

Postoperative Nursing Care of the Solid Organ Transplant Recipient

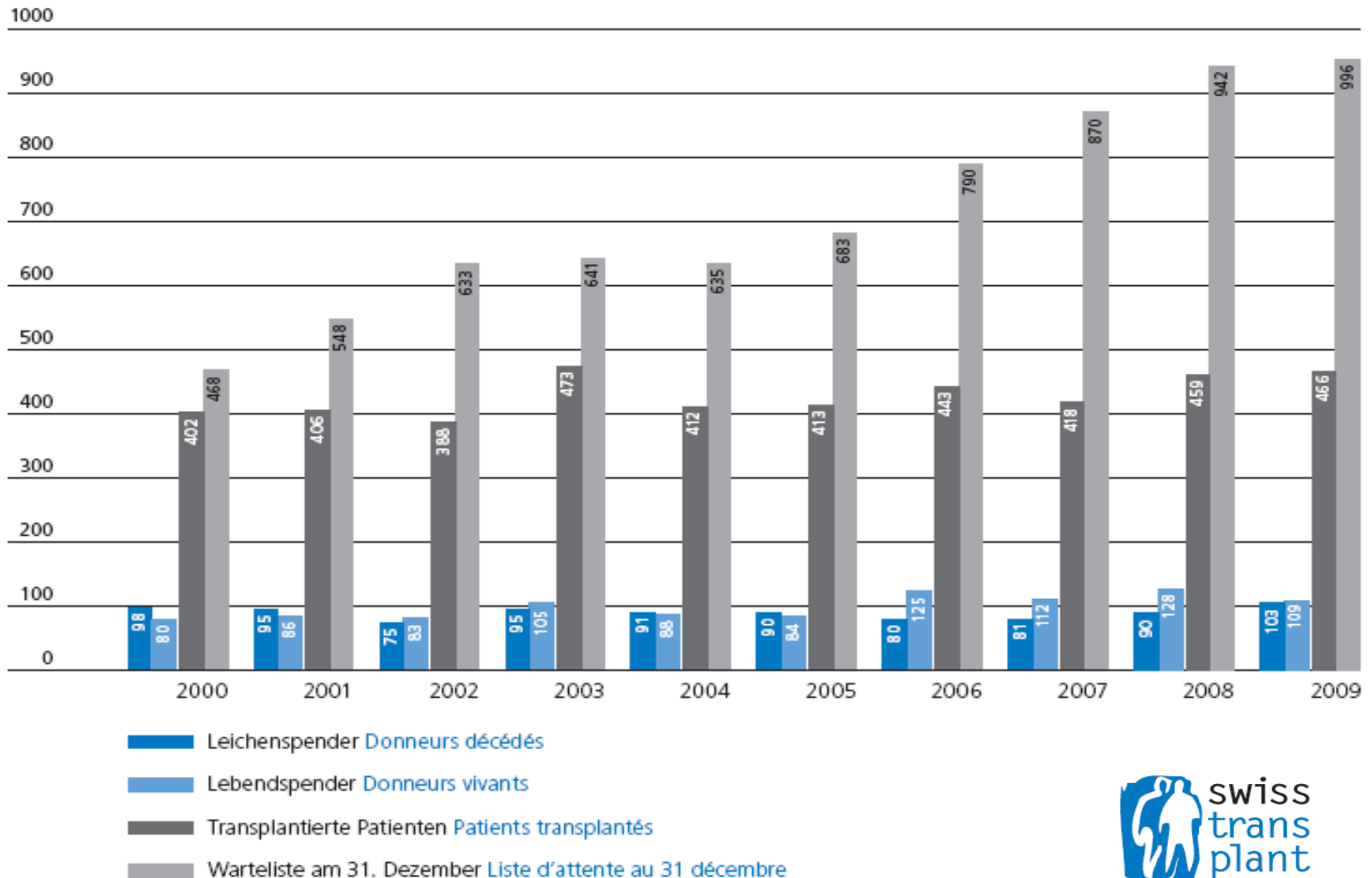
**Réunion annuelle
Société Suisse de Médecine Intensive SSMI**

