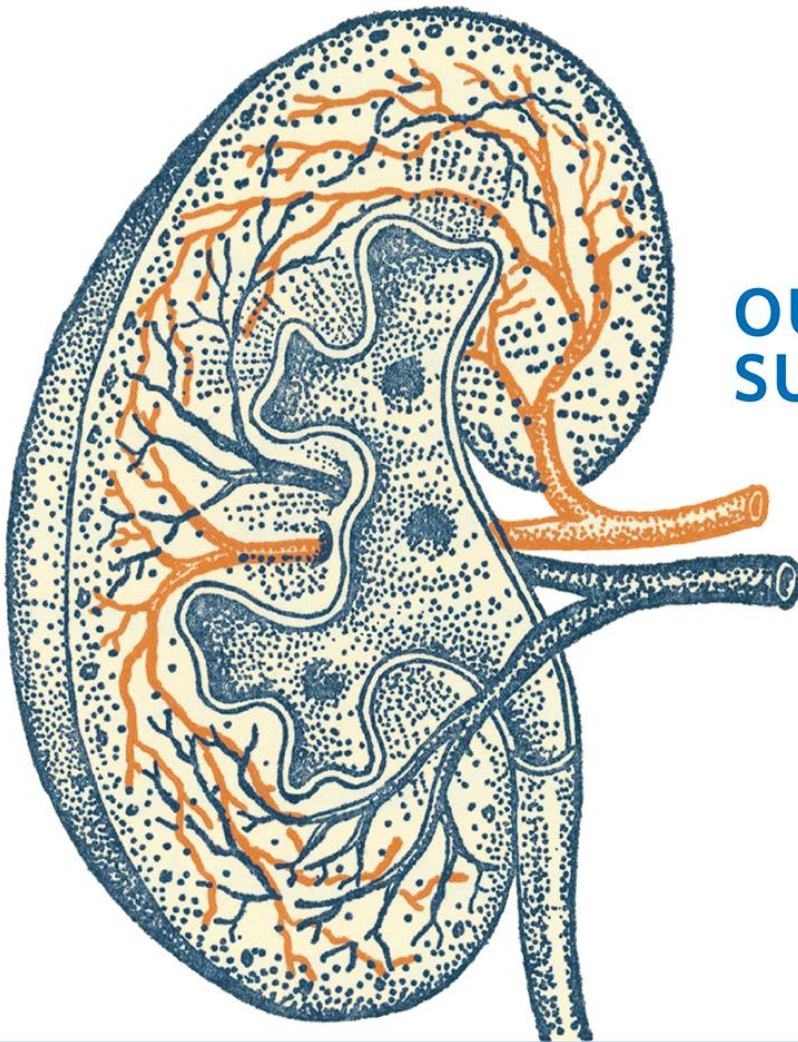


Improving Knowledge and Overcoming  
Barriers to Optimal Therapy in  
**METASTATIC RENAL CELL  
CARCINOMA**



**OUTCOMES  
SUMMARY 2015**

## *Executive Summary*

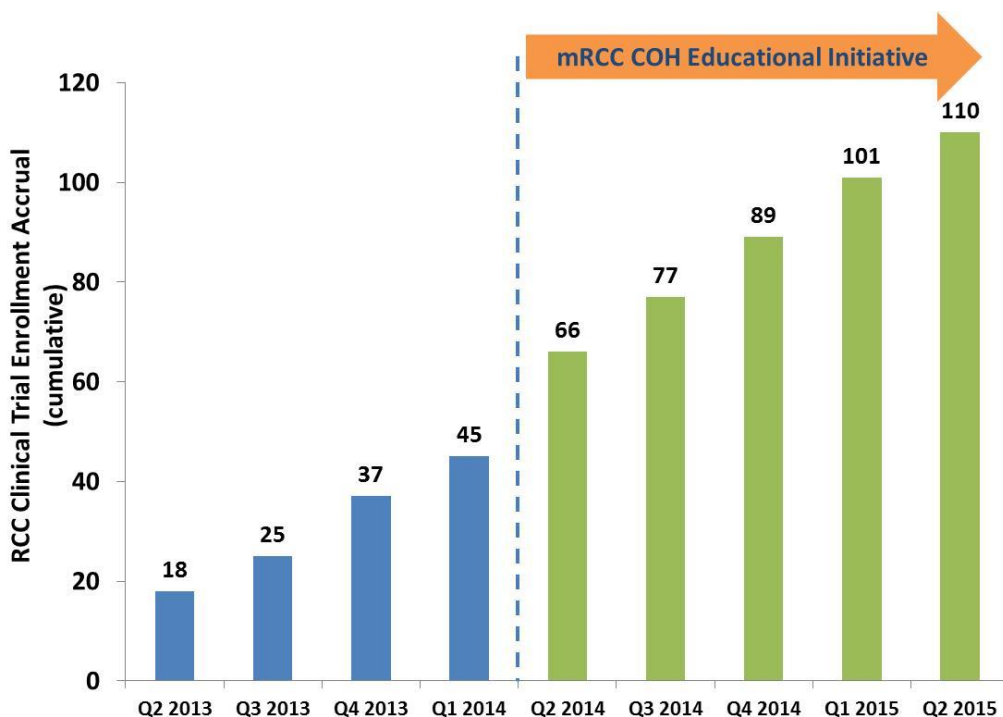
With support from Pfizer, City of Hope and The France Foundation developed an educational initiative with two overarching goals—to increase knowledge of (and adherence to) expert treatment recommendations for metastatic renal cell carcinoma (mRCC); and to improve access and visibility of clinical trials for mRCC patients in the Southern California area. The primary target audience for this initiative was oncologists, urologists and other healthcare providers who are treating mRCC patients, including City of Hope clinicians, community clinicians in private practice, and those in community hospitals.

A series of six dinner meetings and six grand rounds were conducted that focused on two learning objectives: 1) Apply knowledge of expert treatment recommendations to the management of patients with mRCC; 2) Identify and address barriers to the enrollment of patients with mRCC in regionally available clinical trials. Additional education was developed and available on the City of Hope CME website including 3 podcasts featuring experts from City of Hope and the University of Southern California, and an archived grand rounds lecture by Sumanta Pal, MD.

Over 325 clinicians participated in this initiative through dinner meetings, grand rounds, and web-based education. Significant knowledge gains were demonstrated on pre/posttests associated with the dinner meetings and grand rounds, reflecting improved understanding of NCCN treatment guidelines for first- and subsequent-line treatment, treatment-related side effects, clinical trials, and emerging therapies for patients with mRCC.

- Dinner meetings: Overall pretest vs posttest, 47% vs 77%, respectively ( $P = 0.003$ , Chi-Square)
- Grand rounds: Overall pretest vs posttest, 41% vs 68%, respectively ( $P = 0.001$ , Chi-Square)

Enrollment in RCC clinical trials at City of Hope increased over the course of this initiative; 14 patients/quarter compared with 11/quarter in the year prior to the project.



Forty-nine and 62% of clinicians who completed evaluations at the dinner meetings and grand rounds, respectively, planned to make practice changes as a result of participating in the education. The most commonly identified planned changes were to apply knowledge of expert recommendations to the management of patients with mRCC, improve the clinical benefit of targeted agents for mRCC through effective side effect management and dose titration, and to increase enrollment of patients with mRCC in regionally available clinical trials. Clinicians were very committed to following through on these planned changes, which may enhance quality of care and translate into improved outcomes for patients with mRCC.

## Introduction

Based on our experience with referrals from community oncologists and urologists managing renal cancer patients and low clinical trial enrollment figures, there is a clear need to educate physicians on dosing guidelines and treatment options for patients with metastatic renal cell carcinoma (mRCC). Lack of knowledge on new guidelines and the availability of clinical trials may be impacting treatment choices and hindering the provision of optimal care. City of Hope and The France Foundation designed an educational initiative to address these gaps in clinical practice with feedback provided by our target audience. This initiative was made possible by educational support from Pfizer.

