

PC PROJECT ANNUAL REPORT 2015



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MISSION STATEMENT

The PC Project website states the mission goals as:

Fighting for a cure. Connecting and Helping Patients. Empowering research

To find effective treatments for those suffering from Pachyonychia Congenita, PC Project actively sponsors several major efforts:

- The International Pachyonychia Congenita Research Registry (IPCRR).
Free genetic testing for those diagnosed with PC.
Annual Patient Support Meetings and other patient support services.
- The International Pachyonychia Congenita Consortium (IPCC).
Research grants, clinical studies and clinical trials.
Annual Scientific meetings.
Publications of PC data and research.
- Participation and collaboration with other patient advocacy organizations.

ABOUT PACHYONYCHIA CONGENITA

Pachyonychia Congenita (PC) is an ultra-rare, genetic, autosomal dominant skin disorder. PC is caused by a mutation in any one of five keratin genes: *KRT6A*, *KRT6B*, *KRT6C*, *KRT16*, *KRT17*. Nearly 100 specific mutations have now been identified. The gene and mutation affect the condition for each PC Patient.

THE MOST COMMON FEATURES OF PC INCLUDE:

1. **Thickened Nails** (hypertrophic nail dystrophy or pachy-onychia) although not all nails are affected in all patients with PC.
2. **Painful calluses and blisters** on the soles of the feet (focal plantar hyperkeratosis). Pain is one of the distinct characteristics of PC. Blisters are found under the callus in PC patients. Calluses may also form on the palms of the hands (palmar hyperkeratosis).
3. **Cysts** of various types (including steatocystoma and pilosebaceous cysts). In some forms of PC, this is the most dominant, painful and problematic characteristic.
4. **Follicular hyperkeratosis** (FHK or bumps around hairs at friction sites such as waist, hips, knees, elbows). Most common in children and lessens after teenage years.
5. **Leukokeratosis of the oral mucosa** (white film on tongue and inside cheeks). This is not painful, but is often misdiagnosed as thrush or as leukoplakia.

ABOUT PC PROJECT

PC Project was founded in 2003 as a 501(c)3 public charity in the USA. PC Project staff work together with, medical professionals, scientists, PC patients and family members to make a difference for those suffering with Pachyonychia Congenita. PC Project makes effective use of the limited budget (\$60,778 contributions received in 2015) to accomplish all possible for those with PC who live in the USA and in 60 countries around the world.

PC PROJECT STAFF

Mary E. Schwartz, Acting Executive Director (volunteer)
Holly A. Evans, Program Director
Frances J.D. Smith, Chief Scientific Officer

PC PROJECT BOARD OF TRUSTEES

Board of Trustee meetings were held on April 10, August 18 and December 4 in 2015. Board of Trustee Members at the end of the year were:

Preston L. Cochrane, Chair
Barbara Feinstein, Fundraising Committee
C. David Hansen, MD, Medical Advisor
Roger L. Kaspar, PhD, Scientific Advisor
Jack Padovano, Fundraising Committee Chair, Patient Advocate
Mary E. Schwartz, Fundraising Committee
Janice N. Schwartz, Secretary, Patient Advocate
Craig T. Vincent, Esq., Treasurer
B. Jackson Wixom, Fundraising Committee

The April 10, 2015 meeting was centered on the need for additional staff for PC Project. During the meeting Holly Evans was named as Program Director and a decision was made to fill the positions of Office Manager, Development Director, Chief Scientific Officer and Educational Outreach Director to help with the increasing growth of PC Project.

Fundraising goals and new staff hires were discussed during the August 18, 2015 meeting. The Board set the goal of raising \$255,000 in 12 months. Jack Padovano was welcomed as the newest member of the Board. The fundraising committee was formed with Preston Cochrane, Jack Padovano (Chair), Mary Schwartz and Jack Wixom as members.

At the December 4, 2015 board meeting, Lex L. Udy's resignation was accepted. He had served on the Board for 12 years and the last 5 years as Chair. Barbara Feinstein was welcomed as a new Board member.

INTERNATIONAL PACHYONYCHIA CONGENTIA RESEARCH REGISTRY (IPCRR)

The IPCRR patient registry is the key to all patient services. Through the registry each patient has an opportunity to contribute important data about their condition and to receive important services. Isolation is a major burden for those with rare diseases and through the IPCRR, patients can connect with other patients and specialists who understand PC. Those in the IPCRR are offered free genetic testing. The testing is performed using a saliva collection kit provided by PC Project at no cost to patients. Physician consultations, opportunities to connect, support for applications for disability or work accommodations and other services are provided for those in the IPCRR.

