

تقليل وفيات الأمهات المصابات بالأنيميا المنجلية

اجتماع حول الإسلام و الصحة الإيجابية في اطار
مبادرة تعاون جنوب - جنوب
افضل الممارسات في الصحة الإيجابية بمملكة البحرين



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Reducing maternal Death in SCD Mothers Bahrain Experience



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SCD in Bahrain

One of the common hereditary blood disorders Bahrain.

Major health problem in the Kingdom .

1992, Screening of all pregnant women began, with testing of the newborn if the mother was found to be a carrier.

1993, premarital counseling service was organized.

1998, student screening project began

2004, premarital testing & counseling is mandatory by the law.

2007, newborn screening program for blood diseases was launched



Maternal Mortality – WHO

“ Is the death of a woman while pregnant or within 42 days of termination of pregnancy,

irrespective of the duration & site of the pregnancy,

from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes”.

Maternal Mortality in Pregnancy Complicated by SCD



1941

- Initial report: 33% MM & 50% fetal wastage. (Kobak, Stein, Daro, 1941)

Recent studies

- MM varies from 0.4% - 5% (AL Jamma et al 2009, Smith et al 1996, Villers et al 2008, Alfolabi et al 2009)

SCD during Pregnancy – Incidence Bahrain

- ▶ Reported incidence during pregnancy **0.67%**
- **0.8%** (El-Shafei et al 1992, Rajab et al 2006)
- ▶ In other studies varies: **0.1 - 1.3%** (AL Jama et al 2009, Smith et al 1996, Villers et al 2008, Alfolabi et al 2009)

SCD during Pregnancy – Complications

Bahrain El-shafei 1992

Complications	SCD: 140 patients	Control: 294 patients)
Maternal mortality	1.4 %	0
Perinatl mortality	73.3/1000 birth	6.8/1000 births

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Royal College of
Obstetricians &
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Pregnancy in sickle cell disease in Bahrain

AFFAF M. EL-SHAFEI, JAGJEEVAN KAUR DHALIWAL, AMARJEET KAUR SANDHU

First published: February 1992 | <https://doi.org/10.1111/j.1471-0528.1992.tb14463.x> | Citations: 15

SCD during Pregnancy – Complications

Bahrain Rajab 2006

Complications	SCD (351 patients)	Control (N0 351 patients)
Spont miscarriage	32 %	12 %
PTL	26 %	12 %
IUGR	10-13 %	4-7 %
CS rate	19 %	12.7 %
PET	No difference	
PPH	No difference	
Maternal death	1.1	0

SCD associated Maternal Mortality – Bahrain

Al Juffairi 2014

	1977-1986	1987- 2004	2005-2011	Total
No. of maternal deaths	37	60	16	113
Total births	109,221	243,232	116,315	468,768
MMR/100,000 Total births	33.9	24.7	14	24

Bahrain Medical Bulletin, Vol. 36, No. 4, December 2014

Maternal Mortality in Women with Sickle Cell Disease

Zainab Al-Jufairi, MHPE, FRCOG* Amarjit Sandhu, MD, FRCOG

SCD associated Maternal Mortality – Bahrain (Al Juffairi 2014)

Immediate cause of death	SCD maternal deaths (n=37)	Other maternal deaths (n= 85)	Odds ratio (95% CI)	p-value
Embolism	13 (35%)	18 (21%)	1.86 (0.8 - 4.3)	0.15
Infection	9 (24%)	14 (16.5%)	1.6(0.63-4.19)	0.3
Haemorrhage	6 (16%)	14 (16.5%)	0.98 (0.34-2.79)	0.97
Acute chest syndrome	5 (13.5 %)	0	28.9 (1.6-538.2)	0.024*
Heart disease	1 (2.7%)	10 (11.8%)	0.2 (0.025-1.69)	0.14
Hypertension	0	18 (21%)	0.05 (.003- 0.83)	0.0368*

Maternal Mortality – Bahrain

SCD is the leading cause of maternal death in Bahrain

Accounts for 30 % of maternal deaths

Despite there is a decline in MMR in Bahrain but no substantial reduction in SCD death.

Embolism is the leading cause of death in both groups.