The two main objectives of this initiative were to:

- Increase physician adherence to NCCN dosing recommendations for mRCC patients treated in the community
  - As optimal dosing can significantly impact patient outcomes, oncologists' and urologists' lack of knowledge regarding recommended guidelines on dosing may reduce treatment efficacy
  - Introduction of newer, more efficacious and well-tolerated therapies will enable community oncologists to manage various cancer patients at the local level, thereby decreasing the number of unnecessary referrals
- Improve access and visibility of clinical trials for mRCC patients in the community
  - As advancements in oncology research continue to unfold, the role of clinical trials will remain a significant part of patient management
  - Lack of awareness by clinicians regarding available clinical trial enrollment opportunities may limit patients' access to all available treatment options

The specific learning objectives were:

- Apply knowledge of expert treatment recommendations to the management of patients with mRCC
- Identify and address barriers to the enrollment of patients with mRCC in regionally available clinical trials

The primary target audience for this initiative was oncologists, urologists and other healthcare providers who are treating mRCC patients. Participants included:

- City of Hope clinicians
- Community oncologists and urologists in private practice
- Community hospital oncologists and urologists

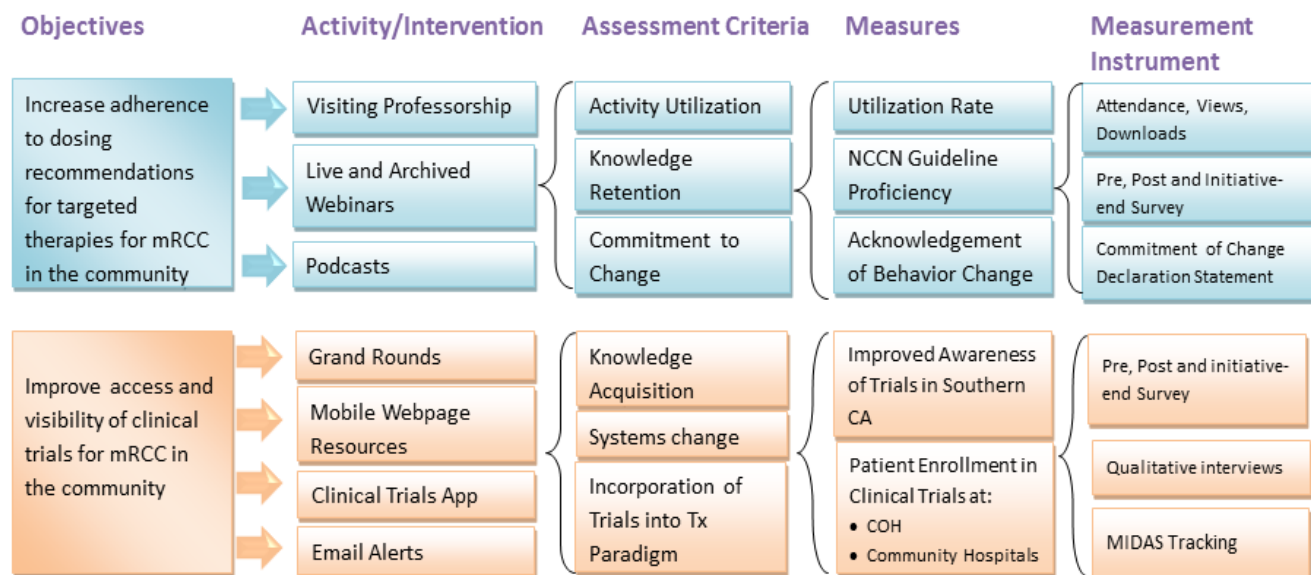
The multidisciplinary members of the steering committee who assisted in the implementation of the project are listed in **Table 1**.

**Table 1: City of Hope Steering Committee and Faculty Presenters**

Member	Title
Sumanta Kumar Pal, MD	Assistant Professor, City of Hope
Robert J. Morgan, Jr, MD, FACP	Professor of Medical Oncology, City of Hope
James Ward, MD	Assistant Clinical Professor, University of California, Irvine
Clayton Lau, MD	Associate Professor of Surgery, City of Hope
Przemyslaw Twardowski, MD	Clinical Professor, City of Hope
Courtney Carmichael, MSN, ANP-C, AOCNP	Oncology Nurse Practitioner, City of Hope
David Quinn, MD	Associate Professor of Medicine and Urology, University of Southern California
Tanya Dorff, MD	Assistant Professor, University of Southern California
Jeremy Jones, MD	Assistant Professor, City of Hope
Lucille Leong, MD	Clinical Professor of Medical Oncology, City of Hope
Crystal Saavedra	Director, Department of CME, City of Hope
Sara Scorcio	Manager, Department of CME, City of Hope

A schematic for the project is included in **Figure 1**, and project milestones are summarized in **Table 2**.

**Figure 1: Comprehensive Assessment Plan Designed to Evaluate Initiative Impact**



**Table 2: Project Timeline**

Milestones	Date
<b>Live Dinner Meetings</b>	
Targeted Therapies for mRCC: Side Effect Management and Optimal Dosing	March 6, 2014
Optimal Sequencing of Therapy for Patients with mRCC	June 25, 2014
Emerging Therapies for mRCC and Ongoing Clinical Trials in Southern California	September 24, 2014
Surgical Concepts in mRCC and Adjuvant Therapy	December 10, 2014
Unique Histologies and Biology	March 25, 2015
A Comprehensive Overview of mRCC	June 24, 2015
<b>Grand Rounds: Current Strategies for the Treatment of mRCC</b>	
Antelope Valley Hospital	March 20, 2014
Glendale Adventist Hospital	July 2, 2014
Garfield MC	October 21, 2014
Multidisciplinary Approaches to Cancer Treatment Annual Conference	November 8, 2014
Inter Community Hospital	May 12, 2015
San Antonio Regional Hospital	June 11, 2015
<b>Peer-to-Peer Dialogues</b>	
Management of a Treatment Naïve Patient with Metastatic Renal Cell Carcinoma	March 2014
Surgically Resectable RCC and the Role of Adjuvant Therapy	May 2014
Second-line Treatment Considerations for Patients with mRCC after Progression with Tyrosine Kinase Inhibitor Therapy	July 2014

## Promotional Plan

The dinner meetings and grand rounds were promoted by a series of eblasts and a brochure mailer. 4500 brochures and 6 eblasts were sent to 14,000 recipients to promote the dinner meetings and grand rounds. The grand rounds locations were identified by focusing on community hospitals that represent both the closest hospitals to City of Hope and the largest sources of oncology referrals.

**PRESENTING A DINNER SERIES ON**  
Improving Knowledge and Overcoming Barriers to Optimal Therapy in Metastatic Renal Cell Carcinoma  
6 to 8 p.m.



**WHO SHOULD ATTEND**  
Urologists, internists, health care professionals with metastatic renal cell carcinoma

**WHERE**  
City of Hope  
1135 Rosemont Drive  
Pasadena, CA 91103

**REGISTER**  
Required: 7 days  
register online at [corg.cme](http://corg.cme)

Or see additional registration information and form below.