There were 1608 patients in the IPCRR at the end of 2015 with 859 of those being genetically confirmed with PC. The following statistics were noted for the IPCRR in 2015:

- 128 patients contacted PC Project for the first time
- 57 saliva kits were sent for genetic testing
- 49 physician-patient consultations were completed
- 44 mouth swab kits were sent for confirming genetic testing
- 42 individuals received genetic testing results
- 28 Patients updated their registry forms

ANNUAL PATIENT SUPPORT MEETING

PC Project held its annual Patient Support Meeting June 14-16, 2015 at the Marriott Renaissance Hotel in Newark, New Jersey. There were 60 PC patients in attendance with PC Project awarding over \$5,000 in scholarships. Many PC patients were able to experience their first Patient Support Meeting. Family members, physicians and scientists also participated in the meeting. The theme of the meeting was “*Working together to make a difference.*”

Attendees listened to presentations and also participated in panels and discussion groups during the two-day event. These presentations were made by PC Project staff, scientists and physicians with topics covering PC around the world, pain, genetics and characteristics of PC, patient adaption as well as research and study results. These presentations allowed attendees to receive support and the latest information on Pachyonychia Congenita from our experts.

Panels and discussion groups were led by patients on employment for those with PC, managing pain, and parenting of PC kids. A special group for teens and young adults with PC focused on issues important to that age group. Also, individual discussion groups for each of the PC types were held. These breakout groups and panel discussions allowed patients to lead and share their expertise with one another and at the same time have the expertise of medical experts available in the discussions.

GLOBAL RARE DISEASE REGISTRY/NATIONAL INSTITUTES OF HEALTH

The IPCRR was one of 12 registries selected for the NIH Global Rare Disease Registry (now the National Institutes of Health (NIH) National Center for Advancing Translational Science (NCATS) Global Rare Disease Registry (GRDR®) program.) The pilot project involved validating and implementing Common Data Elements (CDEs) and gauging general interest from the rare diseases community. In Phase 1 of the GRDR, the IPCRR was again selected.

Now in Phase 2, the IPCRR continues to be one of the 17 selected registries with data now available online in the NCATS GRDR i2b2/tranSMART program. It is expected that data from the GRDR will provide the basis for publications, clinical trials and research studies.

INTERNATIONAL PC CONSORTIUM (IPCC)

The IPCC connects physicians and scientists with an interest in keratin disorders who agree to work collaboratively in areas that relate to progress for PC research and therapies. There are several hundred members of the IPCC and about 50 who are actively exchanging and assisting.

IPCC ANNUAL SYMPOSIUM

The IPCC Annual Symposium was held in Atlanta, Georgia May 6-10, 2015 also with the theme “*Working together to make a difference.*” A group of over 30 scientists and physicians were in attendance. Presentations were made on the clinical trial conducted at Stanford, PC research at TransDerm, Johns Hopkins and UC Davis and other leading researchers on related topics.

IPCC GENETICS TEAM

PC Project is fortunate to work with our IPCC Genetics Team members to guide genetic testing and help with ‘unresolved cases’. During the monthly call cases are reviewed to try to establish a genetic testing target. If the target is not Pachyonychia Congenita, every effort is made to find a resource for testing for the patient. The members of our Genetics Team volunteer their time and are vital to the mission of PC Project.

IPCC Genetics Team Members

Philip David Gard, MD
C. David Hansen, MD
Edel A. O'Toole, MD, PhD, FRCPI, FRCP
Frances J.D. Smith, PhD (Chair)
Eli Sprecher, MD, PhD
Maurice A.M. van Steensel, MD, PhD

IPCC STEERING COMMITTEE

The Steering Committee conducted several conference calls as well as monthly webmeetings throughout the year to discuss clinical trials and issues governing PC Project goals and actions relating to research.

A special Steering Committee meeting was held in London September 19-20, 2015. There were 7 members in attendance. A total of 36 clinical and research studies were divided between the 7 attendees prior to the meeting. Each attendee gave a 5 minute presentation on each of their 5 or 6 assigned studies. The aim was to report as much information about each study as possible so informed decisions could be made as to which one to take forward. This included PC Project's involvement with each study and outcomes if additional studies have been performed by other research groups or for other disorders. Some studies were only single patient reports or physician reported treatments while others were Phase 1b clinical trials.

Assessment tools/measurement outcomes were discussed in the morning on September 20. It was decided that good baseline data needs to be collected prior to any clinical trial for some of these outcome measurements such as an activity measurement. The possibility of 'fitbit' bracelets or equivalent being used is to be investigated further & devices to be tested initially by members of the IPCC Steering Committee.