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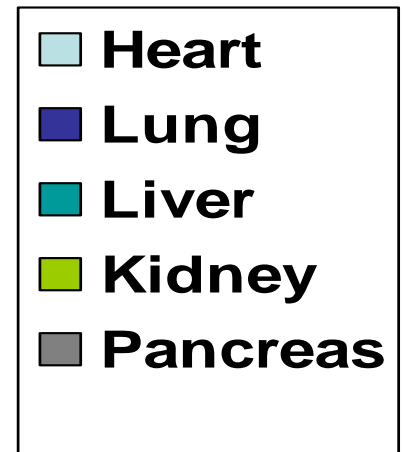
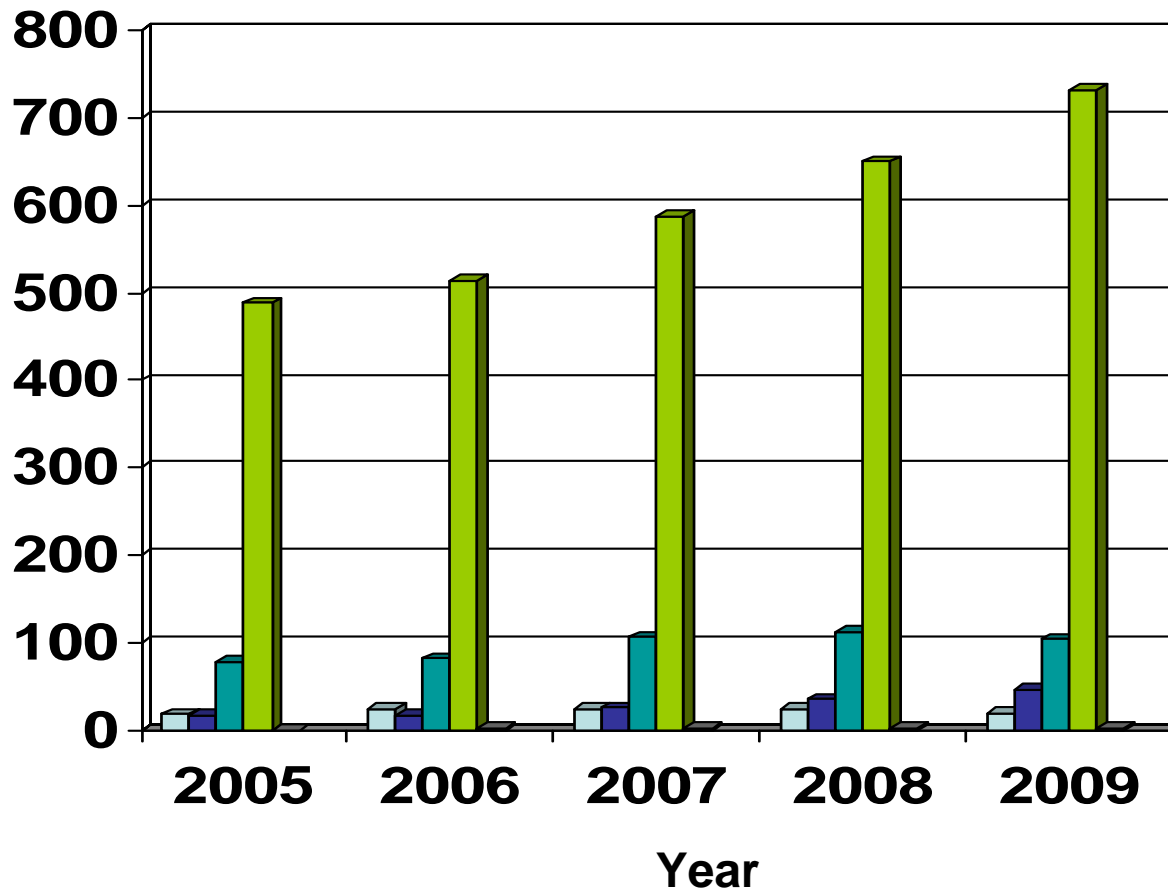
Epidemiology

Number of donors, organ transplant recipients and patients on waiting list (2000-2009)

