

**FINAL REPORT**  
**DEPARTMENT OF PEDIATRICS**  
**ACADEMIC PROGRAM REVIEW (APR) REPORT**  
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## EXECUTIVE SUMMARY

The merger of the University of Arizona Health Sciences Center (UAHSC) and Banner Health (BH) has been a major change in the administration of the Department of Pediatrics/Banner Diamond Children's Hospital (BDCH) since the last APR in 2010. Despite the internal changes from the merger and the uncertainty nationally regarding the federal financing of research and clinical services, the Department/BDCH is doing very well. The stable and visionary leadership of Dr. Fayez Ghishan, the Chair of the Department of Pediatrics and the Physician-in-Chief of the Children's Hospital, has been a critical factor in the success of the Department/Hospital. He is perceived by colleagues both within the Department and the Institution as an "inspirational leader". The steadiness of his leadership has resulted in an atmosphere of collegiality and energy among faculty, trainees, and staff despite the internal and external uncertainties.

The Department/Hospital has completed the majority of the recommendations contained in the previous APR review. The clinical services and the numbers of clinical faculty have grown resulting in a broader range of children's subspecialty services. The pediatric educational programs are consistently award-winning and receive high praise from the trainees. The Department's NIH research portfolio now has a Blue Ridge ranking for Departments of Pediatrics that has gone from 41 in 2011 to 33 in 2016 (presently approximately \$7 million) at a time when research funding (particularly NIH pediatric research dollars) is increasingly difficult to garner. We expect with the most recent new research funding, that the Department's NIH research ranking will be even higher in 2017. Of major importance in the current environment of shrinking national resources is that Dr. Ghishan has raised an impressive portfolio of philanthropic support that has allowed the creation of five endowed professorships/chairs. The strategy of pursuing philanthropic support is absolutely critical at a time of such uncertainty in the federal funding of the missions of academic health sciences centers.

Despite all the gains in the past seven years, there are significant challenges for the Department/Hospital. The local competition for child subspecialty patients is great as the population of Tucson/Pima County region is approximately 1.3 million people (10-20% of whom are children). There are several competing children's hospitals in the area, most notably, the Phoenix Children's Hospital (considerably larger than BDCH) and the Tucson Medical Center (TMC). TMC's decision to sever its relationships with UAHSC/BH is very concerning as it poses a significant threat to the health of the BDCH residency program. TMC is recruiting subspecialty pediatricians, developing a pediatric residency, and launching a major public relations' effort directed toward the specialized care of the area's sickest children. This competition among subspecialty pediatric services among several children's hospitals in a community of Tucson's/Pima County's size will result ultimately in fragmentation of children's clinical services, lack of quality of care in each competing setting resulting from too few patients, difficulty recruiting pediatric subspecialists to any of the hospitals, and expensive duplication of services. A strong strategic plan to meet these clinical challenges and a strong public relations campaign from UAHSC/BDCH to counteract the TMC campaign are encouraged.

It is too early to weigh the long-term outcome of the UAHSC/BH merger of the Department of Pediatrics/BDCH. We heard that since the merger of UAHSC and BH recruitment of nationally competitive faculty has been more difficult than prior to the merger. This challenge is occurring against the background of serious national competition for highly-trained pediatric subspecialists whose numbers are sparse. Retention of highly productive faculty is an ongoing challenge for programs of similar size to the Department's. The new faculty compensation plan was perceived initially as a potential problem for pediatrics; however with a special pediatric compensation plan to

be implemented soon, it is expected that some of the challenges of faculty compensation will be overcome. The compensation of the faculty is low compared to local and national benchmarking. The chairs of clinical departments to whom we spoke believe that their autonomy especially in recruitment and compensation is less than it was prior to the merger. The pediatric chair must have flexibility to negotiate with nationally competitive faculty candidates in real time rather than through a complex process involving BH recruiters. The merger, however, also brings many opportunities for growth of both the clinical and academic programs. There has been an infusion of financial support from BH to the academic mission of the College of Medicine; new ambulatory clinical space, and other new buildings from which it is expected the Department/BDCH will benefit.