IPPC Steering Committee Members

Philip David Gard, MD	Edel A. O'Toole, MD, PhD, FRCPI, FRCP
C. David Hansen, MD	Frances J.D. Smith, PhD
Roger L. Kaspar, PhD	Eli Sprecher, MD, PhD (Chair)
W. H. Irwin McLean, PhD	Maurice A.M. van Steensel, MD, PhD

IPCC PROPOSED CLINICAL TRIALS FOR 2016-2017

At the end of the second day, the IPCC Steering Committee identified the top studies to be taken forward. The top eight studies were further narrowed down to three trials to focus on first for future clinical trials. These three are Botulinum Toxin, Oral Retinoids and Topical Rapamune.

Botulinum Toxin

Injections of either Botox or Dysport are being tried in numerous ‘one-off’ studies. We continue to seek to develop a unified protocol and establish a meaningful study of this treatment. Eli Sprecher took responsibility to take this forward as a clinical trial and has prepared a DRAFT trial protocol that has been reviewed.

Oral Retinoids

Edel O’Toole took leadership for developing this clinical trial and will work with Stiefel the manufacturers of a new retinoid not tested for PC previously.

Topical Rapamycin

Roger Kaspar will lead this clinical trial for PC Project. We strongly believe the availability of topical rapamycin will be a boon to pachyonychia congenita (PC) patients based on the results of the study that was published showing that oral rapamycin, despite all of the side effects associated with oral administration, dramatically improved PC symptoms. We look forward to the Phase 1b clinical study which will initially enroll 15 patients.

PC PROJECT KEY ACCOMPLISHMENTS IN 2015

CLINICAL STUDIES

Several small studies were designed during 2015 to further basic research on PC and to assist in establishing baseline information.

Activity Tracker and Pain App

PC Project created a pain app to help patients track their highest level of plantar pain each day. This app will be part of a WIRB approved study combining the pain app with the Withings Active Pop activity tracker. The purpose of the study is to develop validated baseline data for use in future clinical trials designed to reduce pain for PC patients by gathering a record of daily pain and activity levels for patients with Pachyonychia Congenita (PC) and normal controls matched by gender/age/location during the four different seasons of the year.

PC Natural History

Adaptations were made to allow those in the IPCRR to update their information in order to create a natural history. This data is being accumulated and will be structured and studied in a future project.

Tooth Study

The National Institute of Health is conducting an on-going study on PC Teeth. During the year PC Patients were asked to donate baby teeth, molars that are pulled, teeth that are extracted for

braces or any other teeth extracted from a PC Patient. The purpose of this study is to see if a mutation in the Keratin gene KRT75 affects the enamel structure of PC Patients teeth.

GIVING TUESDAY

On December 1, 2015 PC Project participated for the first time in the Giving Tuesday fundraising event. This event is recognized as a day of giving back after Black Friday and Cyber Monday. During this event PC Project raised over \$25,000. Social media images were created by PC Project for followers on Facebook and Twitter to share with their friends and family. These images helped share the message of what it is like to live with Pachyonychia Congenita and how PC Project is trying to help patients suffering from this rare disease. This was one of the most successful fundraising efforts PC Project has held.

GOLF TOURNAMENT

Our annual PC Project Golf Tournament was held on August 22, 2015 on the Crater Springs Golf Course at the Homestead Resort in Midway, Utah. There were 133 golfers that enjoyed a round of golf, lunch, silent auction and raffle. Members of our Board of Trustees, International PC Consortium (IPCC) and of our PC Project community were in attendance.

A profit of \$8,446 was raised by this event. The event raised also awareness of Pachyonychia Congenita with many golfers hearing about PC for the first time.

GRANT APPLICATIONS

In the fall of 2015 PC Project applied for a \$4,800 Global Genes RARE Patient Impact Grant award. The proposed project that the money is to be used toward the PC Peer Health Coaches training. This project will initially train 12 individuals in the USA to serve as Peer Coaches to support other PC patients and family members. The training will include five webinar training meetings and one in-person session for 3-4 coaches who will serve as team leaders for other coaches and trainers for future coaches. The grant will be awarded in January 2016.

GRUNENTHAL PATIENT DAY

Acting Executive Director, Mary E. Schwartz was invited to represent Pachyonychia Congenita at the Grunenthal Pharmaceuticals Patient Day on April 21, 2015 in (city) New Jersey. Grunenthal Pharmaceuticals is one of the largest pharmaceutical companies in the world and focuses on pain. This was their first introduction to Pachyonychia Congenita. As a result of this meeting, Grunenthal representatives are partnering with the IPCC Steering committee to help with data analysis, clinical trial endpoints and other support. The meeting was attended by Grunenthal key staff from Germany and USA and representatives of 4 patient advocacy groups in addition to PC.

