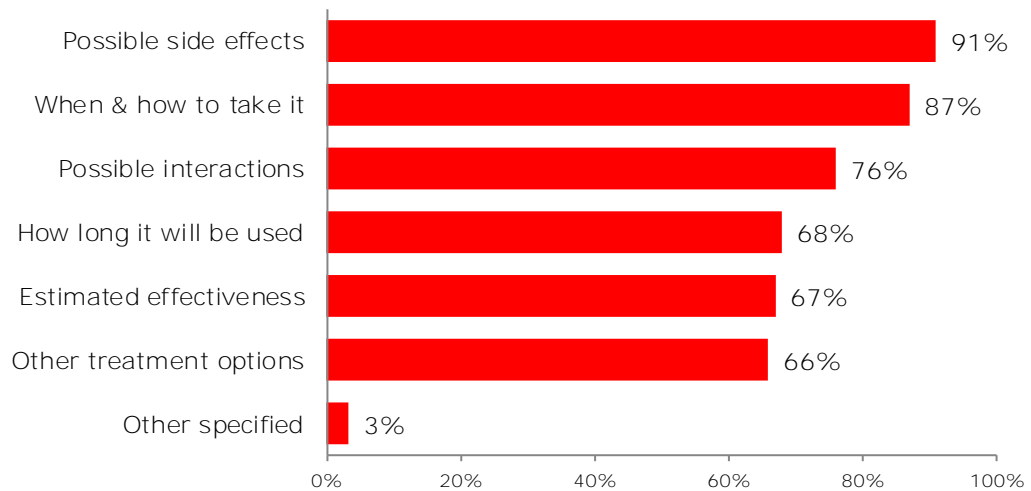
Chart 13: Target sUA level for Gout/Hyperuricemia Patients



- Half of the professionals aged 45 or older target less than 6 mg/dL (50% vs. 37% who are younger) rather than a level that is higher (27% vs. 36%) or lower (8% vs. 11%).
- Professionals in the West are as likely to target less than 7 mg/dL as less than 6 (33%-34%) while everywhere else more target less than 6 mg/dL (44%-54%) rather than less than 7 (15%-25%). The preference for less than 6 mg/dL is most pronounced in the Northeast where only 15% target less than 7 mg/dL (and 54% less than 6 mg/dL).

- One in six professionals who see 150 or more patients a week target less than 5 mg/dL (16% vs. 4% who see less than 100 and 10% who see 100-149 in the typical week).
 - More who have a surveillance process to review patient records target less than 5 mg/dL (13% vs. 4% without such a process).
 - A quarter of the professionals who still use at least some paper records say it varies according to clinical assessment and/or imaging results (25% vs. 8% who rely solely on electronic records). Those who do have a specific target most often cite less than 6 mg/dL (35%) as do those who rely on electronic records (49%).
5. Possible side effects are an important part of discussions in prescribing a new medication (91% of the health care professionals routinely discuss this with the patient) along with when and how to take the medication (87%). Fewer professionals routinely discuss other aspects, including other treatment options (66%), estimated effectiveness (67%), how long it will be used (68%), and possible interactions (76%). The few who noted additional topics most often mentioned cost/insurance coverage (1% of all the professionals thought to mention this) and the benefits (1%). Other individuals mentioned generic options, monitoring labs, diet, patient values/preferences, and patient goals.
 – Table 9, Question 8—When you prescribe a new medication, which of these do you routinely discuss with the patient?

Chart 14: What Discussed When Prescribing a New Medication



- Nearly all the nephrologists say they routinely discuss possible side effects (96% vs. 89% in primary care).
- Possible interactions are discussed more in practices that are, or soon will be, a patient-centered medical home (81% vs. 73% without such certification) as is the estimated effectiveness (74% vs. 61%).