There is cautious optimism that the Department/Hospital will continue to thrive and to be productive. There is an opportunity for the leadership of the Institution, the Department, and the Hospital to build upon the current strengths of the Department/BDCH as the only fully academic children's program and to develop BDCH as the dominant children's hospital of Southern Arizona.

## CLINICAL

The clinical accomplishments are great for a faculty of 85 of whom 15 are research-intensive.

### **Strengths—**

#### **FACULTY**

- Peer support among faculty resulting in a climate of camaraderie which is rare within academic institutions. This feeling was pervasive in all meetings with faculty, trainees, and administrators.
- Awards (see Appendix C) both for local recognition in teaching as well as national honors.

#### **PATIENT CARE**

- Expertise of BH in clinical efficiency and analytic methods to follow quality measures and outcomes.
- Unique pediatric clinical programs.
  - a) Collaborative clinics: the pending autoimmune/neurologic (PANDAS) clinic and the active aerodigestive clinic.
  - b) The only CMS-accredited ambulatory pediatric dialysis program in the state.
  - c) The only pediatric trauma center in Tucson.
  - d) The quality/reown of the pediatric bone marrow program that is a nationwide leader in survival statistics.
  - e) Tucson's only pediatric ECMO program.
  - f) An internationally renowned pediatric asthma program.
- Despite nationwide challenges in recruitment of faculty, the department has experienced a net gain of ten faculty since the last review. Several divisions that are fully staffed include neonatology, critical care, hematology/oncology, and cardiology.

### **Challenges—**

The challenges lie neither in the clinical acumen nor the individual reputations of individual faculty members, but in the challenges of faculty recruitment and TMC's aggressive pediatric clinical plans as a threat to the clinical success of BDCH.

- One-person divisions (e.g., pediatric nephrology, neurology, genetics). A new faculty member has been recruited in pediatric genetics.
- Lack of pediatric surgical subspecialty support leading to a dependency on community groups for adequate surgical support.
- Failure to take advantage of local expertise (e.g., BMT) within the BH as a source of referrals.
- Delays in faculty recruitment as a result of layers of administrative approval and a lack of autonomy for the chair in negotiations with faculty candidates.
- Lower faculty compensation packages when compared nationally and within the state of Arizona and the BH.
- Competition for patients and referrals locally with TMC and statewide with Phoenix Children's Hospital and other Banner clinical sites. TMC is a significant local threat as they are starting a new residency program which will eventually decrease learning opportunities for UA residents.

- Bureaucracy involved in access to clinics as a deterrent to a solid, consistent referral base. Many community pediatricians refer to community specialists instead of renowned department doctors due to ease and availability of appointments.
- Lack of marketing the strengths and shining examples of innovation and research of this Department/Hospital to the local and national communities.
- No link to specific programs of BDCH faculty on the Banner web-site. All referrals reviewed by the APR team appear to be directed to Phoenix hospitals and personnel.

## **Recommendations—**

### **FACULTY RECRUITMENT AS A PRIORITY**

- Continue to review compensation of clinical faculty with other pediatric clinical faculty in the BCH system addressing the discrepancy between BDCH and Phoenix markets so Tucson does not lose prospective and current faculty to Phoenix.
- Review pediatric faculty compensation with national benchmarking for subspecialty.
- Consider returning flexibility and autonomy in hiring practices to the department chairs to adjust compensation and recruitment packages to avoid administrative delays in hiring nationally competitive faculty members. The newly formed Faculty Practice Committee may be addressing this issue.
- Recruit pediatric surgeons and anesthesiologists.