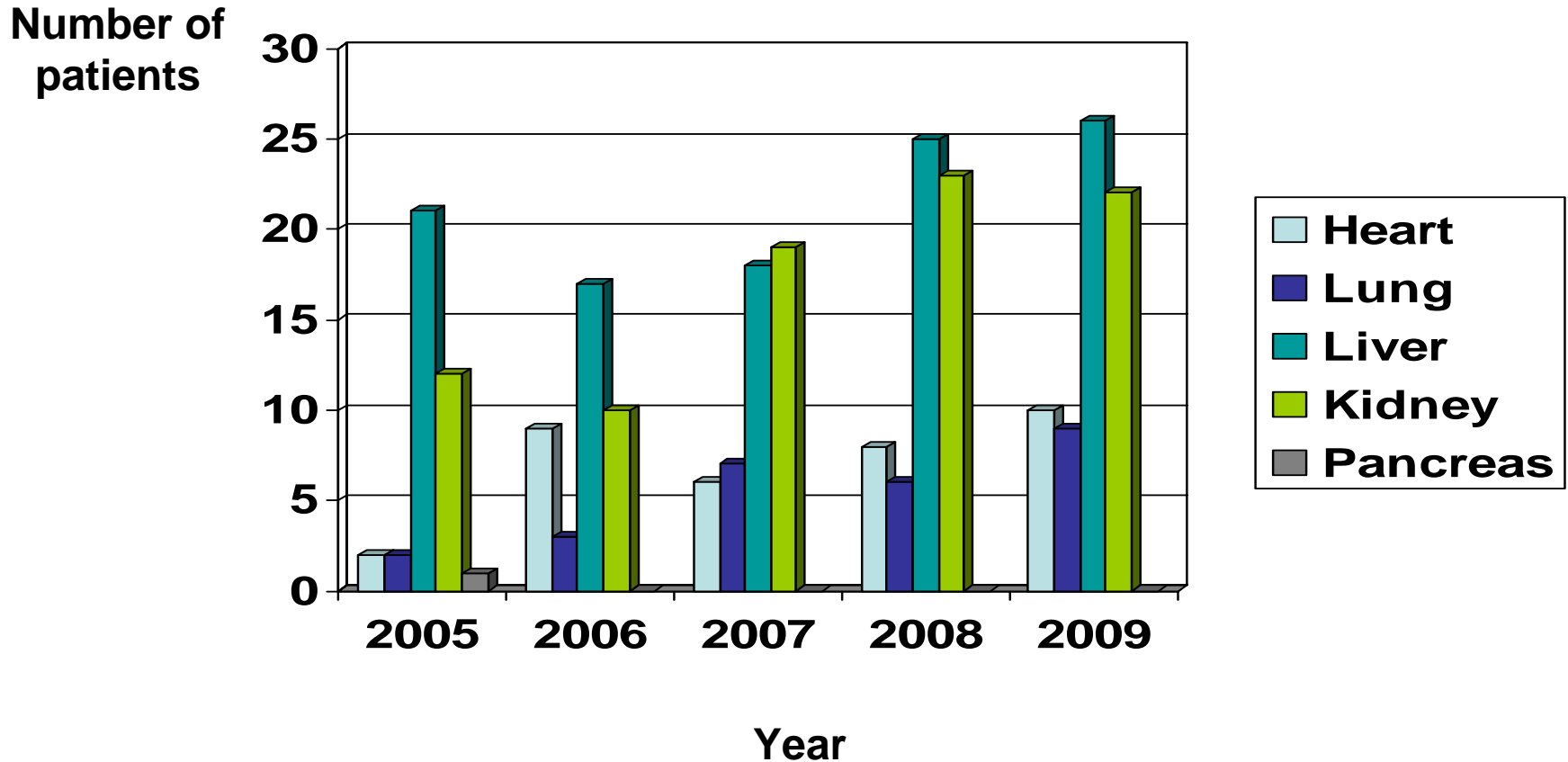


Number of patients on waiting list per organ (2005-2009)