**City of Hope**  
RESEARCH • TREATMENT • CURES

**TOPIC:**  
OPTIMAL SEQUENCING OF THERAPY FOR PATIENTS WITH mRCC  
**WHEN:**  
Wednesday, June 25, 2014 • 6-8 p.m.  
**FACULTY:**  
David I. Quinn, M.B.B.S., Ph.D., Director, USC Norris Cancer Hospital & Clinics  
Sumanta Kumar Pal, M.D., Assistant Professor of Clinical Medicine - City of Hope

**TOPIC:**  
EMERGING THERAPIES FOR mRCC AND ONGOING CLINICAL TRIALS IN SOUTHERN CALIFORNIA  
**WHEN:**  
Wednesday, September 24, 2014 • 6-8 p.m.  
**FACULTY:**  
Tanya Dorff, M.D., Assistant Professor of Clinical Medicine - University of Southern California  
Jeremy Jones, Ph.D., Assistant Professor of Molecular Pharmacology - City of Hope

**TOPIC:**  
SURGICAL CONCEPTS IN mRCC AND ADJUVANT THERAPY  
**WHEN:**  
Wednesday, December 10, 2014 • 6-8 p.m.  
**FACULTY:**  
Clayton Lau, M.D., Assistant Clinical Professor - City of Hope  
David I. Quinn, M.B.B.S., Ph.D., Medical Director, USC Norris Cancer Hospital & Clinics


**TOPIC:**  
UNIQUE HISTOLOGIES AND BIOLOGY  
**WHEN:**  
Wednesday, March 25, 2015 • 6-8 p.m.  
**FACULTY:**  
Jeremy Jones, Ph.D., Assistant Professor of Molecular Pharmacology - City of Hope  
Przemyslaw Twardowski, M.D., Clinical Professor - City of Hope

**TOPIC:**  
A COMPREHENSIVE OVERVIEW OF mRCC  
**WHEN:**  
Wednesday, June 24, 2015 • 6-8 p.m.  
**FACULTY:**  
TBD

**HOW TO REGISTER**

**City of Hope**  
RESEARCH • TREATMENT • CURES

**Unique Histologies and Biology**



**WHEN**  
Wednesday, March 25, 2015  
6 to 8 p.m.

**WHERE**  
Brookside Golf Course  
1135 Rosemont Drive  
Pasadena, CA 91103

**FOR MORE INFORMATION**  
Please contact Continuing Medical Education at (626) 214-2622 or [cmec@coh.org](mailto:cmec@coh.org)

**TARGET AUDIENCE**  
This activity is intended for Urologists, general surgeons, internists, and other allied health care professionals who treat patients with metastatic renal cell carcinoma.

**CME/CREDIT**  
City of Hope is accredited by the Commission on Cancer for Continuing Medical Education to provide continuing medical education (CME) for physicians.

City of Hope designates this live activity for a maximum of 1.0 CME Category 1 Credit™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**GOALS/OBJECTIVES**

- Apply knowledge of expert treatment recommendations to the management of patients with metastatic renal cell carcinoma (mRCC).
- Identify and address barriers to the enrollment of patients with mRCC in regionally available clinical trials.

**FACULTY**  
Jeremy Jones, Ph.D., Assistant Professor of Molecular Pharmacology - City of Hope  
Przemyslaw Twardowski, M.D., Clinical Professor - City of Hope

In collaboration with  
**The France Foundation**

This site is receiving this offer because you registered against them by eblast.  
[View Offer](#) [Cancel Offer](#)  
 This offer will expire by: 04/01/2015 10:00 AM Pacific Time. No refund.



## Summary of Key Findings

### Dinner Meetings

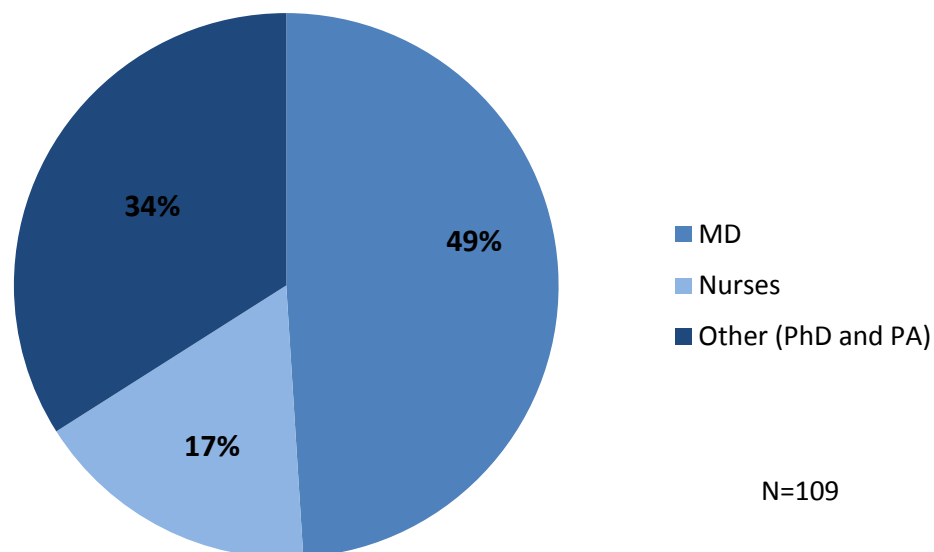
Dinner meetings were hosted at City of Hope, Duarte California and at the Brookside Golf Course in Pasadena, California in an effort to engage clinicians at City of Hope and in the surrounding area with an interest in RCC. **Table 3** includes the topics covered at the dinner meetings and corresponding attendees.

**Table 3: Dinner Meeting Participation**

Live Dinner Meetings	Learners
Targeted Therapies for mRCC: Side Effect Management and Optimal Dosing	24
Optimal Sequencing of Therapy for Patients with mRCC	18
Emerging Therapies for mRCC and Ongoing Clinical Trials in Southern California	12
Surgical Concepts in mRCC and Adjuvant Therapy	35
Unique Histologies and Biology	16
A Comprehensive Overview of mRCC	20

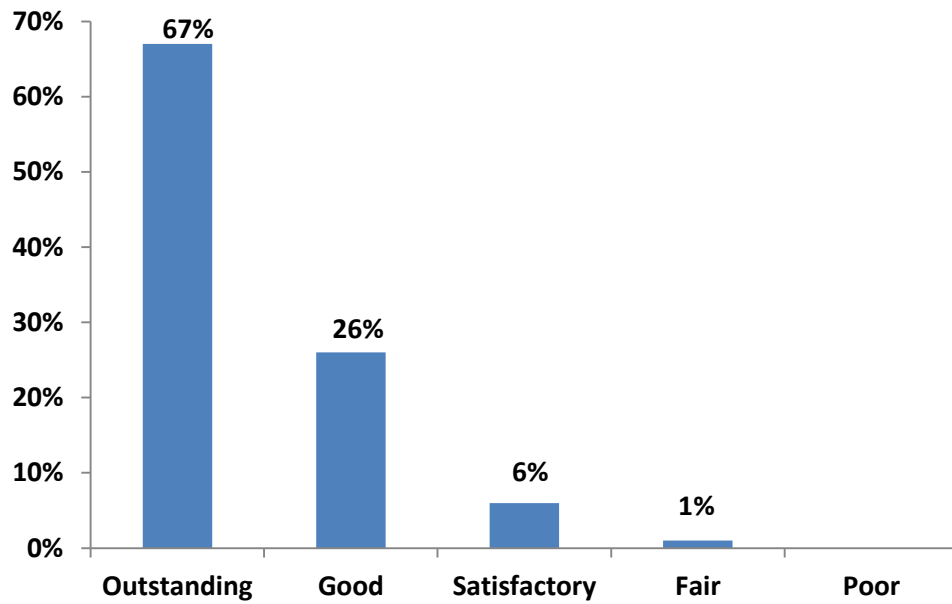
Overall demographics of the dinner meeting attendees are shown in **Figure 2**, and the majority of attendees indicated that the learning objectives were met (**Figure 3**).