### **PATIENT CARE**

- Assess barriers to clinic accessibility both for patients and referring physicians. Consider decentralization of scheduling, increased clinical staff (i.e., mid-levels such as nurse practitioners) to improve clinic efficiency and to decrease the current administrative layers between patients and clinical staff. Communicate these changes to all local pediatricians.
- Continue interaction with BH leaders and optimization of their expertise and resources in quality improvement and safety both for improved patient care as well as a source of research data for residents and faculty.
- Market BDCH faculty's clinical expertise and research findings to increase visibility of the BDCH to the physicians and the community to define what differentiates BDCH from the community sites.
- Reintroduce an independent website for BDCH to compete with that of TMC.
- Create a strategy to address the threat of TMC's increasing competition for example, create a strategic alliance with Cardon Children's Hospital in Phoenix.
- Continue to develop a plan to explore the potential collaborations between BDCH and Cardon Children's Hospital to leverage expertise, share clinical responsibility, and increase referral base.
- Consider one medical director for all BH pediatric sites in Southern Arizona. Dr. Ghishan is a proven local and national pediatric leader and could be the spokesman for this effort, especially in light of the TMC and Phoenix Children's threats. "Banner Children's Health" with all the strengths/expertise of BH and of AHSC would be a powerful proactive effort to combat the current serious threats.

## EDUCATION

The Department of Pediatrics is a jewel in the educational mission of the College of Medicine. It has been the recipient of the College of Medicine Award for Outstanding Achievement in Teaching by a clerkship or elective award for six of the past seven years. Since the last ARP, 36 faculty members received a total of 69 awards. Eighteen of the 69 awards were specifically related to teaching excellence.

### ***PEDIATRIC CLERKSHIP***

#### **Strengths—**

- Sixteen percent of students graduating from the University of Arizona College of Medicine enter pediatric residencies compared to 11% nationally.
- Student quantitative evaluations of faculty teaching and core pediatric clerkship
  - a) *Faculty teaching effectiveness from medical student evaluations—* Outstanding scores: with very few exceptions; mean teaching evaluation scores on pediatric clerkship rotations range from 3.4 to 4.0 on a 4-point scale; the majority of scores ranged from 3.5 to 4.0.
  - b) *Pediatric clerkship—*Mean scores on the three-core items ranged from 4.03 to 4.40 on a 5-point scale.
  - c) *Pediatric residents as teachers—*Students' perception of residents as highly effective teachers. Creation by the residents of "Rover Rounds" to teach students how to effectively present patients.
- Student qualitative evaluations of faculty teaching and core pediatric clerkship  
Students reported that faculty members were very engaged in their clinical rotations and that faculty were excellent role models. Examples of qualitative comments by the medical students:  
---"Everyone was so wonderful and very willing to answer questions and have discussions about patients' physiology, anatomy, etc. It was evident that they enjoyed teaching students, which was very much appreciated. I like the organization of having both Wilmot and CRS clinics so we could see a variety of normal findings and real pathology."  
---"I cannot speak highly enough of the time I have had on this elective. The cardiologists are phenomenal demonstrating the highest level of compassion and excellent care; every clinic is a master class in patient rapport and care. Ashley, Lisa and all the techs are equally helpful, committed to teaching and helping to make a student's experience as rich and fulfilling as possible. Overall, tremendous elective and I recommend any and every student to enroll. Thank you very much!"
- Evaluation of medical student performance  
Medical students' mean scores comparable to the national mean on the National Board of Medical Examiners (NBME) pediatric subject examination given at the end of the clerkship.
- International rotations for medical students  
The international rotations viewed by the students as a critically important component of their medical educations.

#### **Challenges—**

- Increase in size of the medical school class from 105 to 135 in two years.
- The looming crisis for clerkship placements for winter 2019 when two classes of medical students need accommodation as with the Curriculum Renewal Project, there will be nearly 280 third-year clerks for a period of four months.

- Times of low inpatient census for medical student education.
- Creation of new pediatric training sites during a time when TMC and El Rio are unavailable.

### **Recommendations--**

- Continue the level of excellence in the pediatric clerkship and electives. This sustained level of excellence receives high praise from the reviewers.
- Secure new training sites, for example, by exploring with BH the use of the Cardon Children's Hospital in Mesa as a training site.
- Identify other training sites as soon as possible.