PC ADVOCATES PROGRAM

In the last quarter of 2015, PC Project launched its PC Advocates program. Our PC Advocate team consists of six team members who either have PC, or have a child with PC. PC Advocates will be able to represent PC Project at meetings, government offices, educational outreach efforts and fundraising functions. PC Project is providing the training and tools to empower active advocates for a consistent message about Pachyonychia Congenita and PC Project.

PC AWARENESS MONTH

During the month of June 2015, PC Project encouraged our worldwide community to participate in PC Awareness Month. There was a good response to this request and funds for PC Project were raised by bake sales, book sales, special PC nail wraps and participation in a 100 mile endurance horse race. The total amount raised as part of the PC Awareness month was \$707. Just as important as the funds is the increase in awareness of PC that these events create.

PC PROJECT PUBLICATIONS

PC NewsBrief. Each month PC Project sends out its monthly newsletter, PC NewsBrief to over 500 recipients. The newsletter contains articles about meetings, clinical studies and trials, photos of PC Patients, updates on PC Project and tips for patients and family members who care for someone with Pachyonychia Congenita.

IPCC Newsletter. All members of the International Pachyonychia Congenita Consortium (IPCC) receive the quarterly published IPCC News Brief. The newsletter includes the column The Keratin Corner written by Emily Warshaur, updates on clinical studies and trials, recent publications, genetic testing information, annual meeting information and updates on the International Pachyonychia Congenita Research Registry (IPCRR)

Research Articles Published

During 2015, PC Project collaborated in publishing numerous research articles in leading journals including:

Gene Expression Profiling in Pachyonychia Congenita Skin. Journal: Journal of Dermatological Science 2015 7 January. Y. Cao, R.P. Hickerson, B.L. Seegmiller, D. Grapov, M.M. Gross, M.R. Bessette, B.S. Phinney, M.A. Flores, T.J. Speaker, A. Vermeulen, A.A. Bravo, A.L. Bruckner, L.M. Milstone, M.E. Schwartz, R.H. Rice, R.L. Kaspar

Can skin disease cause neuropathic pain? A study in pachyonychia congenita. Clinical and Experimental Dermatology CED 2015 March 11. T. Wallis, C.D. Poole, B. Hoggart

RESEARCH FUNDING AND LETTERS OF SUPPORT

Pierre A. Columbe, PhD at the Johns Hopkins Bloomberg School of Public Health received a letter of support for his study on his palmoplantar keratoderma mouse study. Success with this study will provide PC Project with much needed models to understand Pachyonychia Congenita.

Roger L. Kaspar, PhD with TransDerm also received a letter of support for his work on the National Institutes of Health SBIR Phase 2 proposal entitled, *Development of topical formulations for delivery of next generation mTOR inhibitors*. Sirolimus is the only mTOR inhibitor that has received attention for topical application use and effectiveness of topical formulations.

Michael J. Polydefkis continued to receive support for his study on neuroanatomy in PC to investigate neuropathic pain in PC patients.

2015 INCOME AND EXPENSE REPORT FROM 990 TAX RETURN

Total 2015 Income	\$ 345,546	[Page 9, Line 12]
Contributions	\$ 333,150	[Page 9, Line 1f]
Fundraising Events	\$ 7,208	[Page 9, Line 1c \$6,989 plus Line 8c \$219]
Investment Income	\$ 19,732	[Page 9, Line 3]
Investment Loss	\$ -14,544	

2015 Total Expenses	\$ 359,263	
Program Expenses	\$ 278,447	[Page 10, Line 25, Col B]
General Expenses	\$ 54,538	[Page 10, Line 25, Col C]
Fundraising Expenses	\$ 26,278	[Page 10, Line 25, Col D]
Expenses over/under income	\$ - 13,717	

DONATED SERVICES AND VOLUNTEERS

In 2015 PC Project was greatly benefited by the help of volunteers. There were also many hours donated by physicians, scientists and professionals who provided their services and expertise to PC Project. Generous discounts on genetic testing and on CPA services were received in 2015.

Total Value

DONATED SERVICES

Physicians and Scientists

IPCRR patient consultations	\$ 15,750.00
IPCRR special patient consultations	\$ 6,000.00
IPCC Genetics Team & Steering Meeting	\$ 68,100.00
IPCC Meeting, Atlanta, GA	\$ 108,000.00
Patient Support Meeting, Newark	\$ 37,800.00
Program services	\$ 114,000.00

PROFESSIONAL SERVICES

Mantyla McReynolds (accounting)	\$ 6,200.00
GeneDx (genetic testing)	\$ 2,520.00
Fundraising Expertise	\$ 5,000.00
Fundraising Expertise	\$ 5,000.00
Editing & Proofreading Services	\$ 400.00
Operating services	\$ 6,000.00
	\$ 368,770.00