**Figure 2: Dinner Meetings–Demographics**

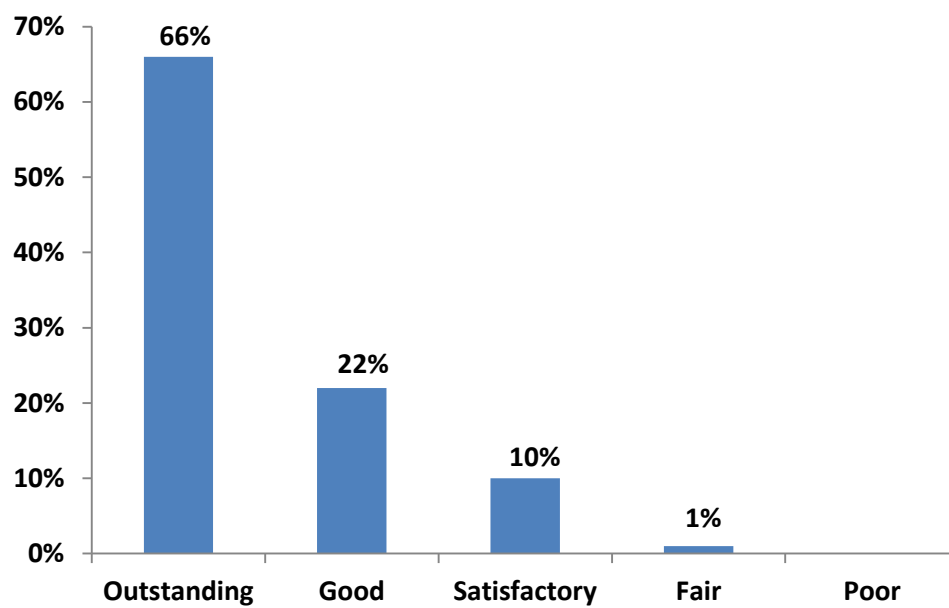


**Figure 3: Dinner Meetings–Learning Objectives Met**

Apply knowledge of expert treatment recommendations to the management of patients with mRCC



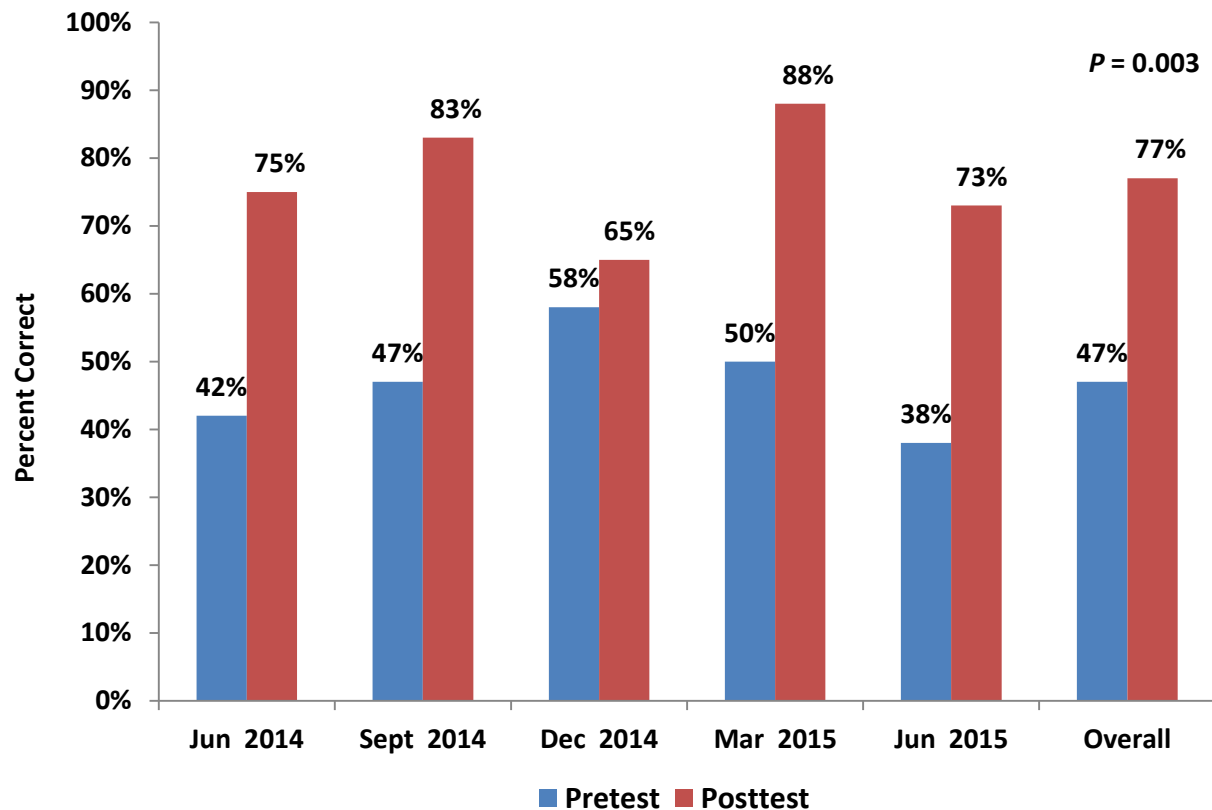
Identify and address barriers to the enrollment of patients with mRCC in regionally available clinical trials





At each dinner meeting, 4 questions were used to assess attendees' mRCC-related knowledge before and at the conclusion of the presentation (test data were not retained at the March 2014 meeting). Gains in knowledge occurred at each meeting, and the overall average pretest and posttest scores were 47% and 77%, respectively ( $P = 0.003$ , Chi-Square) (**Figure 4**).

**Figure 4: Dinner Meetings—Knowledge Gain +30%**



Content areas with the largest absolute pre- to posttest improvement in scores at dinner meetings were:

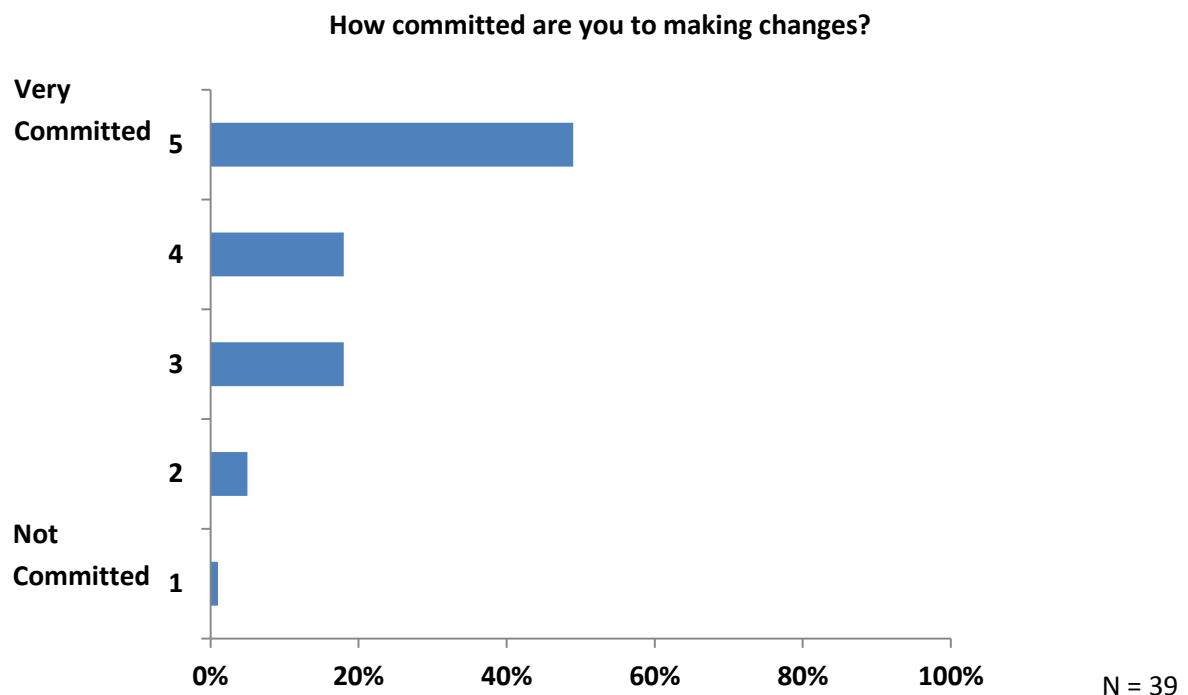
- +45 Outcomes of the RECORD-3 trial
- +45 Mechanism of action of nivolumab
- +50 RCC histology and therapeutic agents in the ESPN trial
- +50 Inhibitors of MET in development for papillary RCC
- +53 First-line therapy for mRCC
- +56 Results of the AXIS trial
- +61 Inhibitor of MET and VEGFR2 in clinical trials for mRCC

On evaluations, 49% of respondents indicated that they plan to make changes to their practice as a result of the information presented. Practice changes identified by attendees include:

- Apply knowledge of expert recommendations to the management of patients with mRCC (10)
- Improve the clinical benefit of targeted agents for mRCC through effective side effect management and dose titration (8)
- Increase enrollment of patients with mRCC in regionally available clinical trials (6)
- Obtain second opinion on pathology for RCC (1)
- Follow NCCN Guidelines (1)
- Refer patients with mRCC to urologists for cytoreductive nephrectomy (1)
- Use temsirolimus in high risk renal cancer patients (1)
- Refer to a competent oncologist (1)
- Better assessment with regard to treatment side effects (1)
- Other (3)

Most of the clinicians who indicated intent to make changes are very committed to these plans (Figure 5).