### ***PEDIATRIC RESIDENCY***

#### **Strengths—**

- Dr. Sean Elliott is a strong and well-liked director.
- Pediatric residents come from all over the country.
- Engaged and responsive residents; interactive, active, and informed in conversation with reviewers reflecting excellent leadership of the pediatric residency.
- Resident first-time pass rate during the past three years dramatically improved over time. For both 2015 and 2016, a first-time pass-rate of 100%. For the past three years, a mean pass rate of 99%. Examples of strategies to improve first-time pass rate from the past: (i.e., journal clubs, opportunities to participate in research and quality improvement projects).
- The 2016-2017 Outstanding Resident Award for the whole institution— incoming pediatric chief resident (2017-2018). Reviewers impressed by his research interests and active projects.
- 2016-2017 Chief Resident also very impressive.
- One-third of this year's graduating residents pursuing pediatric fellowships in highly competitive programs.
- A steady pace of peer-reviewed publications and presentations at national conferences by the residents.

#### **Challenges—**

- Of the 16% of the medical school class entering pediatric residencies in recent years, few stay in Tucson for their pediatric residency training. More pursue residencies at Phoenix Children's Hospital where often extended family resides and where the hospital is larger.
- More training sites needed for training of the residents.

#### **Recommendations—**

- Consider efforts to increase the recruitment of UAHSC medical students to the UAHSC pediatric residency by promoting the advantages of staying in Tucson where the pass rate for residents recently has been 100%.
- Greater efforts on recruitment of national residency candidates of Latino/Hispanic background.

## **FELLOWSHIP**

### **Challenges—**

- During the last review, it was recommended that the number of fellowship slots be increased. There has been little change in the number of fellowship programs over the past seven years. Successful faculty recruitment depends on a local pipeline of well-trained fellows. There are several pediatric programs of national prominence at UAHC that could be highlighted as “destination” training nationally for fellowship training.

### **Recommendation—**

- The number of fellowship slots be increased and focused on the programs of national prominence to attract the best and the brightest young people to the Department of Pediatrics/BDCH. Fellowship positions in most children’s hospitals are funded by the hospital.
- Other departments nationally offer a fellowship and then after a year in the fellowship if the person is promising a faculty commitment is made.

## **RESEARCH**

The Department of Pediatrics has exceptional research strength despite its small size. It is currently ranked 33<sup>rd</sup> nationally in NIH funding in 2016, an improvement from a rank of 41<sup>st</sup> in 2011. NIH funding is currently approximately \$7 million. This compares extremely favorably with other clinical departments in the College of Medicine, such as Medicine and Surgery, both of which are significantly larger. Output of peer-reviewed publications is very good. The APR evaluation team commends the Department for its research accomplishments in the context of considerable national headwinds and local challenges articulated below.

### **Strengths—**

- Two premier nationally recognized research programs
  - a) The longstanding Arizona Respiratory Center, including lung disease and asthma research groups led by pediatric pulmonologists, Drs. Fernando Martinez and Wayne Morgan. This is a model program of multidisciplinary, as it includes colleagues from multiple departments in the College of Medicine and some from the University. This group is a model worth emulating as the Department of Pediatrics anticipates development of new research programs.
  - b) The significant laboratory group of Department chair, Dr. Ghishan, who has a long and distinguished track-record of NIH-funding including multiple R01s and a coveted MERIT award. The principal foci of his laboratory’s efforts are intestinal immunity, the gut microbiome and the biology of novel intestinal electrolyte transporters.
- Developing research program: Autism and developmental pediatrics, both enabled by NIH and other federal funding. The autism/developmental pediatrics program is based in Phoenix where pediatric clinical-translational research efforts are being developed. The Phoenix setting is ideal for clinical research as the population of children needed for competitive clinical research is much greater than the number in Tucson alone.
- Philanthropy efforts, largely led by Dr. Ghishan, significantly enable the purchase of capital equipment and other assets to enhance the department’s research resources. These efforts have also resulted in funding of three endowed chairs



for research intensive faculty. Searches are underway for qualified holders of these chairs.

- Future planning for potential research growth is in the queue by virtue of acquisition of external programmatic support, large center grants to the College of Medicine, regional collaborative and the endowed chairs mentioned above. These areas are inflammatory bowel disease, genomics – enabled by the College's receipt of a Precision Medicine Initiative grant and the Department's participation in a regional pediatric genomics collaborative -- type 1 diabetes, post-infectious autoimmune encephalopathy, and cancer immunotherapy.