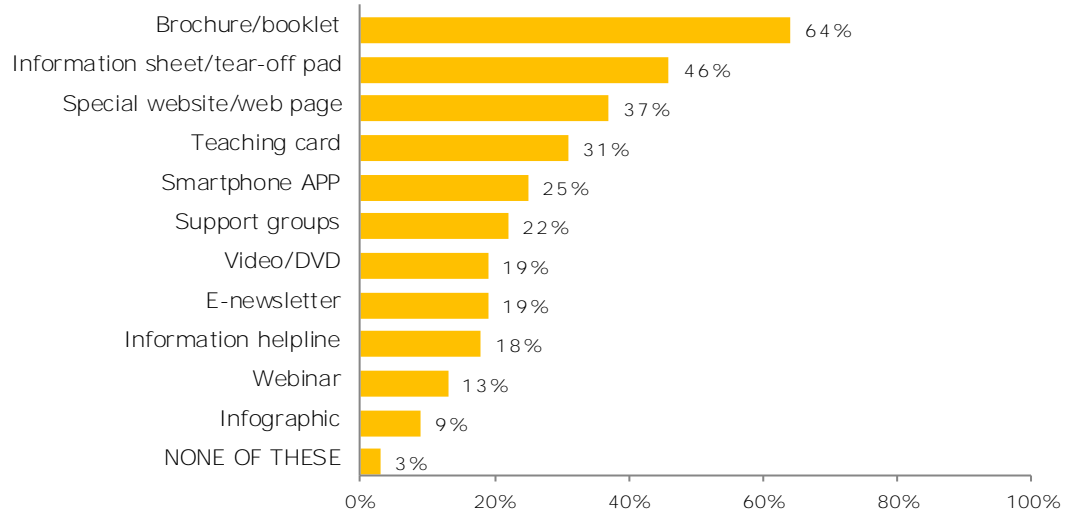
- Professionals aware of the tie between gout and CKD are more likely to mention possible interactions (80% vs. 67% unaware of the possible link), how long it will be used (71% vs. 60%), and estimated effectiveness (70% vs. 59%).
- More in practices where they have a surveillance process to review patient records discuss possible interactions (82% vs. 69% without such a process) and how long it will be used (73% vs. 61%).
- Three-quarters of those who use at least some paper records discuss how long it will be used (78% vs. 65% who rely solely on electronic records).
- Those who see less than 100 patients per week are less likely to mention how long it will be used and the estimated effectiveness (60% mention each of these vs. 69%-78% who typically see more patients).
- Professionals in the South are less likely than those elsewhere to discuss estimated effectiveness (55% vs. 76% in the Northeast and 67%-73% elsewhere), possible interactions (64% vs. 86% in the Midwest and 78%-81% elsewhere), and possible side effects (85% vs. 97% in the Midwest and 92%-94% elsewhere).

Communication Preferences

For Patients

1. Nearly all feel that education in some form would be helpful for patients who want to learn more about gout or hyperuricemia (97%), averaging 3.0 different forms of interest. – *Table 19, Question 12—What types of patient educational resources would be useful for patients who want to learn more about gout or hyperuricemia?*
 - Professionals in solo practice are a little less interested in patient education (92% vs. 98% in group practice and 97% in facilities).
2. Professionals are most interested in brochures or booklets for their patients (64%) or information sheets/tear-off pad (46%). A third thinks teaching cards would be useful (31%). Altogether, 83% mention at least one print material, making it the most popular category. Almost two-thirds (57%) mention at least one electronic option, or roughly twice as many as mention either a class-like option (27%) or some form of personal communications (33%). In addition to the print materials, there is fairly widespread support for special website/web page (37%), smartphone apps (25%), and support groups (22%). No other option is of interest to more than one in five professionals. – *Table 19, Question 12—What types of patient educational resources would be useful for patients who want to learn more about gout or hyperuricemia?*