**Figure 5: Dinner Meetings–Intent-to-Change**



### Grand Rounds

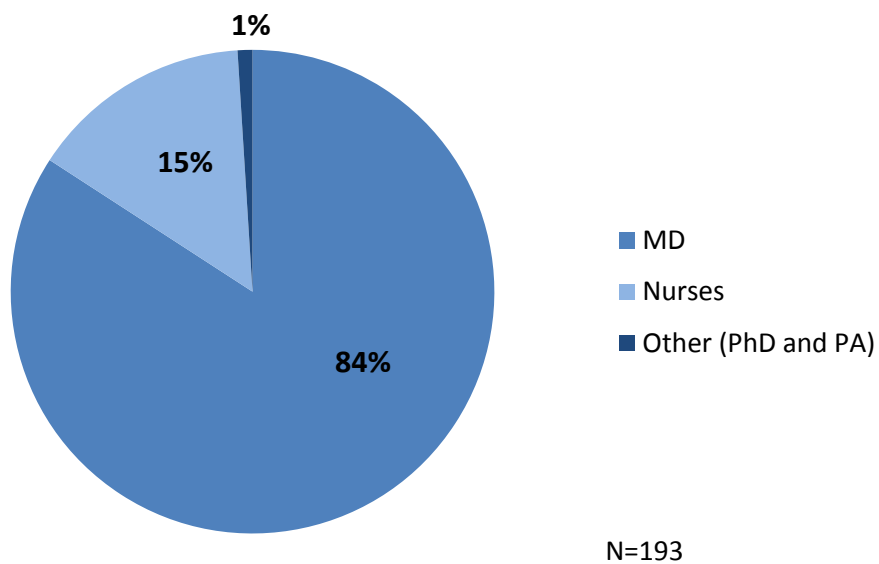
Six grand rounds (*Current Strategies for the Treatment of mRCC*) were conducted to further the reach of this educational initiative. The location and attendance for the grand rounds are summarized in **Table 5**.

**Table 5: Grand Rounds Participation**

Grand Rounds	Learners
Antelope Valley Hospital	4
Glendale Adventist Hospital	48
Garfield MC	9
Multidisciplinary Approaches to Cancer Treatment Annual Conference	35
Inter Community Hospital	55
San Antonio Regional Hospital	46

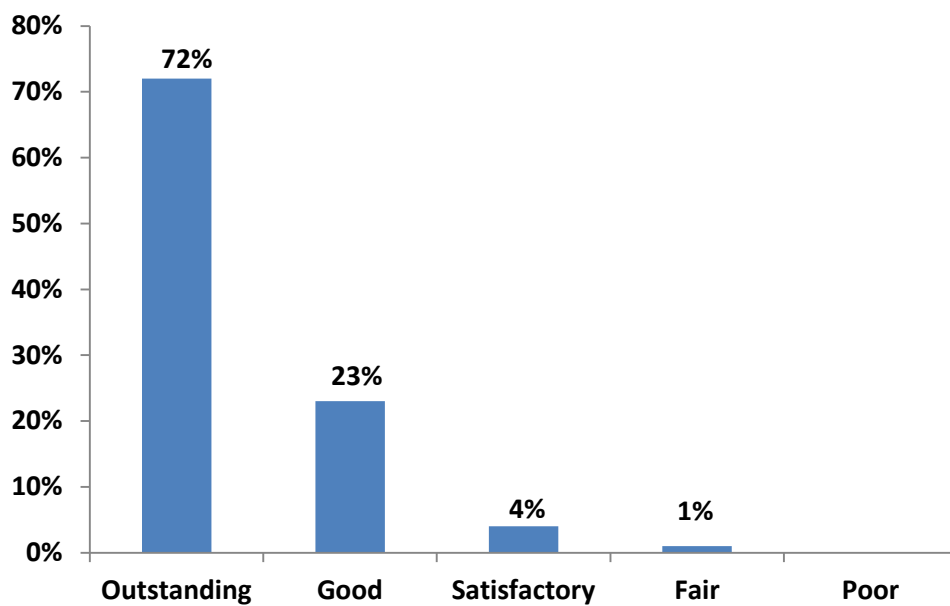
Overall demographics of the grand rounds attendees are shown in **Figure 6**, and the extent to which the learning objectives were met is shown in **Figure 7**.

**Figure 6: Grand Rounds–Demographics**

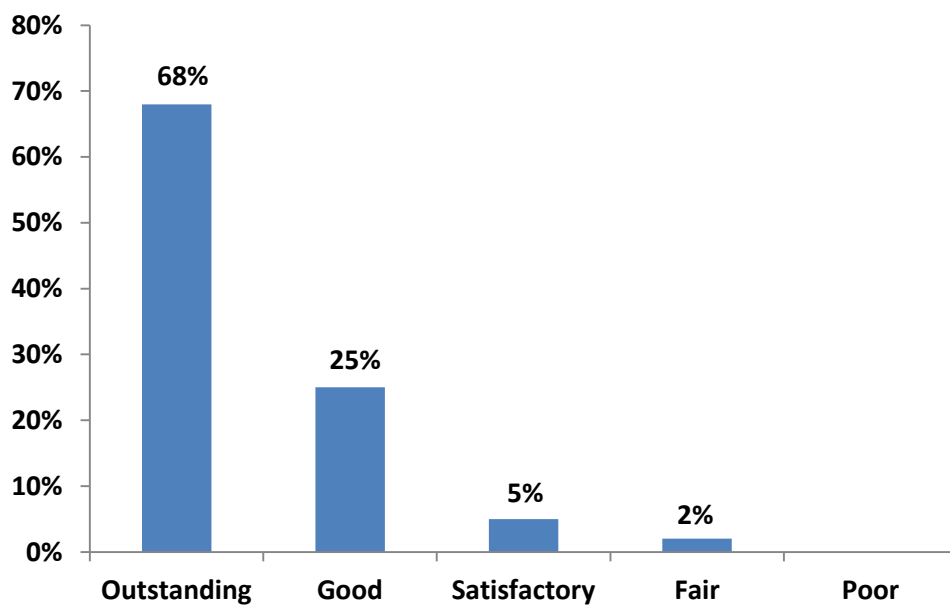


**Figure 7: Grand Rounds–Learning Objectives Met**

Apply knowledge of expert treatment recommendations to the management of patients with mRCC