Number of
patients

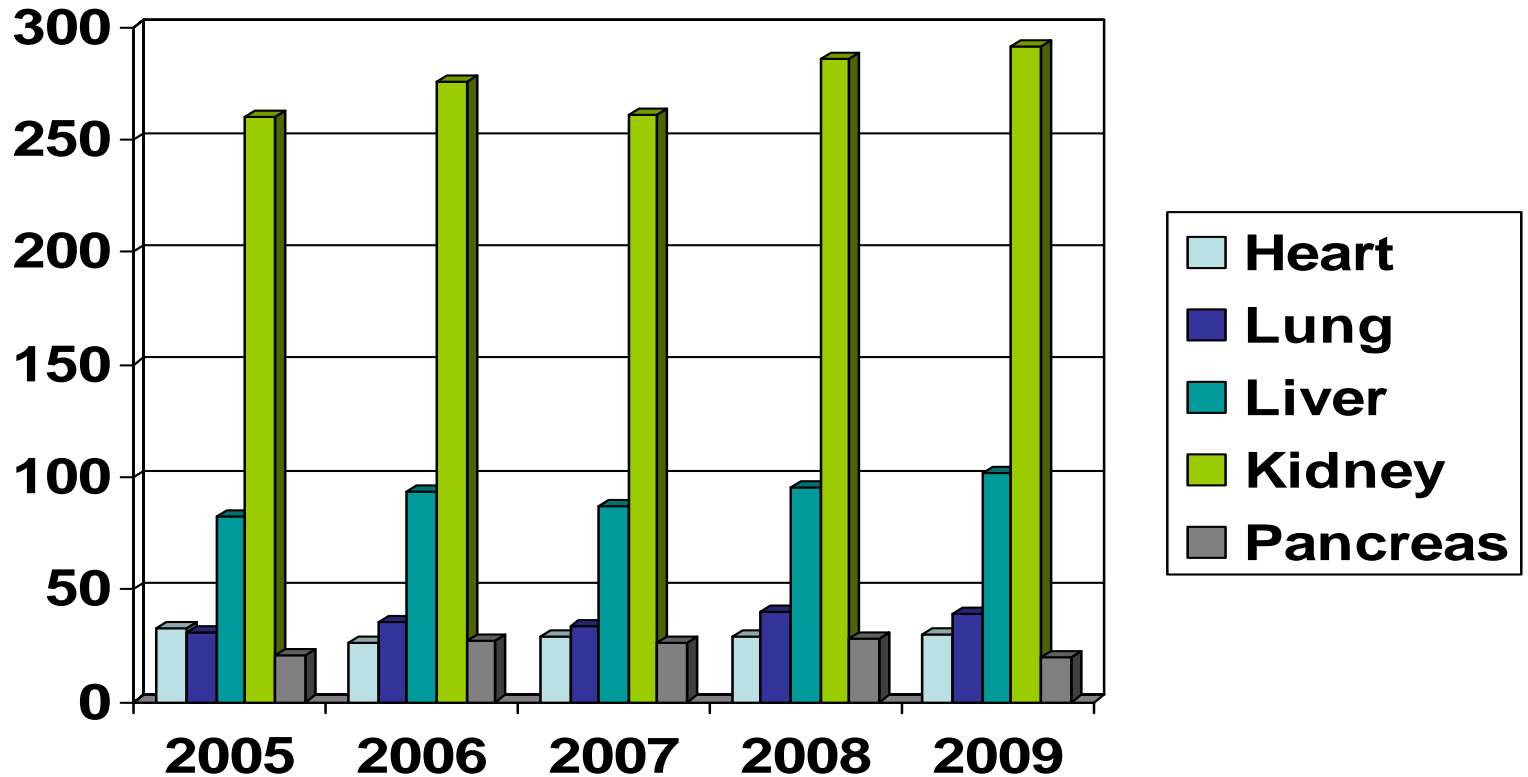


Number of patients who died on waiting list per organ (2005-2009)



Number of transplantations per organ (2005-2009)