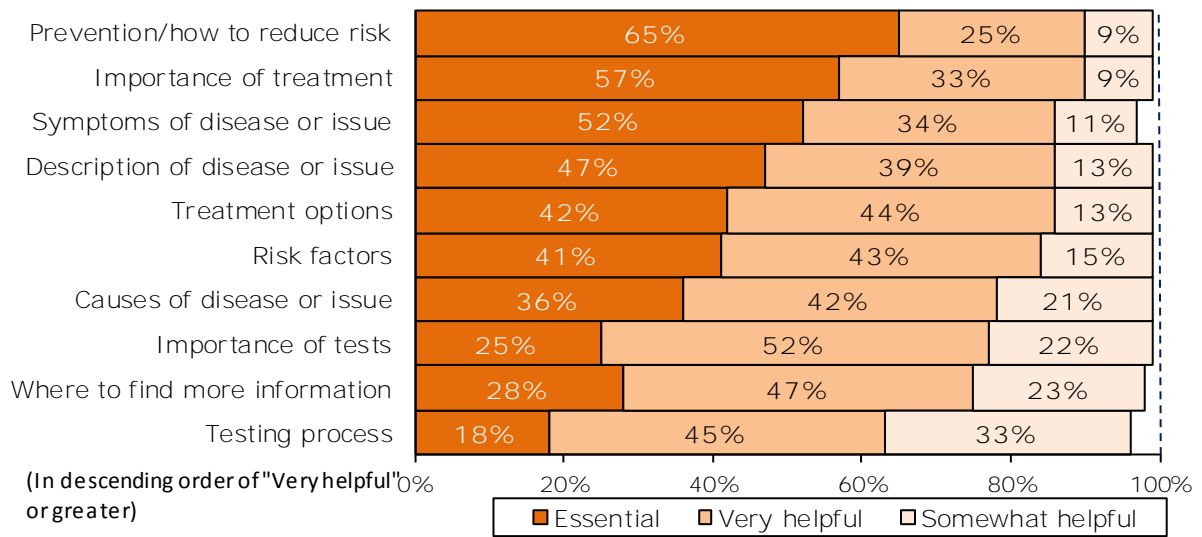
Chart 15: Preferred Patient Educational Resources



- There are some key generational differences, although brochures/booklets top the list for both those under 45 (59%) and older (66%). Professionals over the age of 44 are more interested than those who are younger in information sheets/tear-off pads (51% vs. 34%) and e-newsletters (23% vs. 9%), and less interested in infographics (5% vs. 18% who are younger) and smartphone APPs (22% vs. 33%). Professionals who have been practicing for more than 25 years show similar preferences with the addition of a greater preference for personal communications (41% vs. 30% with less experience).
- Group practices are particularly interested in print materials (87%-88% list at least one vs. 71% in solo practice and 79% in health care facilities).
- Print materials are particularly appealing when the practice is not certified as a patient-centered medical home (88% list at least one vs. 77% when certified), particularly brochures/booklets (73% vs. 51%). Those not in a patient-centered medical home have less interest than others in electronic options (50% vs. 66% certified), particularly e-newsletters (15% vs. 23%) and smartphone apps (19% vs. 34%).
- The Northeast has a greater preference than elsewhere for information sheets/tear-off pads (57% vs. 36% in the Midwest and 40%-49% in the West and South), with almost as many in that region interested in them as brochures/booklets (65%).
- Information sheets/tear off pads decrease in importance with heavier patient loads, dropping from 53% when see less than 100 patients per week to 45% when see 100-149 and 32% when see 150 or more.