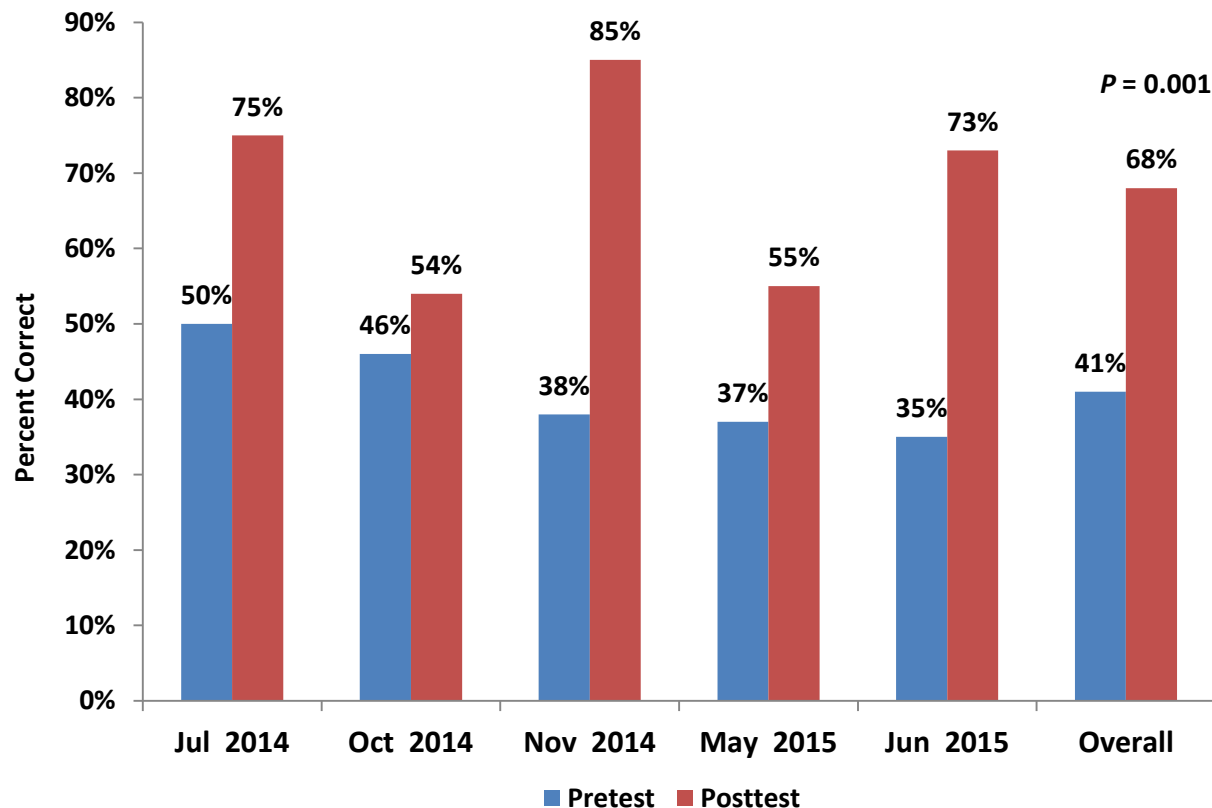


Identify and address barriers to the enrollment of patients with mRCC in regionally available clinical trials



As with the dinner meetings, 4 questions were used to assess attendees' mRCC-related knowledge before and at the conclusion of grand rounds presentations (test data were not collected at the March 2014 meeting). Gains in knowledge by individual grand rounds, and the overall average pretest and posttest scores (41% and 68%, respectively,  $P = 0.001$ , Chi-Square) are shown in **Figure 8**.

**Figure 8: Grand Rounds—Knowledge Gain +27%**



Content areas with the largest absolute pre- to posttest improvement in scores at grand rounds were:

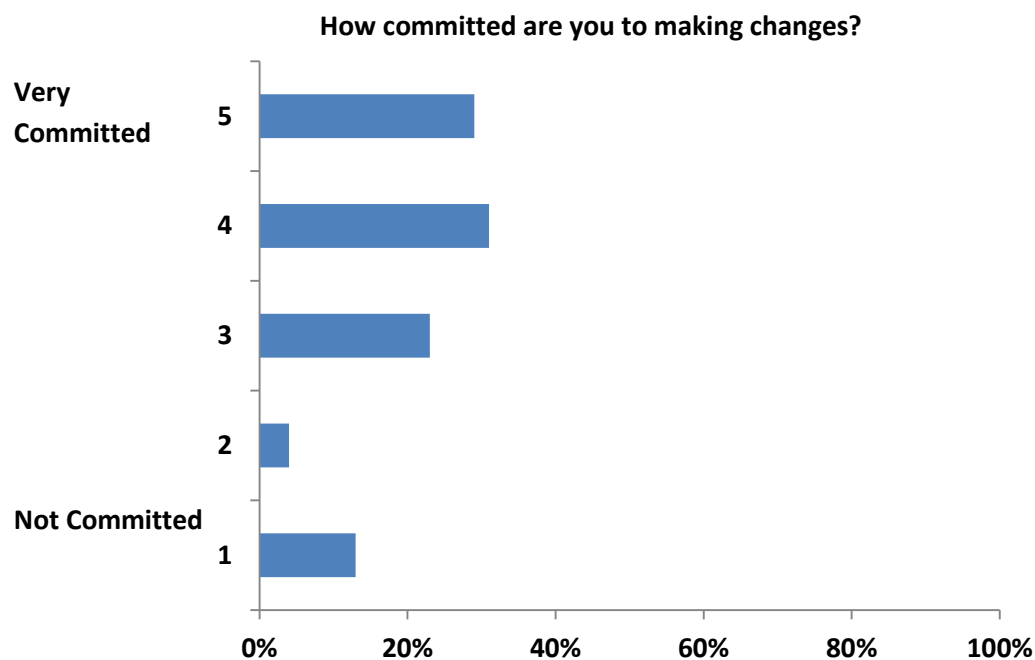
- +49 Second-line treatment following progression on a tyrosine kinase inhibitor
- +51 Treatment related toxicity and clinical outcomes
- +53 First-line therapy for mRCC per NCCN guidelines
- +68 Limiting issue with VEGF- and mTOR-targeted therapies for mRCC

On evaluations, 62% of respondents indicated that they plan to make changes to their practice as a result of the information presented. Practice changes identified by attendees include:

- Apply knowledge of expert recommendations to the management of patients with mRCC (42)
- Improve the clinical benefit of targeted agents for mRCC through effective side effect management and dose titration (25)
- Increase enrollment of patients with mRCC in regionally available clinical trials (26)
- Follow renal cell cancer guidelines (1)
- Other (8)

Commitment to make these practice changes is illustrated in **Figure 9**.

**Figure 9: Grand Rounds–Intent to Change**



N = 78

### ***Web-Based Educational Activities***

The following enduring mRCC educational activities were developed as part of this initiative and are accessible on the City of Hope CME website:

#### Peer-to-Peer Dialogs

##### *Management of a Treatment Naïve Patient with Metastatic Renal Cell Carcinoma*

Sumanta Pal, MD, City of Hope Medical Center

Tanya Dorff, MD, University of Southern California

##### *Surgically Resectable RCC and the Role of Adjuvant Therapy*

Clayton Stephen Lau, MD, City of Hope Medical Center

David Ian Quinn, MBBS, PhD, FRACP, University of Southern California Norris Comprehensive Cancer Center

##### *Second-line Treatment Considerations for Patients with mRCC after Progression with Tyrosine Kinase Inhibitor Therapy*