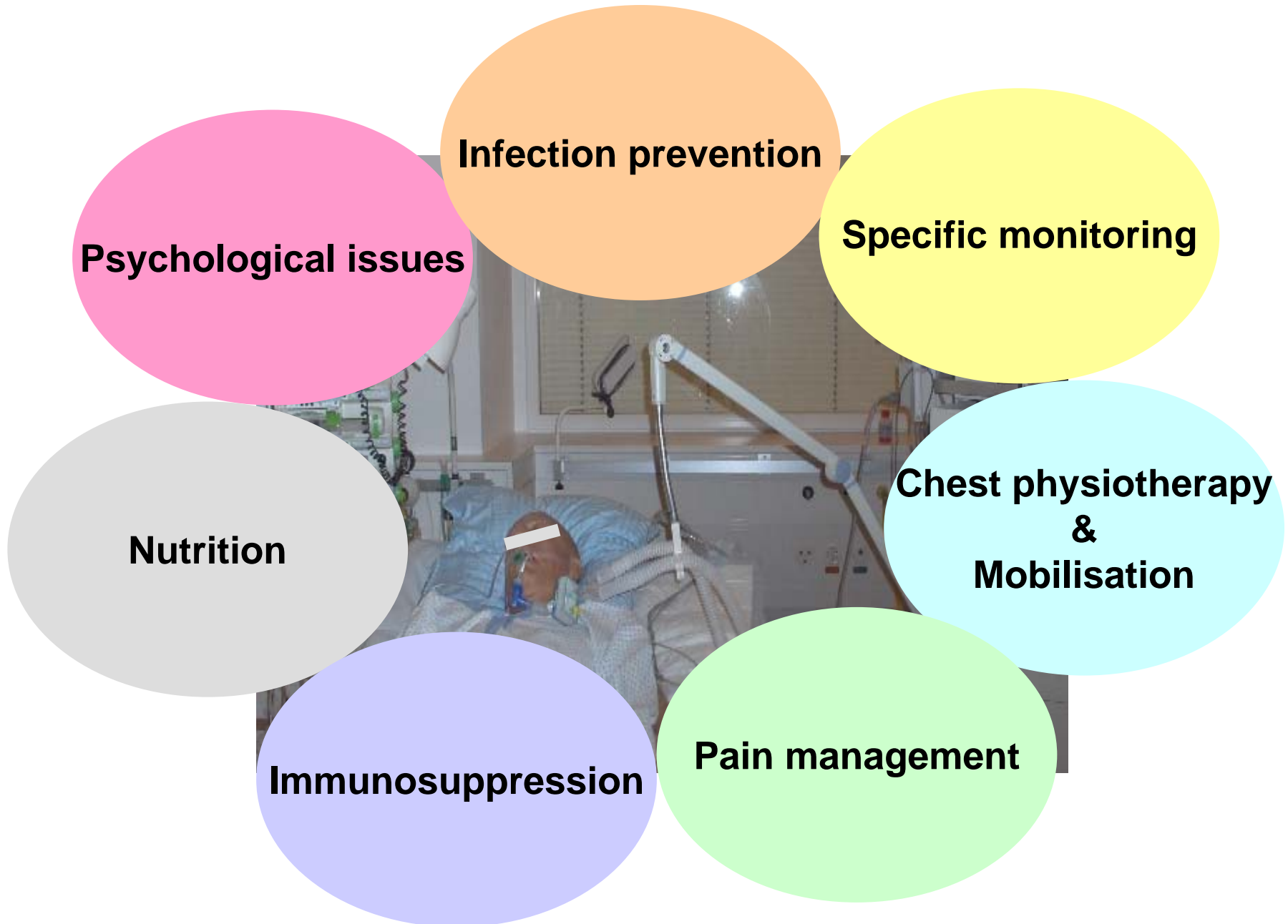
Number of
transplantations



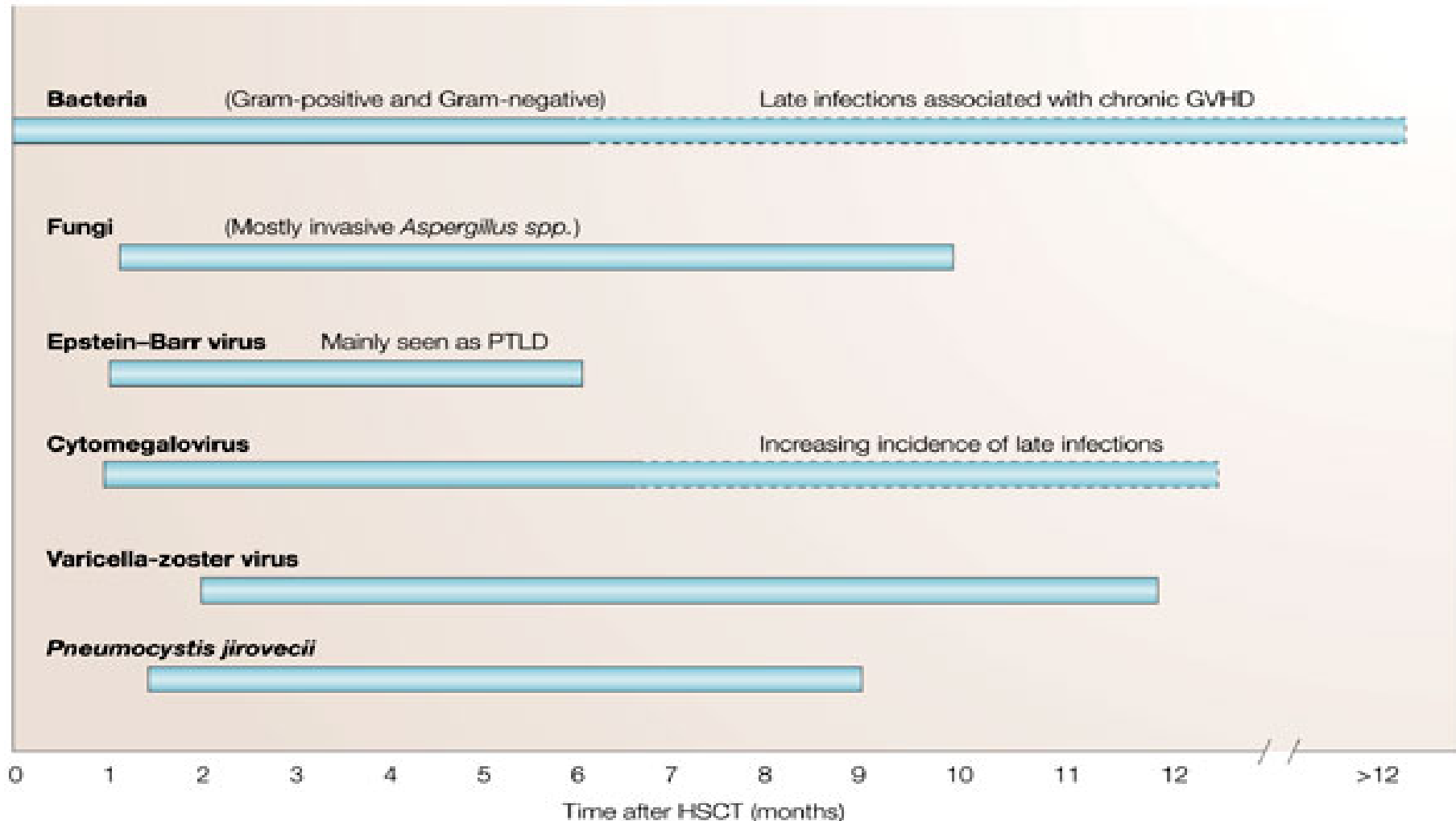
Year

Postoperative Nursing Management

Key aspects of postoperative nursing care



Infectious complications



HSCT = haematopoietic stem-cell transplantation

GVHD = Graft-versus-host disease

PTLD = post-transplant lymphoproliferative disease (PTLD) of donor tissue

Infection prevention strategies

- Antibacterial prophylaxis depending on organ transplanted
- Antiviral prophylaxis according to donor and transplant recipient serologic status
- Antifungal prophylaxis depending on risk and epidemiologic factors

Infection prevention strategies

- Standard precautions and strict hand hygiene

Darmon M. *Resuscitation* 2002; 11:284

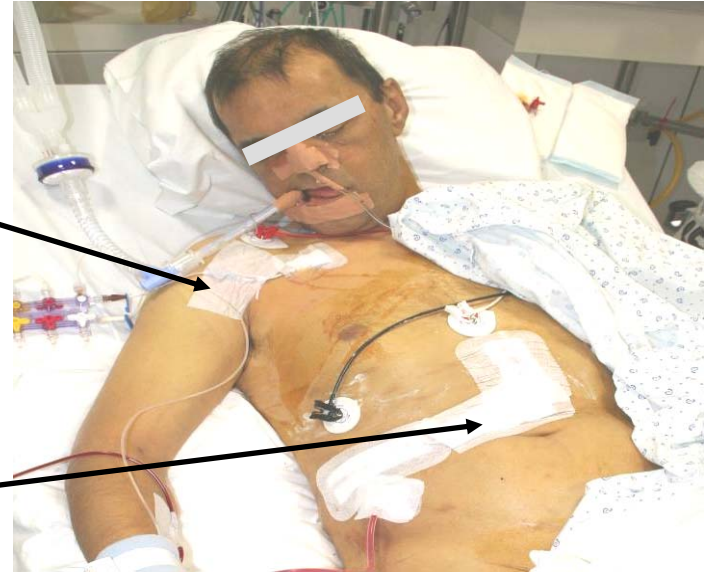


- Water filtration devices



Infection prevention strategies

- Strict care of catheters
- Daily surgical wound inspection + care
- Removal of all indwelling catheters as soon as possible



Specific monitoring: LIVER



Monitoring

Graft function assessment:

- Neurologic assessment (GCS, pupils)
- Laboratory monitoring:
 - Liver function tests
 - Lactate
 - INR/prothrombin time/ Fact V
 - Glucose + electrolyte
- Bile production (liver doppler ultrasonography)

Complications

→ Primary graft non function:

- Coma, brain oedema + herniation
 - Coagulopathy/bleeding
 - Electrolyte imbalance: hypoglycemia
-
- Hepatic vein thrombosis
 - Biliary leak
 - Acute rejection

Specific monitoring: LUNG



Monitoring

Graft function assessment:

- Lung assessment:
 - Clinical assessment
 - Blood gas analysis
 - Chest X-Ray
 - Bronchoscopy
 - Lung function testing

Complications

- Primary graft non function:
 - Ischemia-reperfusion injury
- Bronchial anastomosis leakage
- Acute graft rejection
- Bronchiolitis obliterans syndrome