- Half of the practices without a surveillance process to review patient records are interested in information sheets/tear off pads (53% vs. 40% of those with such a process), or almost as many as see brochures/booklets as useful (67%). Few are interested in class-like options (20% vs. 33% with a surveillance process) such as video/DVD (13% vs. 23%).
 - A third of the primary care professionals are interested in some form of personal communications (36% vs. 26% in nephrology), whether an information helpline (22% vs. 9% of nephrologists) or support groups (23%, comparable to the 20% of nephrologists). They are also more interested than are nephrologists in e-newsletters (21% vs. 13%) and webinars (15% vs. 7%), although their top choices are brochure/booklet (61%), information sheet/tear-off pad (48%), special website/web page (38%), teaching card (30%), and smartphone app (28%).
 - Personal communications are of more interest to professionals who are aware of the possible link between gout and CKD (38% vs. 21% who are unaware are interested in at least one such resource), particularly support groups (26% vs. 13%). Still, even more of those who are aware of the CKD-gout tie see print materials (83%) and electronic options (57%) as useful for patients.
6. Professionals feel that many topics related to gout and hyperuricemia would be very helpful to include in patient educational resources (63%-90%). At least half feel it is essential to include prevention/how to reduce risk (65%), the importance of treatment (57%), symptom of the disease (52%), and description of the disease (42%). Even the topic with the least interest—the testing process—is seen as helpful by virtually all of the professionals (96%). – Tables 20-30, Question 13—How important is it that each of these be included in patient educational resources related to gout or hyperuricemia?

Chart 16: Topics Important in Patient Gout Educational Resources



Prevention/how to reduce risk is more often essential when:

- Use at least some paper records (74% vs. 62% who rely solely on EMR).
- See fewer patients per week (71% seeing less than 100 patients, dropping to 63% when 100-149 and 54% when 150 or more).
- Female (73% vs. 62% of males).
- Practice outside the Midwest (63%-68% vs. 53% in the Midwest). A total of 5% in the Midwest see it as not at all helpful (vs. 1% or less elsewhere).

Importance of treatment is more often essential when:

- Aware that gout is closely related to kidney disease (61% vs. 47% not aware).
- Have very good or excellent knowledge of gout treatment regimens (61% vs. 45% less knowledgeable).
- Less than 150 patients per week (50% vs. 42% with more).
- Female (68% vs. 53% of males).

Symptoms of disease or issue are more important when:

- See fewer patients per week (very helpful to 91% seeing less than 100 patients and 88% when 100-149, dropping to 74% when 150 or more).
- Practice outside the Midwest (very helpful to 88%-90% vs. 77% in the Midwest).
- Have very good or excellent knowledge of gout treatment regimens (essential to 54% vs. 44% less knowledgeable).

Description of disease or issue is more often essential when:

- Practice in the South (56% vs. 39%-45% elsewhere). No one outside the Midwest sees it as not at all helpful (5% in Midwest say this).
- Less than 100 patients per week (56% vs. 36%-42% with more).
- Do not have a surveillance process to review patient records (52% vs. 43% with such a process).

Treatment options are more important when:

- Have very good gout treatment knowledge (very helpful to 88% vs. 77% less knowledgeable).

Risk factors are more important when:

- See fewer patients per week (very helpful to 90% seeing less than 100 patients to 83% when 100-149 and 72% when 150 or more).

- Only use electronic records (very helpful to 86% vs. 77% using paper).
- Have a higher concentration of patients with gout (essential to 54% vs. 37% when less than 25% of the patients have gout).
- Have very good or excellent knowledge of gout treatment regimens (essential to 46% vs. 29% less knowledgeable).
- Aware that gout is closely related to kidney disease (essential to 45% vs. 32% not aware).
- Practice in the South (essential to 48% vs. 32% in the Northeast and 36%-44% in the Midwest and West). No one outside the Midwest sees it as not at all helpful (5% in Midwest say this).

Causes of disease or issue are more often essential when:

- Female (45% vs. 33% of males).
- Practice in the South (43% vs. 29%-36% elsewhere). A total of 30% in the Midwest say it is not very helpful (vs. 19%-22% elsewhere).

Importance of tests is more often essential when:

- Have a solo practice (37% vs. 20%-26% in group practice or a facility).
- Have a higher concentration of patients with gout (33% vs. 23% when less than 25% of the patients have gout).
- Aware that gout is closely related to kidney disease (28% vs. 19% not aware).

Where to find more information is more important when:

- Aware that gout is closely related to kidney disease (very helpful to 78% vs. 99% not aware).
- Practice in the South (very helpful to 82% vs. 71%-74% elsewhere).
- Under 45 years of age (essential to 35% vs. 25% who are older).
- Female (essential to 39% vs. 25% of males).