Przemyslaw Twardowski, MD, City of Hope Comprehensive Cancer Center

Courtney Carmichael, MSN, ANP-C, AOCNP, City of Hope

#### Archived Grand Rounds Presentation

##### *Current Strategies for the Treatment of mRCC*

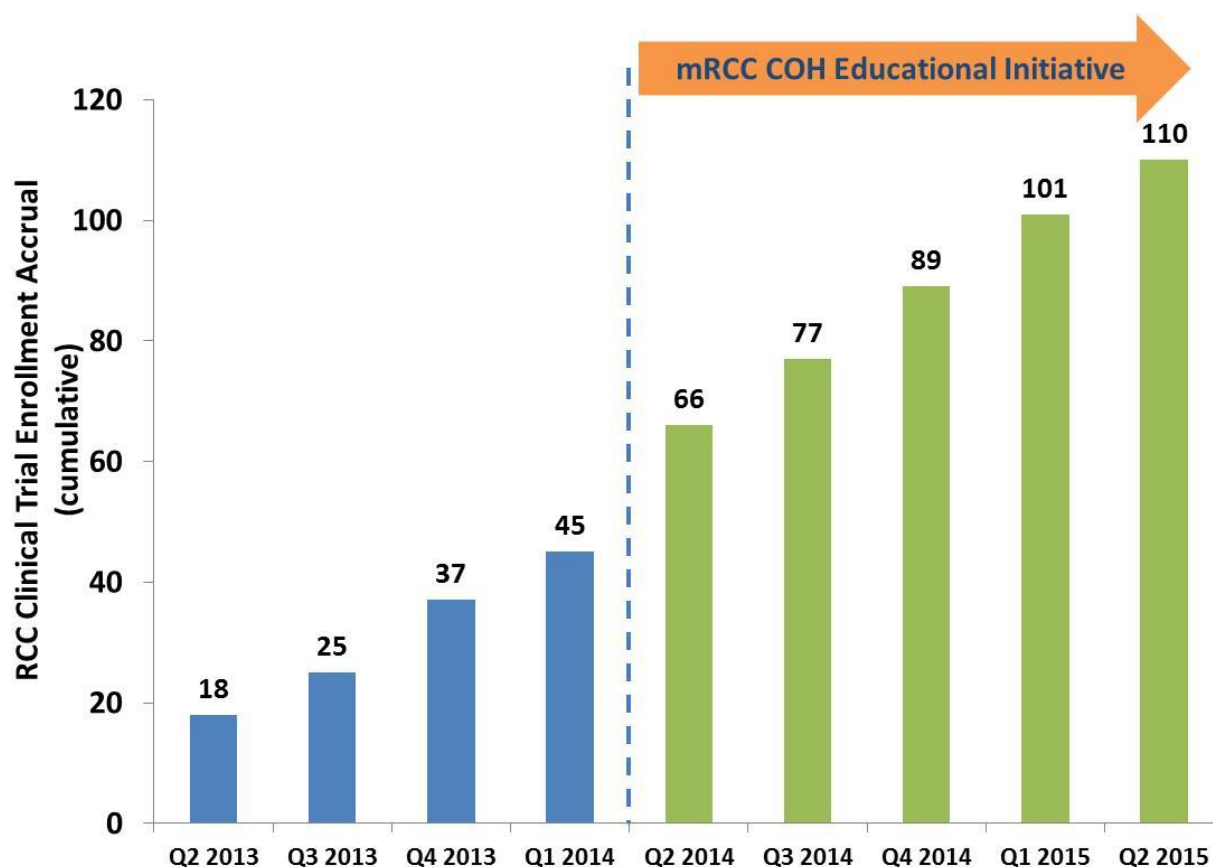
Sumanta Pal, MD, City of Hope Medical Center

Throughout the duration of the initiative, some technical difficulties were encountered. City of Hope will review the existing activities to ensure that they are still current and relevant and then extend credit for each web-based educational activity for an additional year.

### **Clinical Trial Enrollment**

One of the overarching goals of this educational initiative was to improve access and visibility of clinical trials for mRCC patients in the community. Per NCCN Guidelines, clinical trials are among the recommended treatment options for patients with mRCC in both the first-line and subsequent therapy settings. Accrual of patients for RCC clinical trials at City of Hope prior to, and over the course of this initiative is shown in **Figure 10**. The average rate of accrual for the RCC protocol over the year prior to this project was 11.25 patients per quarter, compared with 14 patients per quarter from March of 2014 through June of 2015.

**Figure 10: Cumulative City of Hope RCC Clinical Trial Enrollment**





The specific clinical trials and patients accrued over the course of the initiative are included in Table 6.

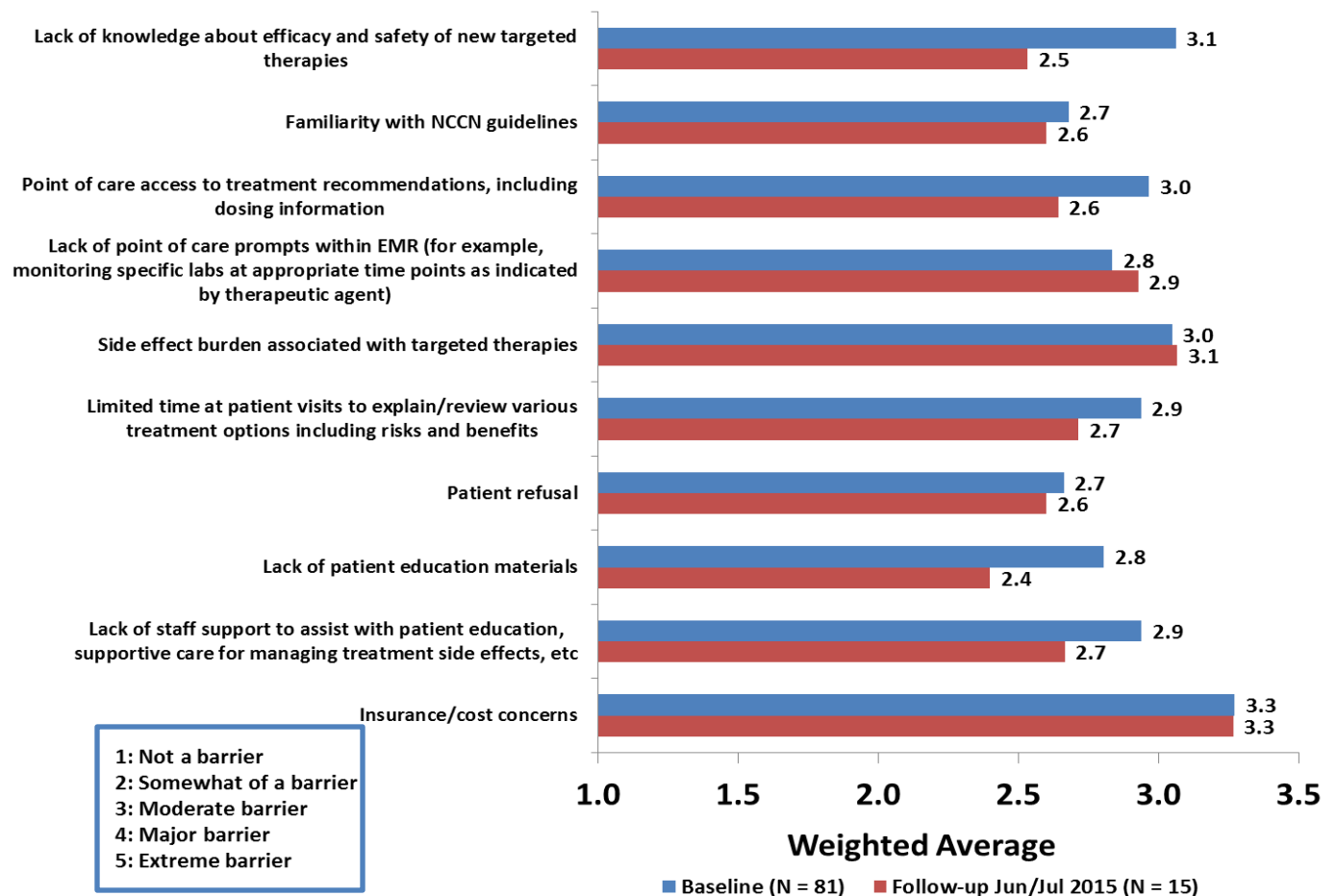
**Table 6: RCC Clinical Trial Enrollment at City of Hope**