Specific monitoring: HEART



Monitoring

Assessment of graft function:

- Hemodynamic assessment:
 - Cardiac function monitoring
 - Electrocardiogram
 - Laboratory monitoring
 - Echocardiography

CAVE cardiac denervation

Complications

→ Primary graft non function:

- Ventricular dysfunction
 - Arrhythmias
 - Bleeding/tamponade
 - Acute graft rejection
 - Coronaropathy

Specific monitoring: KIDNEY



Monitoring

Assessment of graft function:

- Renal function assessment:
 - Diuresis
 - Laboratory monitoring
 - Drainage
 - Echography

Complications

→ Primary graft non function:

- ARF/oliguria
- Anastomosis leakage
- Thrombosis

- Acute graft rejection

Chest physiotherapy & Mobilisation

Chest physiotherapy

Lung transplant:

- Bronchial denervation
- Cough reflex impaired

Liver transplant:

- Diaphragmatic mobility impairment

Carlin et al. Crit Care Nurs Q 2009; 32:49

Mobilisation

Prevention of immobility syndrome + atelectasis



Nutrition

- Enteral nutrition within 12-24 hours post ICU admission [ESPEN Guidelines on Enteral Nutrition, Clin Nutrition 2006](#)
- Consider parenteral nutrition if enteral route is contraindicated or inadequate to cover energy needs within 48 hours [ESPEN Guidelines on Parenteral Nutrition, Clin Nutrition 2009](#)
- Oral diet:
 - No raw vegetables, meat or cheese
 - Meat well cooked
 - No grapefruit juice

Psychological issues

Symptoms of anxiety and depression during the first week post transplant:

- Kidney transplant: 20%
- Liver transplant: 30%
- Lung transplant: 29%
- Cardiac transplant: 63%

Start screening and treatment in the ICU

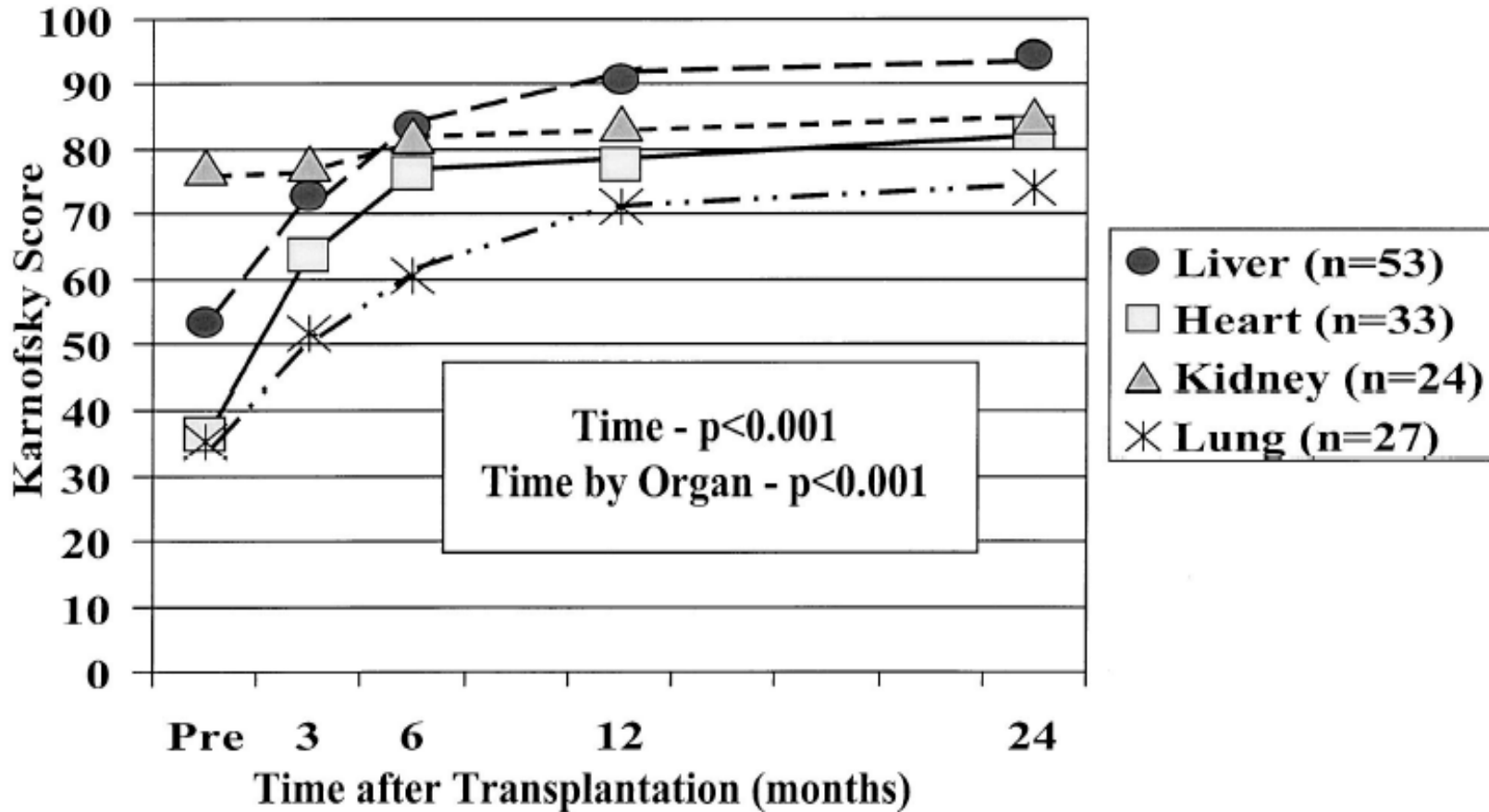
Do not forget relatives!

