ISPAD Allan Drash Fellowship Report

**Host Center:** John Hunter Children’s Hospital (JHCH) and Hunter Medical Research Institute (HMRI)

**Mentors:** Prof. Bruce King, Dr Prudence Lopez, Dr Komal Vora, Dr Rowen Seckold, Dr. Carmel Smart and Dr Megan Paterson

**Duration:** 6 weeks + 1 week in isolation (February 21st to April 8th), 2022

In our center, the SHER-I-KASHMIR INSTITUTE OF MEDICAL SCIENCES (SKIMS), Kashmir, we have been following up about 400 children and adolescents with type 1 diabetes. Prior to 2020, our patients did not have access to blood glucose monitoring (BGLs) due to costs. The diabetes team consisted of medical staff and very limited dietetic support. Prof. Shariq Rashid Masoodi and myself have been working to improve diabetes care for children in Kashmir.

Before I went to John Hunter Children’s Hospital with this program, I thought that it would be an important opportunity to provide a better life for our children, but everything was far beyond my expectations.

My fellowship was awarded in 2020 but was delayed due to the COVID19 pandemic. During this delay, Professor Bruce King arranged for weekly 2hour sessions to discuss diabetes management and research. During these sessions, we developed a research plan and obtained ethics approval. Professor Shariq Rashid Masoodi, Professor Bruce King and myself approached Dr Graham Ogle about possible Life For A Child (LFAC) support for the SKIMS center in Kashmir. LFAC has agreed to provide BGL monitoring (3 strips/day), limited funding for printing of patient information sheets and funding for a diabetes nurse to attend an education program. The first children have now received their BGL testing equipment and education material.

My fellowship at JHCH commenced in February with one week in isolation (an Australian Government travel requirement) which was spent with Professor Bruce King who reviewed the diabetes education we had covered and the research plan. During my 6 weeks at JHCH, each of the members of the team warmly welcomed me and made me feel like a part of family. I feel and know that these 6 weeks will be a milestone in my life because not only the education but the experience of seeing how to implement strategies to improve outcomes for children living with diabetes.

**Observations about John Hunter Children’s Hospital, Pediatric Endocrinology and Diabetes Department:**

- The team consists of 5 doctors (1.8 full time equivalents [FTE]), 4 diabetes educators (2 FTE), 3 dietitians (1.2 FTE) and a social worker (0.8 FTE).
- I attended outpatient clinics on Monday and Wednesday, pump trainings on Tuesday, CGMS trainings on Thursdays, ward rounds, emergency presentations (shadowing the on-call paediatric endocrinologist) and clinical research day on Friday.
- All patients in Australia can have free CGMS but not all elect to use them.
- This patient/child friendly hospital has libraries, playgrounds, volunteers and play therapists for inpatients.
The paediatric diabetes and endocrinology department has a database that all healthcare professionals have access to. In this way, everyone can access each other’s notes about the patient.

Each patient enters the outpatient room with their HbA1c measurements, height, weight and information about their management of diabetes for the last 3 months.

In each outpatient clinic, I observed the multidisciplinary approach. I was impressed with the consistency of the education across the entire team which was maintained from diagnosis to transition to adult service.

I was impressed by the consistency of patient outcomes. The majority of the clinics I attended had average HbA1cs less than 7% and severe hypoglycaemia was very rare. There was clear empowerment of patients to be active in the decision-making process. I was present for approximately 220 individual patient consultations.

Experiences

1. **Inpatients clinical Rounds and Outpatients Clinics (all team members)**

I was lucky to spend time with all the team; doctors, diabetes educators, dietitians and the social worker involved in diabetes care. Besides having observed type 1 diabetes clinic, I had a chance to see patients with genetic diabetes and Type 2 diabetes. Since Australia has a multicultural structure, I was able to observe the eating patterns of people from other countries and how the diabetes team managed these differences both in inpatient and outpatient clinics. Since there are patients from every age group, it has enabled me to learn about diabetes treatment by age group (insulin strategies, nutritional approach in the toddler group, etc.).

I was very impressed by their multidisciplinary team meetings which were directed to the child / youth living with diabetes and the team’s efforts to search for the solution at the source. This gave me insights into cost neutral changes in management to improve the lives of children living with diabetes.

2. **Team Meetings**

I had the opportunity to present at clinical meetings held weekly and observe the team approach. In addition, after each outpatient clinic day, everyone evaluated the patients in terms of their own and shared their opinions with the whole team.