### **Challenges—**

- Small faculty members (85) and research faculty (15), nine of whom are tenured. Economies of scale and critical mass for team science are difficult to achieve within such small departments.
- Several divisions have only one-two members who are, of necessity, strained by clinical and teaching responsibilities.
- Only two fellowship programs in the Department, further limiting critical mass and person-power in support of research programs.
- The College of Medicine's limited funds for faculty to have protected research time, start-up expenses for recruitment of research-oriented faculty, and for development of junior faculty interested in investigation.
- Only one K-awarded faculty member in the Department of Pediatrics. This critical care physician received an external K12 award and additional funding competitively awarded by the college.
- Long -term sustainability of its two major research programs in lung and gastrointestinal disease. The lead scientists in these groups are at a stage of their career in which formal succession planning is needed. Separately, the issue of the small size of the Department and its academic divisions is a formidable impediment to development of robust research programs. The escalating subspecialty competition by TMC, referenced more extensively elsewhere in this report, portends continued challenges. The APR team heard a consistent message from the Department Chairs, the tenured faculty, and Division Chiefs that recruitment of faculty is their greatest challenge. Potential solutions are proposed in our recommendations. Difficulties in recruitment affects clinical productivity and secondarily affects scholarly productivity as the Department attempt to balance clinical, teaching and scholarly demands.

### **Recommendations—**

- Develop a formal succession plan for the lung disease research program by recruitment of junior clinical and research-intensive faculty with expertise in asthma. These might be pulmonary faculty or allergy-immunology faculty. This should be considered a high priority.
- Develop a formal succession plan and talent pipeline for the gastroenterology research program to include Dr. Ghishan's ongoing contributions (he is funded through 2023), Dr. Pawel Kiela, and the new Chief of Gastroenterology in the Department of Medicine. Strategic recruitment in the Department of Internal Medicine will create scale and synergies akin to the lung disease group, and the APR team considers these sorts of collaborative ventures – with appropriate allocation of research space -- the best prescription for both the Department and the College of Medicine's research vision.
- Develop a long- range plan for the Phoenix translational and research campus.

- Develop a formal plan for contribution to the Precision Medicine Initiative from the Department of Pediatrics and Steele Research Center. Of necessity, this must include recruitment of pediatric genetics expertise as planned by the funding of the Lindholm Endowed Chair for Genetics.
- Fill endowed chairs with research-intensive faculty.
- Aggressively market the research accomplishments of the Department and the College. A local marketing strategy is as vitally important as a national marketing strategy. Doing so will enhance recruitment of clinical and research faculty and establish the Children's Hospital as the preferred destination for state-of-the-art care. We recommend innovative traditional, web and social media based strategies. This will also help in retention of talented medical students in the residency program.
- Develop a long-range pediatric research space plan with the College of Medicine.
- Achieve clarity and communicate transparently, in partnership with the College of Medicine, the intended use of annual academic funds from BH to UAHSC.

## **ADMINISTRATION**

The Department/Children's Hospital has a strong administrative team that communicates well with each other and with many constituencies.

### **Strengths—**

- Dr. Ghishan is a superb leader/administrator who role models high intellectual energy, love of his profession and its missions, and thoughtful, supportive, and creative direction. His 22 years of service as the Chair of Pediatrics/Physician-in-Chief of BDCH makes him one of the longest-serving chairs of Pediatrics nationally with the average length-of-service being four-five years.
- In Dr. Ghishan's absence, Drs. Morgan and Theodorou are responsible for the Department.
- Addition of an Executive Committee since the last review in 2010 as well as the addition of several departmental committees.
- Revamping of the Research Steering Committee to include basic, translational, and clinical interests.
- The administrative staffs with whom we met who are knowledgeable professionals whose years of service range from months to over 30 years. They are a cohesive group despite the many changes in the administration of BDCH.

### **Challenges—**

- Succession planning for the time when Dr. Ghishan steps down from the chair. As noted, Dr. Ghishan is remarkably vigorous and highly productive in all academic missions and is highly successful as an NIH-funded investigator, teacher, and clinician. His very successful philanthropic efforts are notable and critically important at this time of lack of clarity about the funding of the academic mission. It is important to be thinking strategically about the characteristics of his successor. It will be nearly impossible for another leader to replicate Dr. Ghishan's productivity. The Department faculty and staff have to be prepared for such a transition as they have great faith in his abilities and immense loyalty to him.
- Perception that there has been a decline in the number of administrative positions (classified/professional staff) since the merger of UAHSC and BH with a 1:10 ratio of support staff to faculty, residents, and fellows.