Testing process is more often essential when:

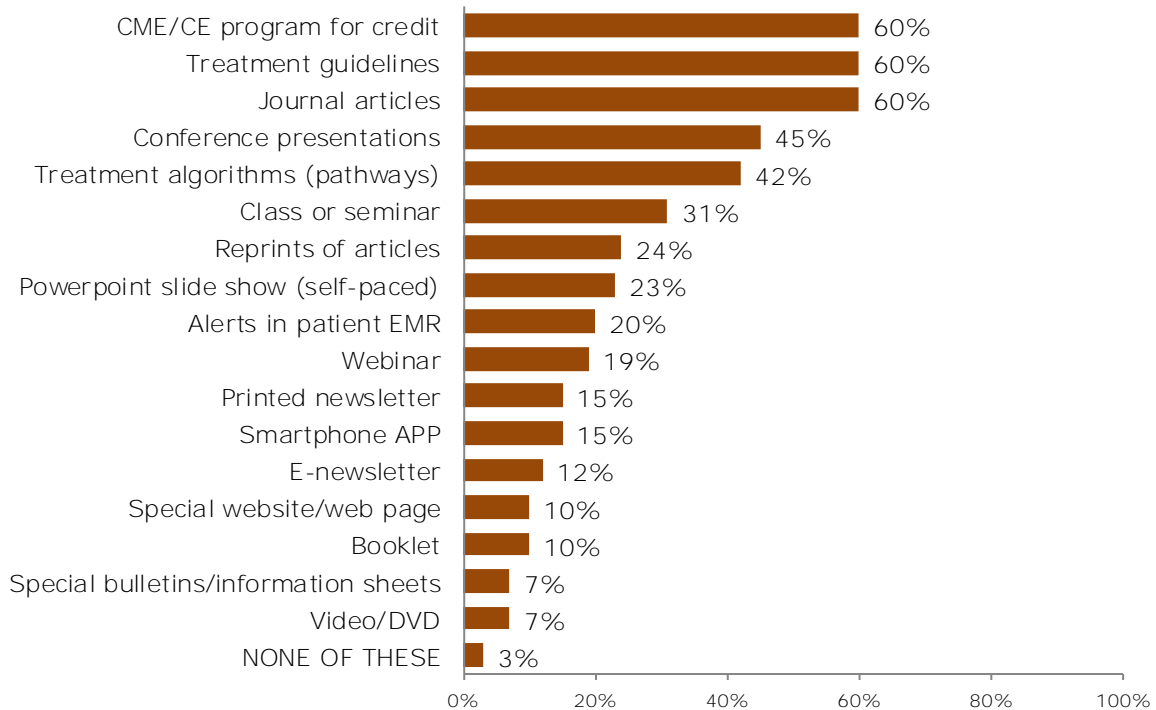
- Have a surveillance process to review patient records (22% vs. 13% without such a process).
- Have a higher concentration of patients with gout (30% vs. 14% when less than 25% of the patients have gout).
- Under 45 years of age (24% vs. 15% when older).

- Female (25% vs. 15% of males).
- Practice in the South (24% vs. 12%-18% elsewhere).

For Professionals

11. Nearly all feel that education in some form would be helpful for learning more about guidelines for patient care (97%), averaging 4.6 different forms of interest. – Table 18, Question 11—Which, if any, of these educational formats do you find helpful for learning more about guidelines for patient care, such as those related to patients with CKD and gout/hyperuricemia?
12. Professionals are most interested in CME/CE programs for credit, treatment guidelines, and journal articles (60% interest in each of these) along with conference presentations (45%), and treatment algorithms (42%). A total of 81% are interested in at least one class-like instruction option, although not necessarily one that is self-paced (7% video/DVD, 19% webinar, and 23% self-paced Powerpoint presentations). Nearly as many are interested in one or more print options (72%) as class-like instruction (81%), or almost twice as many as favored one or more electronic options (41%). – Table 18, Question 11—Which, if any, of these educational formats do you find helpful for learning more about guidelines for patient care, such as those related to patients with CKD and gout/hyperuricemia?

