LIKE MOST CANCERS, LEUKEMIA SHOWS A LOT OF VARIABILITY BETWEEN PATIENTS, AND AS A RESULT NOT EVERYONE RESPONDS TO TREATMENTS SIMILARLY. Traditionally, new anti-cancer drugs have been tested using cancer cell lines, which are grown in culture plates but often don’t reflect the characteristics and variability of the disease in patients. Furthermore, experimental culture models don’t test the important cells that are at the root of leukemia – namely, the leukemia stem cells that are thought to be responsible for treatment resistance and relapse. To improve the chances of developing drugs that can kill leukemia stem cells, it is best to test potential drugs using a model system that better reflects the disease in patients, and to have a biomarker tool that can predict which patients have a better chance of responding to a particular new therapy when the drug goes to clinical trial.

Clinicians and scientists at Princess Margaret Cancer Centre have developed a model system that captures the characteristics and variability of leukemia in patients. They used mouse avatars to carry out pre-clinical assessment of drug response across a large cross-section of patient samples. The mouse avatars carry leukemia cells derived from patient blood and bone marrow samples banked with consent in the Hematologic Malignancy Biobank at Princess Margaret maintained by leukemia physician and scientist Dr. Mark Minden, and are a good model system for testing leukemia stem cells.

By testing a large number of patient samples, scientists Dr. Jean Wang and Dr. John Dick, together with their collaborators, were able to determine that about 60% of the patient samples responded well to the experimental treatment, while 40% did not respond, reflecting the degree of variability often observed in real patients in a clinical trial. Importantly, by comparing the results from the drug testing in mouse avatars with complementary molecular analysis of the patient samples, the researchers were able to identify a biomarker that could be used to predict which of the samples were most likely to respond to the drug. Such a biomarker could be used to enroll patients in clinical trials who are most likely to benefit from the treatment being tested.

This pioneering study done at Princess Margaret Cancer Centre, one of the top 5 cancer research centres in the world, presents a new paradigm for testing new drugs. “Commonly used chemotherapy drugs that reduce tumour bulk may not necessarily work against all the cells in the cancer, particularly the leukemia stem cells” explains Dr. Wang. “Our integrated approach provides a way to better identify which drugs should move on to clinical trials, while offering a path towards developing biomarkers that can tell us which patients will benefit.”
They love to explore. They enjoy the outdoors. They live an active life. They have a wonderful life both in and outside of the Blue Pod.

Meet our Nurse Practitioners, also known as Registered Nurses in the extended class. NPs, as they are affectionately called, are specialized nurses who have met additional education, experience and exam requirements set out by the College of Nurses of Ontario. They are authorized to diagnose, order and interpret diagnostic tests, and prescribe medication and other treatments to you.

There are four NPs in the leukemia program. Danielle Brandys, Shannon Nixon, Mary Doherty (currently on maternity leave) and Cindy Murray work in the Blue Pod on the fourth floor providing care to outpatients diagnosed with leukemia and other blood disorders. They have advanced expertise in leukemia care. They help to educate patients, their families, and other staff members about the disease process. To meet patients’ needs, their roles in the program also include:

1) managing side effects of chemotherapy such as nausea and vomiting
2) identifying and treating complications such as pneumonia or urinary tract infections
3) assessing the need for transfusions, order blood products, and manage associated complications
4) identifying and organizing admission to hospital for patients who may not be coping at home
5) liaising with community services such as Community Care Access Centre
6) coordinating care with multiple disciplines within University Health Network such as Infectious Disease specialists

Their very vital roles allow them to collaborate with the interdisciplinary team of nurses, dieticians, pharmacists, social workers, and physicians to ensure the best possible care for their patients. And when they’re not working in the clinic caring for patients, you can find them relaxing in breathtaking locations enjoying the serenity of every moment.

The nurse practitioners in their adventures outside the clinic. Clockwise: Danielle hiking and exploring the beauty of the Inca Trail on her way to Machu Piccu in Peru; Cindy sizing up the natural wonders of the Wild Pacific Trail on Vancouver Island; Mary enjoying the historic landmarks of old Quebec, and Shannon skiing in the beautiful resort of Lake Louise.

The Princess Margaret Cancer Foundation raises and stewards funds to support the Princess Margaret Cancer Centre, one of the top 5 cancer research centres in the world. The Princess Margaret is a comprehensive cancer centre that offers full suite of services at the provincial, national and international levels, and is a key resource for complex cancer care spanning the continuum from diagnosis to palliation and survivorship across disease sites. Philanthropy is critical to making this possible.

For more information on how you can help support our leukemia program at the Princess Margaret, please contact:

Anthony Keating
Campaign Director
Tel: 416-946-2138
e-mail: anthony.keating@thepmcf.ca
www.thepmcf.ca
“When you’re going through treatment for a serious illness, you shouldn’t have to think about childcare,” said a former patient. Her dream came true after nearly three years of fundraising and planning. The Magic Castle offers free childcare service for patient families with babies and children up to 12 years old. Whether you are in the hospital for your appointments, or just visiting loved ones in the hospital, Magic Castle’s early childhood educator will offer childcare from 9 am to 4 pm Monday to Friday.