### **Recommendations—**

- Succession planning for the chair should be starting now even if Dr. Ghishan serves many more years. Availability and recruitment of leadership-level pediatric chairs functioning at Dr. Ghishan's level are limited.
- Review of the number of the administrative staff in the classified/professional ranks where staff has been decreased in order to assure adequate coverage so that the medical professionals can perform their roles efficiently.
- Continued communications among UAHSC, University of Arizona College of Medicine, BCDH, and Department of Pediatrics for administrators.
- Strong marketing effort on behalf of Department of Pediatrics/BDCH.

### **DIVERSITY**

Diversity of faculty, trainees, and staff is an ongoing priority for all institutions of higher learning. Since Southern Arizona has a high percentage of Latino/Hispanic residents, the recruitment of Latin/Hispanic faculty to UAHC and its Department/Children's Hospital and staff is critical.

### **Strengths—**

- The Department has made great strides in recruiting women to the Department. There are slightly more women than men on the faculty.
- Approximately 35% of the residents of Tucson are Latino/Hispanic individuals.
- Thirty-five percent of the medical students at UAHC are of Latino/Hispanic background.

### **Challenges—**

- Nationally in 2015, 2.4% (3479 out of approximately 160,000) of all medical school faculty were Latino/Hispanic. (AAMC Faculty Roster, 2015).
- One of the greatest challenges in creating a Latino/Hispanic faculty pipeline in Tucson may be that UAHC Latino/Hispanic medical students may want to pursue their pediatric residency training in other areas of the country.
- No African-American faculty.
- Discrepancy of the ethnicity of patients and their providers.

### **Recommendations—**

- Work with the University Office of Diversity to develop programs to attract Latino/Hispanic residents and faculty into Pediatrics.
- Learn about strategies the medical school has used to attract Latino/Hispanic applicants and matriculants.
- Consider creating programs relevant to Latino/Hispanic children's health such as a childhood obesity center since 30% of children 10-17 years of age suffer from obesity in Arizona. (Cincinnati Children's Child Health Policy Research Center data).

## SUMMARY

Despite the dramatic changes nationally in academic medicine driven largely by the federal government and the local changes resulting from the merger of UAHSC and BH, the Department of Pediatric/BDCH is growing in an atmosphere of strong leadership, talented faculty and staff, departmental camaraderie, professional energy, and cautious optimism. Since the last APR in 2010, there has been considerable growth in the clinical enterprise, continued excellence in the pediatric training programs (except for fellowship training), and remarkable growth in securing highly competitive NIH research support. Dr. Ghishan's philanthropic pursuits are very successful and absolutely critical to the future success of the Department/Children's Hospital. The threat of several competing children's hospitals particularly an increasingly aggressive TMC and the larger Phoenix Children's Hospital poses a serious problem to the ultimate success of the Department of Pediatrics/BDCH. The urgency of competitive recruitment and retention of excellent, productive faculty; competitive compensation packages for all pediatric and pediatric surgical faculty; and an aggressive marketing campaign addressing the uniqueness of the Department of Pediatrics/BDCH are absolutely vital. One product line of an integrated Banner Children's Hospital group should be considered. There is a logical collaborative program between the Tucson and Phoenix BH sites (e.g. pediatric hematology-oncology services) as a model. Success ultimately results from "creating the future." The Department of Pediatrics/BDCH has shown that it has the expertise and the will to "create the future" and with Banner Health should have many opportunities to do so. The future as we know is changing fast. The threats in the local pediatric environment must be addressed to assure future success to serve children optimally and for the Department of Pediatrics/Banner Health to become the pre-eminent provider of "cutting-edge" pediatric services

We thank the University of Arizona leadership for the opportunity to review the Department of Pediatrics/BDCH and the Department of Pediatrics and Banner Health staff for their preparation for our visit.