Other important causes of maternal mortality among women with SCD are sepsis, haemorrhage and acute chest syndrome

FOCUS PDCA

Reduce
Maternal
Mortality for
Mothers with
Sickle cell
disease (SCD)



Find a process that needs improvement



Organize a team who is knowledgeable in the process



Clarify the current knowledge of the process



Understand the causes of variation



Select the potential process improvement

FOCUS PDCA

"Reduce Maternal Mortality for Mothers with Sickle Cell Disease (SCD)"



Kingdom of Bahrain
Ministry of Health
Quality Management Section

FOCUS – PDCA FORM Obstetric and Gynae Department

Project Name	Starting Date	Completion Date
Reduce Maternal Mortality Rate for mothers with Sickle cell disease (SCD)	Jan 2012	March 2018

	FOCUS	
F	Find Improvement opportunity	1. Maternal mortality rate (MMR) in Bahrain was 42.3 in the year 1977-1981 which decrease to 26.9 in 1982-1986 and then to 24.6 till date. However, Sickle cell disease (SCD) remains to be the leading cause of maternal death in the Bahrain and responsible for 25% of the indirect causes of death between years 1987-2004.
O	Organize A team	A team has been formed from the following members: 1. Dr. Nacema AbduKarim: chairperson Obs & Gyn department, Feto-maternal-medicine 2. SCD Team: form from the following consultant: Dr Amal Hassani, Saeeda AL Bulushi and Dr Zainab Al Juffairi and Dr Ghada Hamad and Dr Fatima Al Khan: Chief resident 3. Dr. sharifa S.Ali: Consultant obstetrician and Gynae- Head of Quality team in the department 4. Amal Ateeq : administrative filing section 5. Dr Khalid Sharif: Chairperson Hematology-Oncology Department

FOCUS PDCA - Pregnancy with SCD

FIND: SCD remains to be the leading cause of maternal death in the Bahrain

SCD is responsible for 30% of the indirect causes of death between years 1987-2004.

Maternal mortality rate (MMR) in Bahrain was 42.3/10,000 in the year 1977-1981

MMR decrease to 26.9/10,000 in 1982-1986 then to 24.6/100000 till date.