Trial	Patients Enrolled (March 2014-June 2015)
S0931, "EVEREST: EVERolimus for Renal Cancer Ensuing Surgical Therapy, a Phase III Study"	12
CA209-016: A Phase I Study of Nivolumab (BMS-936558) Plus Sunitinib, Pazopanib or Ipilimumab in Subjects with Metastatic Renal Cell Carcinoma	4
PhII-121 (NCI #9144): A Phase II Study of Bevacizumab Alone or in Combination with TRC105 for Advanced Renal Cell Cancer	3
PHII-122, NCI #9048; A Randomized Phase 2 Study of AMG 386 with or without Continued Anti-Vascular Endothelial Growth Factor (VEGF) Therapy in Patients with Renal Cell Carcinoma Who Have Progressed on Bevacizumab, Pazopanib, Sorafenib, or Sunitinib	9
S1107: Parallel (Randomized) Phase II Evaluation ARQ 197 AND ARQ 197 in Combination with Erolotinib in Papillary Renal Cell Carcinoma	4
E2810: Randomized, Double-Blind Phase III Study of Pazopanib vs. Placebo in Patients with Metastatic Renal Cell Carcinoma who have no Evidence of Disease following Metastatectomy	7
A Multi-Center, Open-Label, Single-Arm, Phase 2 Study of ASONEP(Sonepcizumab/LT1009) Administered as a Single Agent to Subjects with Refractory Renal Cell Carcinoma	2
A Phase 3, Randomized, Controlled Study of Cabozantinib (XL184) vs Everolimus in Subjects with Metastatic Renal Cell Carcinoma that has Progressed after Prior VEGFR Tyrosine Kinase Inhibitor Therapy.	2
A Phase II, Randomized Study of MPDL3280A Administered as Monotherapy or in Combination with Bevacizumab versus Sunitinib in Patients with Untreated Advanced Renal Cell Carcinoma	13
A Phase II Trial to Evaluate the Efficacy of AZD6094 (HMPL-504) in Patients with Papillary Renal Cell Carcinoma (PRCC), D5082C00002	6
A Phase 3, Randomized, Open-Label Study of Nivolumab Combined with Ipilimumab Versus Sunitinib Monotherapy in Subjects with Previously Untreated, Advanced or Metastatic Renal Cell Carcinoma (CA209214)	2
A Randomize Phase 2 Trial OF Axitinib and TRC105 versus Axitinib alone (including a lead in phase 1B dose escalation portion) in Patients with Advanced or Metastatic Renal Cell Carcinoma, 105RC101	3

## Clinician Self-Assessment Survey

Self-assessment surveys were distributed to attendees at the meetings in order to obtain information on attitudes and perceived barriers related to treatment of patients with mRCC and enrollment in clinical trials. Only one ‘baseline’ self-assessment survey was completed per clinician, independent of the number of dinner meetings or grand rounds attended. Follow-up surveys were distributed in June and July of 2015. Clinicians were asked to rate 10 potential barriers to adherence with NCCN treatment and dosing recommendations for patients with advanced RCC using a 5 point scale (1: Not a barrier; 2: Somewhat of a barrier; 3: Moderate barrier; 4: Major barrier; and 5: Extreme barrier). The scores are presented as a weighted average. Eighty-one clinicians completed baseline self-assessments and 15 provided follow-up, which may limit interpretation of these results. The self-assessment survey results are shown in Figure 11.

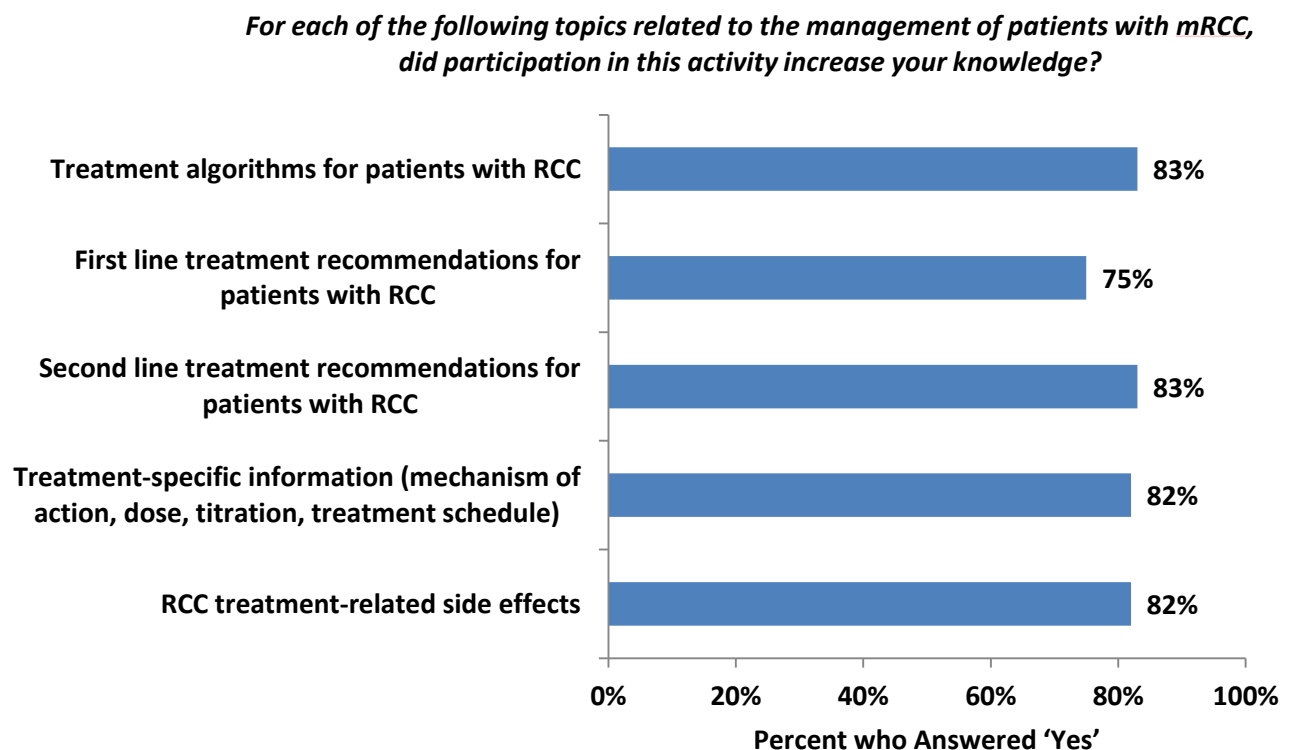
**Figure 11: Self-Assessment Survey—Potential Barriers to Following NCCN Treatment Recommendations**



## Reflections on the Educational Initiative

Twelve attendees of dinner meetings and/or grand rounds provided qualitative feedback about the mRCC initiative. This group was comprised of physicians (4), nurses (6), a nurse practitioner, and one clinician identified as 'Other.' Most identified oncology as their primary therapeutic area (58%), and 42% practice outside of City of Hope. As shown in **Figure 12**, the majority indicated that participation in these activities increased their knowledge on a range of topics related to RCC.

**Figure 12: Perspective on the mRCC Educational Initiative**



N = 12

- 73% indicated that the initiative increased their awareness of clinical trials in Southern California for patients with RCC.
- For some attendees, participation increased their confidence in managing patients with RCC. On a scale from 0 to 100, with 0 indicating 'No impact on confidence' and 100 indicating "Greatly increased confidence," 57% selected a score  $\geq 50$ .
- 73% have not encountered barriers or challenges applying the information that they learned to their patients or practice setting

#### Comments:

- *Definitely helped in terms of talking with patients about treatment options before they go to the medical oncologist [from a urologist]*
- *Increased my knowledge of first and second line treatment options*
- *Drug specific information about dosing and side effects was helpful*
- *Great presentations to update our knowledge*
- *Information helpful for increasing communication with patients*
- *Learned about trials available for patients with RCC*
- *Great lecture*
- *Very interesting and fascinating information*
- *Very good speaker dealing with a complicated subject*
- *I am better able to understand treatment modalities*
- *Excellent*

#### Conclusion

This educational initiative was developed with two overarching goals: to increase knowledge of (and adherence to) expert treatment recommendations for mRCC, and to improve access and visibility of clinical trials for mRCC patients in the Southern California area. Over 250 clinicians participated in this initiative through dinner meetings, grand rounds, and web-based education. Significant knowledge gains were demonstrated on pre/posttests associated with the dinner meetings and grand rounds, reflecting improved understanding of NCCN treatment guidelines for first and subsequent-line treatment, treatment-related side effects, clinical trials, and emerging therapies for patients with mRCC. Enrollment in RCC clinical trials at City of Hope increased over the course of this initiative; 14 patients/quarter compared with 11/quarter in the year prior to the project.

Learners who completed evaluations at the dinner meetings (49%) and grand rounds (62%) planned to make practice changes as a result of participating in the education. The most commonly identified planned changes were to apply knowledge of expert recommendations to the management of patients with mRCC, improve the clinical benefit of targeted agents for mRCC through effective side effect management and dose titration, and to increase enrollment of patients with mRCC in regionally available clinical trials. Clinicians were very committed to following through on these planned changes, which may enhance quality of care and translate into improved outcomes for patients with mRCC.