How do you access the program?

You may register through your social worker, or phone Alketa Kumbaro at 416-946-4501 ext. 5157. Registering in advance will ensure space for your child. You can also drop in with your child/children and register in the premises. At your initial childcare visit, you will be asked to complete a confidential registration form that includes your child’s allergy information, emergency contact, address information, and who can pick up your child. If your child is the patient you may be asked for a medical release form.

Where is the Magic Castle?

Magic Castle is conveniently located in the main lobby near the Information Desk next to the Patient and Family Library.

What kind of activities are provided?

Alketa is a Registered Early Childhood Educator, so she develops and implements fun and age appropriate activities based on the knowledge, expertise, child developmental needs, age and stage of a child’s development. “Applying Mothercraft’s Vision, Mission and Values to my everyday work, helps me implement my role and responsibilities in a grander scale,” says Alketa. This allows her to deliver a very productive day full of learning opportunities by fostering children’s exploration.

In addition, there are arts and crafts, board games, computer games, PS4 games, DVDs and movies, sensory and creative medical play, music and movement, and educational books and toys that complement their activities.

Are there other support services are available?

Alketa is also a Family Support Worker whose role is to accommodate the whole family when they are first visiting the Castle, reassuring them that their children will be enjoying their time in the program and their individual needs will be met, taking the impact of cancer into consideration. “If a baby needs a diaper/bottle/sleeping routine, I facilitate a parent’s need for a one-on-one time with the child,” says Alketa. “By being part of their self-regulation, modulating their emotions, interacting with them or just constantly adjusting to their needs makes my day more interesting than just a settled routine.”

Mothercraft also helps provide care in partnership with Psychosocial Oncology and Palliative Care. Magic Castle will also provide referrals to psychologists that work with families who are touched by cancer. They can connect you to a social worker, or to programs in your community.

A Message from the Castle

Your child will be very well taken care of, while you can focus on your appointment, treatment or next follow up. We are here to help you day in and day out. Best of luck through your treatment journey!
Starting in July 2016, the Leukemia Program will take a Lean approach to continuous improvement. Lean supports UHN’s safety transformation, promotes team engagement and leads to an improved patient experience.

Lean is a management system developed by world leaders in manufacturing. It is a systematic method for continuously improving the way an organization runs, by first standardizing processes and then making small, incremental changes to reach important goals. Decisions are based on data, and both errors and waste are reduced by making processes easy for staff to follow correctly.

“Toyota has one of the most advanced process improvement cultures in the world,” says Brenda Kenefick, Director, Lean Process Improvement, UHN. “Other organizations from all sectors such as banking, aircraft manufacturing and healthcare go to Toyota to learn.

“People often say patient care is very different from manufacturing cars. That’s true, but we can learn a lot from Toyota about creating a culture where goals are achieved by engaging everyone in relentlessly removing waste to simplify processes, and in working smarter by seeing and solving problems daily.”

Other groups at UHN already using Lean are seeing shorter lengths of stay, better safety outcomes and higher staff engagement scores. The spinal unit at Toronto Western reached two months without a single patient developing a pressure ulcer and the MD clinic at Toronto Rehab reduced the time to make a call after receiving a referral from 117 days to one. At Princess Margaret, the leukemia inpatient team has already begun using Lean methodology to improve the discharge process, and the results so far appear promising.

Those results are thanks to the creativity of front line staff members who embrace problems. When problems happen employees start “pulling the cord,” a symbolic gesture where the problem is identified to the team. A short term fix may be adopted until the root case can be identified, leading to a permanent process fix. Identifying and fixing small problems every day adds up over time to enormous improvements. Celebrating successes and reaching goals is normal for high performing teams and a key part of managing for daily improvement.

Patients are involved as much as possible to ensure any changes made actually improve their experience. Patients provide feedback through surveys and interviews, and they are also members of the interprofessional rapid improvement event teams.

“Our leukemia physicians are excited about implementing the Lean management system,” says Dr. Aaron Schimmer, Leukemia Staff Physician and Senior Scientist, Princess Margaret Cancer Centre. “Using Lean we hope to make the care we provide our patients better and safer.”

Starting this summer team members will participate in safety huddles, because focusing on the small things ensures everyone is safe every day. The huddles are quick, but it’s a chance for the manager and the team to talk about safety incidents from the day before and for staff to voice any safety concerns they have for the day ahead.

“The leukemia interprofessional team has a strong passion for excellence and discovery in patient care,” says Judy Costello, Senior Clinical Director, Princess Margaret Cancer Centre. “Launching our Lean management system is a great opportunity for creative problem solving with our patients and our team. The sky’s the limit!” (Contributed by Michael Ronchka, Communication Associate, Lean Process Improvement, UHN.)