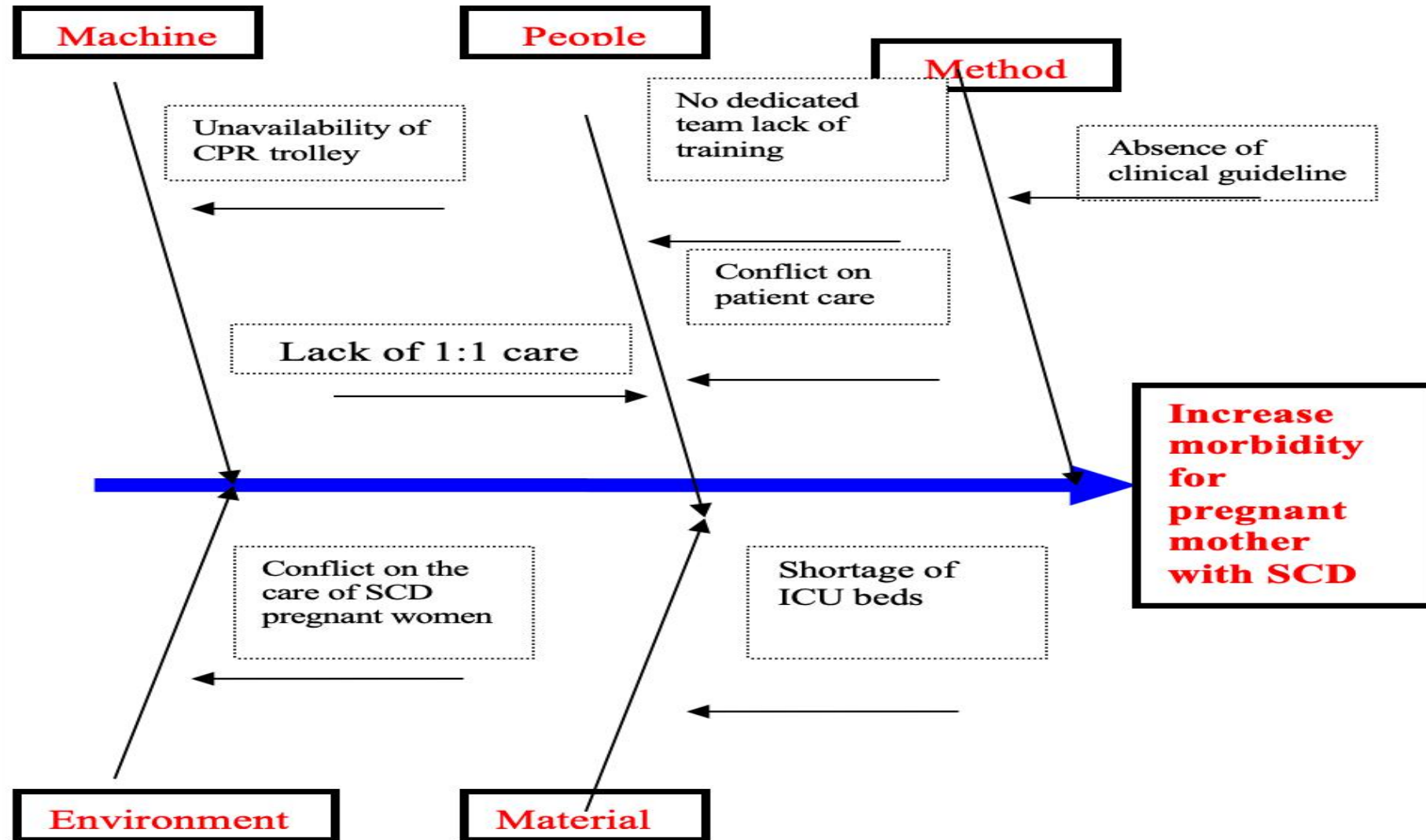
FOCUS PDCA - Pregnancy with SCD

- **Organize**:
- Premarital counselling
- School screening
- Neonatal screening program
-

U

Understand
The problem/
variations in process

Fish Bone Analysis.
For Morbidity of SCD pregnant women



FOCUS PDCA - Pregnancy with SCD

- **Form SCD team: started with 4 consultant only then increased to 5.**
- **SCD antenatal clinic: dedicated established on 2010, twice weekly with an updated protocol on 2012**
- **Multidisciplinary team: Hematologist, obstetrician, anesthetist, paed, nurses, ICU specialist**
- **HDU beds with 1:1 nursing care**
- **Updated protocol. More aggressive pain management and thromboprophylaxis**
- **Low threshold for admission**
- **Almost all SCD pts to be followed at our hospital**

Antenatal visit SCD clinic

Total SCD Per Month 2020

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Total	65	69	63	33	43	41	53	39	42	22	53	45	568

S	Select Desired outcome	<ol style="list-style-type: none"> 1. To develop a system for the admission of SCD mothers with complications. 2. To have standby high dependency beds in the antenatal ward for SCD mothers with complication in case no beds available in the ICU. 3. To create a SCD team composed of consultant obstetrician & hematologist 4. Implement the established mechanism.
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	PDCA	
P	Plan Steps of project/ Tasks	<ol style="list-style-type: none"> 1. Create SCD team in the Obstetrics Department 2. 4 beds have been allocated as high dependency beds for SCD mothers 3. Provision of 1:1 care for sick mother with SCD 4. Ongoing discussion with the hematologist to share the care of mother with SCD
D	Do The solution identified	Arrangement started from May 2010 and August 2010 SCD was established with SCD clinic
C	Check Results	<ol style="list-style-type: none"> 1. Compare the maternal mortality rate prior the changes and after Words

FOCUS PDCA - Pregnancy with SCD - Results

	SCD	Non SCD	Cause of Death SCD	Total
2012	3	1 septic abortion 1 Thyroid storm	2 cases Massive PE 1 Acute chest syndrome 1 Sepsis	5
2013	1	1 Intracranial haemorrhage	1 Massive PE ?? Sepsis	2
2014	-	1 Meningitis 1 Multiple trauma /?? Domestic violence ?? Suicide		2
2015	-	4		4
2016	1	3 acute haemolysis		4
2017	-	1 acute hepatic failure ?? Sepsis 1 TTP post PET		3
2018	-	1 abruptio placenta brought died 1 pneumonia 1 septic shock with septic abortion		3

	SCD	Non SCD	Total
Total death from 2012-2018	5	18	23
%	21.7 %	78.2 %	100

Conclusion

- SCD remains the leading cause of maternal death for the last four decades
- There was decline in SCD related maternal mortality after we started our project in
- More data still need to be analyzed to reflect the actual improvement
- Its observed that SCD maternal death has reduced drastically falling to zero in 2017-2018.