3. **Pump Meetings and New Technologies**

I was able to shadow all dietitians (Carmel Smart, Marcelle Pappas), diabetes educators’ (Megan Paterson, Michelle Neylan) and doctors (Bruce King, Patricia Crock, Prudence Lopez, Komal Vora and Rowen Seckold) routine throughout their entire Pump (Medtronic 780 and t-slim) and CGMS (Dexcom G6, Freestyle Libre, Guardian 3, Enlite Sensor) meetings. I was impressed by the fact that the whole team paid great attention to the use of technology and explained the effects to children to make their lives easier.

We know that the use of diabetes technologies has greatly improved the success of treatment of diabetes. Unfortunately, the government payment for diabetes technologies in our country is non-
existent. I had a chance to learn the use of diabetes technologies that exist in our country and will come and I had a chance to benefit from the experience of the team.

4. **Research Project**

During my fellowship I saw how the JHCH diabetes team managed children with type 1 diabetes from diagnosis to long term management. The JHCH call their program “Success With Individualized Insulin Management” (SWIIM program). The average clinic HbA1c at JHCH is 6.9% (52 mmol/mol). Professor Bruce King has used the SWIIM program at other centers in Australia (Lismore, Grafton, Ballina, Tamworth and Forster) and has achieved an average HbA1c across these centers of 6.9%. Other centers in Australia have also trained with JHCH and now have outstanding outcomes. During my visit I developed the SWIIM program to be appropriate for resource limited regions to improve the outcomes for children living with type 1 diabetes. The SWIIM research program will be implemented in SKIMS with an aim to improve the outcomes for children living with type 1 diabetes and prevention of long term complications.

5. **Preparing resources for Kashmiri Children**

The team at the John Hunter Children’s had created very important documents on the management diabetes and shared them with every patient needed. These documents are designed specifically for children in Kashmir. The resources included management using flexible MDI regimes and dietary resources. These resources mean that people can easily calculate their insulin based on their food and manage their insulin.

The carbohydrate and fat content are high in most of the commonly eaten foods in our country. Therefore, we prepared the documents about foods which contains high fat and high carbohydrate and are commonly eaten in Kashmir, under the leadership Dr. Carmel and Prof. Bruce. These documents also contain information about how to manage bolus insulin for high fat and high protein foods for Pump users and MDI treatment. On behalf of my team and our children, I am grateful.

6. **Exercise Management**

During my stay, I observed a few children who were doing various types of sports such rugby, surfing, soccer etc. I witnessed that exercise management is evaluated not only with food, but with basal and bolus doses, child's preferences and daily life. I admired the learning efforts of children with diabetes to exercise more by taking the necessary precautions instead of fear of exercise.

7. **Sharing All Documents, Papers and Experiences**

We held a meeting every Tuesday to discuss my questions with Prof. Bruce and Dr. Carmel. These meetings allowed me to think in terms of both physician and dietitian. It was very useful to talk how
we can manage diabetes with the possibilities in our country and adapt to cultural needs. They shared all documents they used in clinic with us as well as their experiences. It was great that they answered my questions with their papers.

Because of their multicultural life, they are working on a project where they try to gather the contents of food in other world cuisines together. It was a pleasure to contribute to the Kashmiri foods part.

8. **Presented lecture on management of pediatric diabetes in Kashmir**

In my last week, I presented a lecture “Paediatric type 1 diabetes management in Kashmir” at the Hunter New England Health Paediatric Grand Rounds. I discussed the current HbA1c status of my centre and rate of complications and difficulties and challenges our center is facing.

9. **Summary of Key Learning/Achievements:**

The summary of my key learnings about new approaches for Type 1 diabetes treatment are below:

- Hypoglycemia treatment
- BGL targets
- BGL assessment methodologies
- Insulin management and dilution of insulin for younger children
- Dietary management and diabetes education methods.
- Use of insulin pumps and CGMs
- Use of individualized carb exchange cards
- Transition from pediatric diabetes clinic to young people’s clinic

10. **Special Notes and Visits**

As someone who went to Australia for the first time, I always felt at home from the first day. This process has added much more than what I have learned only professionally.

Professor Bruce King and his wife Maree opened not only the doors of their home for six weeks, but also their heart to a person they never knew, and shared their meals, friends, special times and everything they have. Even today I am amazed how such a good people they are.

Scientific learnings, as well as my enthusiasm to work and produce and my resilience have increased. I am grateful for every contribution they have brought into my life.

This opportunity was made possible by the support from Professor Shariq Rashid Masoodi at SKIMS. I would like to thank ISPAD and John Hunter Team. I will do my best with these opportunities provided to me.

Warmest Regards,
Dr Peerzada Ovais Ahmad MBBS,PhD