

Project Title

Contract Manufacturing of Sildenafil Suspension for Paediatric Patients

Project Lead and Members

Project lead: Chow Hwee Yin

Project members: Jamie Stephanie, Lim Kae Shin

Organisation(s) Involved

SingHealth, KK Women's and Children's Hospital

Project Period

Start date: Dec 2017

Completed date: Jun 2018

Aims

To explore the production of Sildenafil suspension on a larger scale with the aim to reduce cost to hospital and manpower time spent on compounding.

Lessons Learnt

The new Sildenafil Suspension was rolled out hospital-wide in January 2018 and was well-received. However, the shelf-life was shorter compared to the previous preparation. Further stability testing was explored with manufacturer. In June 2018, the shelf-life was further extended to 70 days. Pharmacy also embarked on a home-delivery service to improve patient convenience and reduce waiting times at Outpatient Pharmacy. Pharmacy is currently reviewing all extemporaneous preparations to explore if this initiative can be extended to other labour-intensive and high-cost products.

Project Category

Clinical Improvement, Productivity

Keywords

KK Women's and Children's Hospital, Clinical Improvement, Productivity, Pharmacy, Extemporaneous Preparation, Sildenafil Suspension, New Formulation, Paediatric Pulmonary Hypertension, Cost Saving, Reduce Manpower, Vendor Engagement, Contract Manufacturing, Stability Testing, Shelf Life

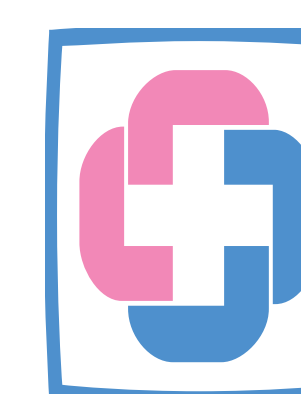
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Contract Manufacturing of Sildenafil Suspension for Paediatric Patients



KK Women's and Children's Hospital
SingHealth

Singapore Healthcare Management 2018

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Introduction

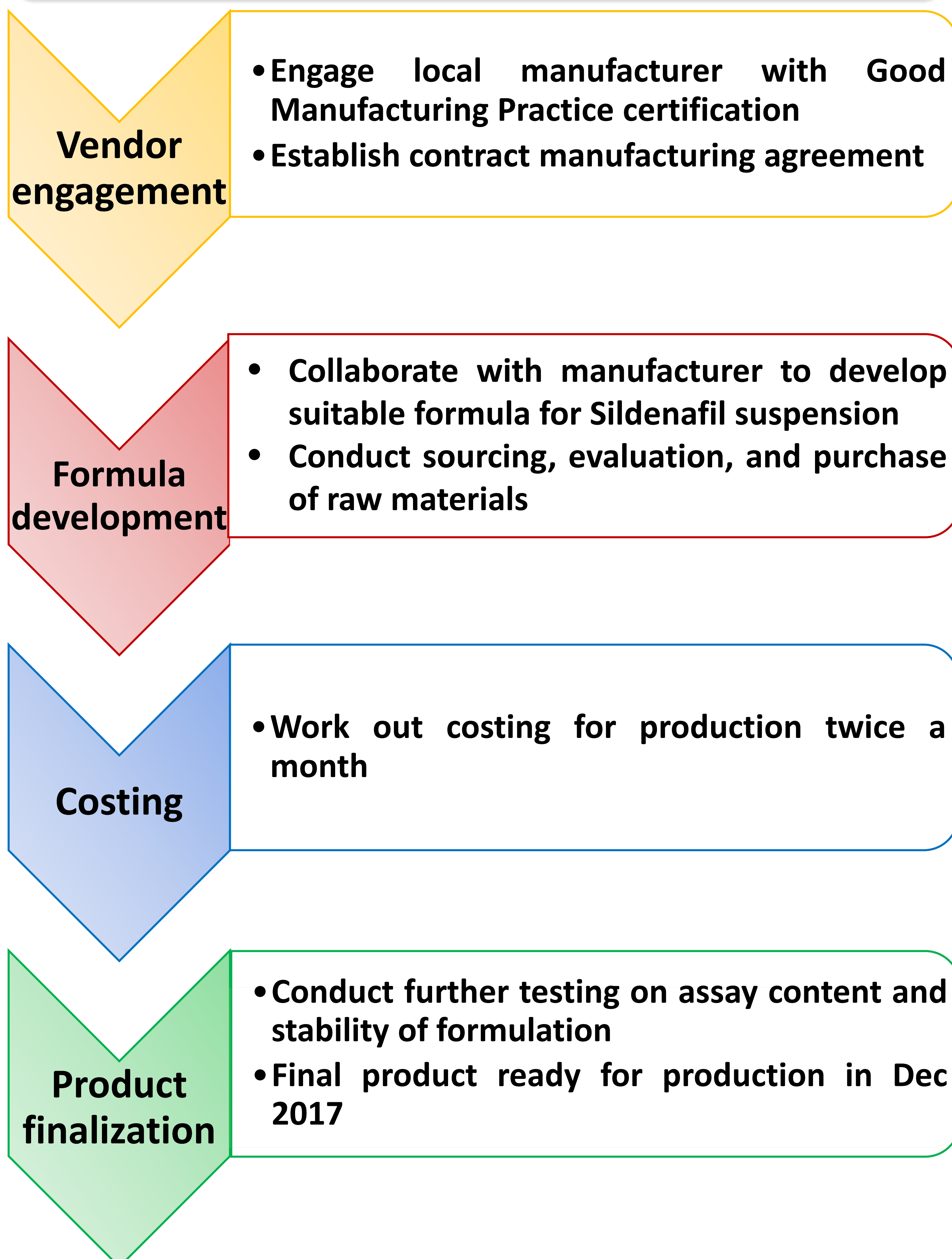
Sildenafil is used in the treatment of paediatric pulmonary hypertension at KK Women's and Children's Hospital. Administration to paediatric patients is a challenge as there are no registered liquid formulations available in Singapore. Pharmacy has been compounding a suspension extemporaneously to meet this requirement since 2007. An average of 12,000mL is prepared each month with 75 hours of manpower spent.

Aim

We identified a need to explore the production of Sildenafil suspension on a larger scale with the aim to:

- Reduce cost to hospital
- Reduce manpower time spent on compounding

Methods



Results

Sildenafil Suspension Formulated

- Shelf Life: 60 days
- Storage at 2 - 8°C



Significant Cost Savings

- New formulation \$0.43/mL cheaper than previous extemporaneous preparation
- 61.4% price drop

Manpower Time Savings

- 74.5 man hours saved per month
- 99.3% decrease



**\$146,510
OVERALL
ANNUAL COST
SAVINGS!**



Discussion

The new Sildenafil Suspension was rolled out hospital-wide in January 2018 and was well-received. However the shelf-life was shorter compared to the previous preparation. Further stability testing was explored with manufacturer. In June 2018, the shelf life was further extended to 70 days.

Pharmacy also embarked on a home-delivery service to improve patient convenience and reduce waiting times at Outpatient Pharmacy. Patients no longer have to return to Pharmacy every 2 months before their suspension expires.

Conclusion

The contract manufacturing in collaboration with a local manufacturer is effective in reducing cost and manpower time spent by Pharmacy.

Pharmacy is currently reviewing all extemporaneous preparations to explore if this initiative can be extended to other labour-intensive and high-cost products.