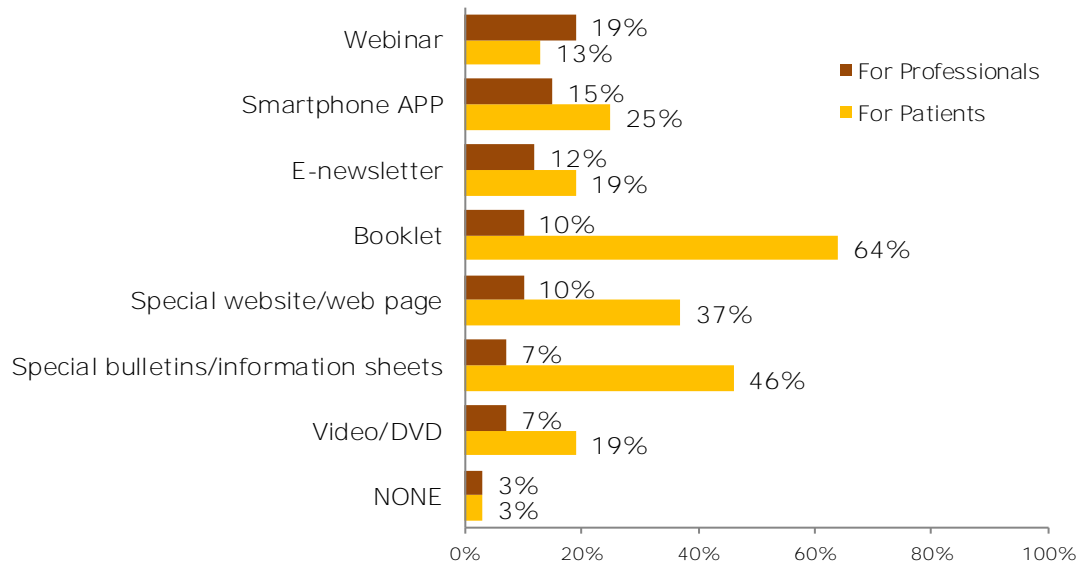
Chart 17: Preferred Education Formats for Learning About Guidelines



- Primary care professional preferences often differ from those of nephrologists. The top choice of those in primary care is CME/CE program for credit (65% vs. 50% of nephrologists), fourth on the list for nephrologists behind journal articles (62%), treatment guidelines (59%), and conference presentations (53% vs. 40% for primary care). The other top choices in primary care are often similar to those for nephrologists: treatment guidelines (60%), journal articles (59%), and treatment algorithms (pathways) (46% vs. 35% in nephrology). More in primary care than in nephrology are interested in a class or seminar (30% vs. 18%), alerts in patient EMR (24% vs. 10%), and webinars (22% vs. 13%).
- Guidelines are especially appealing to those in a multi-specialty group practice (80% finds at least one useful vs. 61%-67% practicing in other settings), including treatment guidelines (68% vs. 49% in solo practice and 55%-60% in single specialty group practice and facilities) and treatment algorithms (pathways) (55% vs. 27% solo, 34% facility, and 42% single specialty group practice). Professionals in multi-specialty group practice are also more interested in electronic options (52% vs. 35%-38% in other settings), particularly alerts in patient EMR (30% vs. 10% solo, 16% single specialty group practice and 24% facility).
- More in hospitals and other health care facilities are interested in print material than are professionals in other settings (87% vs. 64% in single specialty group practice, 73% in solo practice, and 77% in multi-specialty group practice), especially journal articles (79% vs. 54%-55% operating in a single specialty setting and 53% in a multi-specialty group practice).
- Print material is of much more interest to older professionals (79% vs. 56% under the age of 45), including journal articles (65% vs. 49%), reprints of articles (28% vs. 14%), printed newsletter (18% vs. 8%), booklet (11% vs. 5%), and special bulletins/information sheets (9% vs. 3%). They are also more interested in webinars (22% vs. 12%).
- Professionals with the most experience express even more interest in print material (85% vs. 67% who have been practicing less than 26 years), including journal articles (69% vs. 57% practicing less), reprints of articles (39% vs. 19%), printed newsletter (21% vs. 12%), and booklet (17% vs. 7%). They also have above-average interest in a class or seminar (36% vs. 23%), self-paced Powerpoint presentation (31% vs. 20%), webinar (29% vs. 16%), and video/DVD (16% vs. 4%).
- Professionals who are aware of the close relationship between CKD and gout are much more interested in reprints of articles than special bulletins or information sheets (28% to 6%), although these two options are equally appealing to their unaware colleagues (11%-12%).