One Year Adjusted Patient Survival by Organ and Year of Transplant, 1997 to 2006

		Year of Transplant									
		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Transplants	Kidney: Deceased Donor	6,573	6,803	6,855	6,778	6,952	7,173	7,300	7,784	8,285	8,865
	Kidney: Living Donor	3,598	4,008	4,262	4,981	5,370	5,587	5,746	5,948	5,854	5,750
	Pancreas Transplant Alone	58	54	88	92	101	115	96	98	111	84
	Pancreas After Kidney	89	107	137	223	221	302	278	322	272	218
	Kidney-Pancreas	834	980	920	900	876	893	859	870	881	899
	Liver: Deceased Donor	3,487	3,854	3,919	3,950	4,014	4,266	4,607	5,008	5,175	5,358
	Liver: Living Donor	82	86	234	390	513	354	311	316	311	281
	Intestine	55	61	58	69	105	91	100	142	147	147
	Heart	2,190	2,211	2,064	2,094	2,103	2,042	1,980	1,891	1,971	2,071
	Lung	874	816	842	922	1,008	1,002	1,030	1,121	1,328	1,343
	Heart-Lung	62	44	48	46	27	32	26	38	34	31
Survival (%)	Kidney: Deceased Donor	94.1%	95.0%	94.4%	94.2%	94.9%	95.1%	95.2%	95.6%	95.4%	95.9%
	Kidney: Living Donor	97.4%	97.8%	97.9%	97.7%	97.7%	98.0%	98.4%	98.2%	98.3%	98.6%
	Pancreas Transplant Alone	91.7%	98.2%	98.6%	+	97.0%	97.4%	93.9%	95.0%	98.2%	97.6%
	Pancreas After Kidney	94.3%	94.4%	94.2%	95.9%	95.5%	95.7%	95.4%	95.6%	97.8%	96.8%
	Kidney-Pancreas	94.8%	93.7%	95.0%	95.1%	94.2%	94.9%	95.6%	94.6%	95.3%	94.8%
	Liver: Deceased Donor	85.3%	85.4%	84.7%	86.2%	85.6%	86.7%	86.3%	87.1%	86.7%	87.6%
	Liver: Living Donor	85.0%	78.5%	80.7%	86.6%	87.8%	85.1%	90.6%	92.3%	89.4%	91.2%
	Intestine	60.4%	68.7%	61.1%	75.8%	72.7%	77.5%	81.9%	80.1%	79.1%	78.4%
	Heart	85.1%	85.7%	83.9%	85.8%	85.6%	87.1%	88.1%	88.1%	87.5%	87.9%
	Lung	75.1%	75.3%	75.3%	76.3%	77.0%	80.9%	83.8%	85.0%	83.1%	84.8%
	Heart-Lung	59.2%	56.9%	55.7%	63.1%	74.5%	62.0%	54.7%	73.6%	76.2%	71.2%

Source: OPTN/SRTR Data as of May 1, 2008.

Performance after transplant



Take Home Messages

- Transplant recipients are at high risk of infectious complications
- Postoperative nursing care is of paramount importance for early and efficient management of post transplant complications



- **Infection prevention**
- **Specific monitoring**
- **Chest physiotherapy + mobilisation**
- **Pain management**
- **Immunosuppression + nutrition**
- **Psychological issues**



Thank you for your attention