- More than half of the professionals who admit their knowledge of gout treatments is not very good like treatment algorithms (55% vs. 36% when more knowledgeable) and a total of 78% (vs. 66% more knowledgeable) are interested in guidelines.
 - Webinars are particularly appealing in the Midwest (30% vs. 10% in the West, 15% in the South, and 25% in the Northeast), although even more there like treatment guidelines (65%), journal articles (55%), CME/CE program for credit (52%), conference presentations (44%), and treatment algorithms (42%).
 - Females are more interested than their male colleagues in self-paced Powerpoint presentation/slide shows (31% vs. 20%), but fewer find reprints of articles (13% vs. 27%) and video/DVD (3% vs. 9%) useful.
 - One in five professionals with a high concentration of gout patients is interested in a smartphone app (21% vs. 12% when less than 25% of their patients have gout).
 - Half of the professionals in a patient-centered medical home find electronic options useful (47% vs. 37% not in a certified practice), most notably alerts in patient EMR (27% vs. 14%) and smartphone apps (20% vs. 11%).
 - More of the professionals with a surveillance process to review patient records find electronic options useful (48% vs. 34% without such a process), including special website/web page (15% vs. 4% without). Few without the surveillance process find video/DVD useful (3% vs. 11% with such a process).
13. Some print and electronic formats are more widely preferred for patients than for the professionals themselves, most notably booklets (64% feel they would be useful for patients, 10% find them helpful for themselves), special bulletins or information sheets (46% say helpful for patients, 7% for professionals), and special websites or web pages (37% for patients, 10% for professionals). Webinars (13%-19%) and e-newsletters (12%-19%), by comparison, are seen as equally appropriate for both patients and professionals. – *Tables 18-19, Question 11—Which, if any, of these educational formats do you find helpful for learning more about guidelines for patient care, such as those related to patients with CKD and gout/hyperuricemia?, Question 12—What types of patient educational resources would be useful for patients who want to learn more about gout or hyperuricemia?*

Chart 18: Preference Differences in Selected Education Formats
(for formats asked about for both groups)



METHODOLOGY

This report is based on the findings of an Internet survey among 302 medical professionals who provide primary or nephrology medical care in the United States to adults with CKD.

Universe

The universe is providers of primary and nephrology medical care to adult patients with CKD.

Sampling

Medical professionals who work in nephrology or primary care were randomly selected from an opt-in research panel of 6.5 million active panelists, all carefully screened for authenticity and legitimacy on an ongoing basis. Selected professionals received an e-mail invitation with a link to the survey.

Questionnaire

Chléire helped design a questionnaire to meet the research objectives. The exact **wording and question number are included in the “Detailed Findings” section.**

Responses

Responses were collected August 15-21, 2017. Survey invitations were e-mailed in small groups August 15-18.

	<u>#</u>	<u>%</u>
Received invitation	4,228	
Answered at least 1 question	463	11%
Partially completed (excluded)	-36	
Completed	427	10%
Did not qualify or fill quota (excluded)	-125	-3%
Included in report	302	7%

Analysis

This report highlights statistically significant differences between groups based on statistical tests. A randomly drawn sample of 302 allows us to say with 95% confidence that the maximum sampling error is $\pm 5.6\%$ for results based on the total.